
PSYCHOGRAPHIC AND BEHAVIOURAL SEGMENTATION OF WINE CONSUMERS

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ABSTRACT

The purpose of this article is to identify specific market segments of wine consumers based on their demographic, psychographic and behavioural characteristics. The data was collected through an online survey of 269 wine consumers in Serbia. The data were analyzed by using multivariate statistical methods (factor analysis and clustering) in conjunction with descriptive and inferential statistics (Chi-square test, one-way ANOVA, independent t-test). Three consumer segments were identified by applying a TwoStep cluster analysis: Casual consumers, Recommendation responsive consumers and Wine enthusiasts. In terms of demographic characteristics, education, place of residence and household type were found to be significantly different among consumer groups. Findings can be used as a basis for the development of effective promotional campaigns targeted at specific consumer segments.

Introduction

With its pleasant flavour and aroma, wine is considered a predominantly hedonistic product with various characteristics that determine its overall quality (Veljović et al., 2021). In general, wine quality is determined only after opening the wine and tasting it, so predicting wine consumers' preferences and attitudes is highly recommended. Consequently, the need for screening wine consumers is emphasised with the aim of providing insights into the factors that determine consumption. Wine consumers'

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preferences are not only shaped by perceptual or intrinsic wine attributes, but by the integrated influence of multiple factors related to wine consumption, such as social characteristics and influences, individual behavioural factors and interpersonal factors (e.g. culture, values) (Carollo et al., 2022).

Among the various factors that influence the quality of wine, the aging process is one of the most important for production of high-quality products (Canas et al. 2022) The common practice is that the vast majority of wine is aged in oak barrels for a long period (several months to several years), this technological process is called natural aging (Ma et al. 2022). During the aging process, the contact (e.i. time of aging) between the wood surface and the wine is crucial for developing pleasant sensory characteristics of the wine. However, among the EU's regulatory framework, Spanish wine regulations more precisely define aging requirements for different wine classifications. According to aging requirements, aged Spanish wines are classified as Young, Roble, Crianza, Reserva and Grand reserva (EC, 401/2010). In Serbian, the Wine Law («Sl. glasnik RS», 2012) defines two traditional label «mldo» and «reserve» (or «archive»). Young wine can be sold no later than March 31 of the year following the year of grape harvest. Reserve is an additional designation in the category of premium wine with controlled and guaranteed geographical origin. Although the EU countries are the most globally important producers of wine, only the Spanish regulation have a classification of wine based on aging requirements.

Nowadays, the constant decline in per capita consumption of wine (Villanueva et al., 2017) is evident in all wine-producing countries in Europe. A dramatic decline in wine consumption for one decade of around 50% is also reported for the Republic of Serbia (OIV 2025). In order to improve market presence and increase the consumption of Serbian wine, it is, therefore, necessary to gain a deeper insight into the wine market structure. Market segmentation is a valuable tool for gaining a better understanding of consumer characteristics and behaviour, which is a basis for developing effective marketing strategies for specific market segments. Consumer-related information, such as consumer profiles and perceptions, could be used by wine producers and marketers as a tool for better decision making and the development of appropriate marketing techniques (Chu et al., 2020). In this sense, the aim of this article is to identify specific market segments of wine consumers in Serbia based on their demographic, psychographic and behavioural characteristics.

Literature review

Segmentation studies serve as valuable source of information regarding different groups of people formed based on their knowledge, attitudes, sociodemographic, geographic and professional characteristics. Market segmentation studies are also common in the wine industry on a global level. There are various segmentation criteria, but the most common are demographic, psychographic and behavioural criteria. The psychographic criteria relate to lifestyle and personality traits, while behavioural segmentation is based on segmentation criteria such as consumption patterns, consumption occasions, benefits

sought and the like (Geraghty & Torres, 2009). Some studies use only psychographic or behavioural segmentation approaches, while others combine the two to create more specific market segments.

Psychographic segmentation of wine consumers

Bruwer et al. (2002) developed a wine-related lifestyle (WRL) instrument for the purpose of segmenting the Australian wine market and identifying different wine-related lifestyle segments of consumers. The WRL research tool was further developed and improved by Johnson and Brewer (2003), Bruwer and Li (2007) and Bruwer and Li (2017) and used for the purpose of consumer segmentation based on a wine-related lifestyle approach. Geraghty and Torres (2009) conducted a segmentation study of the Irish wine market using a lifestyle segmentation approach that included lifestyle values, product attributes, and purchasing and consumption patterns. One of the most recent market segmentation studies, also conducted in China by Yabin and Lee (2020), combined the demographic criteria with the wine-related lifestyle (WRL) approach, resulting in five different market segments. One of the most recent studies, conducted by Bekar and Benzergil (2025) used the Values and Lifestyles Attitudes Scales to reach specific psychographic types of wine consumers in Turkey.

Koksal (2021) conducted a segmentation study on Lebanese wine customers using consumers' level of engagement with wine as the main criterion for segmentation, as well as socio-demographic characteristics and wine-related behaviour. The segmentation study conducted by Brunner and Siegrist (2011) on a sample of Swiss consumers used the criteria of consumer involvement, lifestyle and motivation. Wiedmann et al. (2014) found that consumers in Germany belonging to different age groups have different values, involvement and wine consumption. A survey of Spanish consumers aimed at identifying the most important attributes considered when choosing wine found that these attributes differ between segments with different demographics (Bernabéu et al., 2012). Pomarici et al. (2017) analysed a sample of American consumers with the aim of segmenting them based on their preferences for different wine attributes and their psychographic characteristics.

Johnson and Bastian (2007) identified different segments of Australian consumers based on purchasing characteristics and consumer knowledge. Using subjective knowledge as the main criterion for segmentation, a survey of young, urban wine consumers in the Republic of North Macedonia identified three distinct consumer segments, which also differed significantly in terms of wine consumption behaviour and information-seeking habits (Hristov & Kuhar, 2015). Bo Liu et al. (2014) conducted a study in China in which they used product preferences and preferred sources of information as the main criteria for segmentation. Cicia et al. (2013) conducted a study in the Russian wine market based on consumers' wine preferences and their requirements for wine quality. A study conducted on a sample of wine consumers on the Croatian mainland, using purchasing power and brand sensitivity as the main criteria, identified specific segments of wine consumers with different characteristics in terms of wine purchase

and consumption (Kalazić et al., 2010).

A study conducted in Spain indicated four segments of wine tourists which tend to Spanish wineries (Molina et al., 2015). Cruces-Montes et al. (2023) developed an attitudinal scale of the consumer outlook toward wine consumption, on the basis of their study on Spanish consumers and pointed out three dimensions - health consumption, social consumption and wine experience. Lameiras et al. (2026) conducted a segmentation of wine tourists in Portugal and identified four clusters based on motivation and psychographic characteristics. Santos et al. (2020) conducted wine consumer profiling in Portugal on the basis of on their wine product involvement and identified three clusters: high, medium, and low involvement.

Behavioural segmentation of wine consumers

A study based on behavioural segmentation was conducted with a sample of consumers from New Zealand and revealed three distinct buying groups (Thomas & Pickering, 2003). Johnson and Bastian (2015) developed and used an instrument to assess the purchasing and consumption behaviour of wine consumers in Australia (FWI). In a large-scale survey in Hungary, different segments of wine consumers were identified based on their preferences, consumption and purchasing habits (Hlédik & Harsányi, 2019). Bo Liu et al. (2014) segmented the Chinese wine market into three wine consumer clusters based on a behavioural (utility) criterion.

In the study conducted in Germany, the sales channels were used as the most important segmentation criteria together with the average purchase value (Szolnoki & Hoffmann, 2014). A study conducted by Berni et al. (2005) in Denmark was based on occasion-related criteria in connection with wine consumption. Another study aimed to identify consumer segments in the Italian wine market by using the hedonic price model as a segmentation criterion (Caracciolo & Furno, 2020).

By examining the frequency of wine consumption, preferred type of wine, and reasons for disliking wine, Thach and Olsen (2006) segmented a sample of consumers in Northern California. In their later study, these authors examined the characteristics and behaviours of frequent wine consumers in the US and distinguished between high, moderate and low spenders by using price segmentation (Thach & Olsen, 2015). Cho et al. (2014) conducted a large-scale study on a sample of wine buyers in the United States to examine the impact of wine tourism restrictions on consumers' preferences and behavioural intentions when visiting wine-growing regions and found groups with significantly different preferences and intentions. A study conducted in British Columbia, Canada, examined the total number of market segments for California red and white wines based on price dispersion (Carew et al., 2017).

Materials and methods

The study was conducted using an online survey of a convenience sample of wine consumers in Serbia and took place from May to September 2022. As a recruitment

method, the researchers' professional networks were used to overcome the low response rates associated with surveys in general, including online surveys (Bo Liu et al., 2014). The only inclusion criterion for participation was previous consumption of wine. Participation in the survey was anonymous and no sensitive personal data was collected.

The core of the study was a questionnaire comprising 48 questions. The questionnaire contained three main sections. The section on psychographic characteristics contained questions on wine knowledge, wine preferences, preferred origin of wine, wine preferences, reasons for wine consumption, desired outcomes of wine consumption and wine-related characteristics. The section on behavioural characteristics included questions on wine consumption habits and wine purchasing. The final section of the questionnaire included demographic variables. A 7-point Likert scale was used for the questions on psychographic characteristics, i.e. respondents were asked to indicate the extent to which they agreed with the statements on the various elements of the questionnaire.

The analyses were carried out using the statistical software package IBM SPSS 23. The data were analysed using multivariate statistical methods in conjunction with descriptive and inferential statistics. A TwoStep cluster was used with the aim of identifying segments of wine consumers. This approach was also used by other authors investigating similar topics, such as Szolnoki (2018) and Hlédik and Harsányi (2019). The relationship between the clusters and the demographic variables was analysed using a chi-square test for independence.

Results

The total sample comprised 269 respondents. The sample was predominantly female, as it comprised 188 female and 81 male respondents. The average age of the respondents was 38.97 years. The majority of respondents came from Belgrade (48.7%) and smaller cities (24.2%). In terms of household structure, the majority of respondents are married with children (39.4%). Purchasing power is mainly in line with the national average (65.1%), while it is 25.3% above the average. The average amount spent monthly on the purchase of wine is €32.27 (Std. Deviation 41.059).

Reducing the number of variables

The first step of the analysis was to reduce the number of elements and obtain a set of factors that could then be used for segmentation. Separate factor analyses were conducted for the segments relating to psychographic and behavioural variables. An appropriate number of factors were identified by applying parallel analysis (Horn 1965) as recommended by various researchers (Knekta et al., 2019; Lim & Jahng, 2019). The suitability of the data for factor analysis was tested using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of Sphericity.

A factor analysis was conducted with 16 items related to self-reported knowledge and interest in wine and yielded a factor explaining 59.21% of the total variance (KMO = .946; Bartlett's test = 3739.71, $p < 0.001$). The items were originally defined by

Johnson and Bastian (2007) and Brunner and Siegrist (2011). This factor was labelled as originally named, “subjective knowledge about wine”. The second factor analysis was applied to six items relating to attendance at wine events. The items were originally defined by Brunner and Siegrist (2011) and Bruwer and Lin (2016). The analysis resulted in a factor that explained 72.66% of the total variance and was named „wine events“ (KMO = 0.848, Bartlett’s test = 1430.50, $p < 0.001$).

For six items related to selectivity, the importance of geographical origin and the importance of countries of wine production, originally defined by Johnson and Bastian (2015), a factor analysis revealed a factor explaining 60.96% of the total variance, labelled „constituency related to wine“ (KMO = 0.854; Bartlett’s test = 738.37, $p < 0.001$). The factor analysis for the 51 items related to the reasons for wine consumption defined by Brunner and Siegrist (2011) revealed five factors that explained 58.15% of the total variance (KMO = 0.920; Bartlett’s test = 10395.11, $p < 0.001$). Based on the item factor loadings, these five factors were assigned the following labels: “hedonism»,” “social acceptance and showing off»,” “health aspects of wine drinking”, “mood” and “habit“.

The group of items related to consumption loaded on two factors that explained 62.84% of the total variance (KMO = 0.869; Bartlett’s test = 1723.03, $p < 0.001$). One of these was called “consumption on special occasions” and the second factor from this group was entitled “consumption at home and in restaurants”. The next step in the analysis related to the attributes that respondents look for when buying wine. For 39 items from this group, the factor analysis revealed five factors that explained 70.44% of the total variance (KMO = 0.931; Bartlett’s test = 10456.38, $p < 0.001$): “wine origin”, “labelling information”, “appearance”, “recommendations”, “positioning”. Finally, factor analysis was applied to six items related to the purchase of specific wine brands and from specific wineries, five of which were developed by Pomarici et al. (2017) and one of which was added by the authors. One factor was found to explain 65.05% of the total variance, which was labelled “loyalty” (KMO = 0.872; Bartlett’s test = 960.28, $p < 0.001$).

In order to test the reliability and internal consistency of the factors determined, a reliability analysis was carried out using Cronbach’s alpha. Cronbach’s alpha was between 0.878 and 0.967, indicating a high degree of reliability (Shelby 2011). The 16 constraint factors identified using the factor analysis were used as classification variables in the further analysis.

Clusters development

In the subsequent phase of the analysis, a cluster analysis was carried out using the 16 factors identified, with the aim of identifying specific segments of wine consumers. TwoStep cluster was used for the classification (Bacher et al., 2004). Classification using TwoStep cluster is a relatively novel approach to segment wine consumers (Hlédik & Harsányi, 2019; Szolonoki, 2018). This data-driven approach to determine the number of clusters using Schwarz’s Bayesian Information Criterion (BIC) is suitable for working with a large sample.

The analysis resulted in three clusters. The Silhouette measure of cohesion and separation was 0.2, which according to Kaufman and Rousseeuw (2009) represents sufficient cluster quality. The first cluster (Casual consumers - CC) comprised 68 respondents, the second (Recommendation responsive consumers - RR) 116 respondents and the third (Wine enthusiasts - WE) 85 respondents. The characteristics of the three consumer segments are presented in the following sections.

The final cluster centres and the importance of the predictors for 16 variables for three clusters are shown in *Table 1*. In addition, a one-way ANOVA was conducted to compare the means of the factors in these three clusters (Cho et al., 2014). The results were significant for all factors except loyalty ($F = 0.325$, $p = 0.723$).

Table 1. Final cluster centres and predictor importance of variables

Factors	Cluster centres			Predictor importance
	Cluster 1	Cluster 2	Cluster 3	
Subjective knowledge about wine	-.78	-.34	1.09	1.00
Wine events	-.67	-.40	1.07	.91
Label information	-1.12	.25	.55	.68
Pickiness in terms of wine	-.74	-.25	.93	.67
Consumption in special occasions	-.97	.07	.68	.57
Wine origin	-1.02	.23	.5	.53
Hedonism	-.89	.03	.68	.49
Habit	-.44	-.33	.8	.41
Recommendations	-.88	.22	.41	.36
Consumption at home and at restaurants	-.72	.01	.57	.31
Positioning	-.69	.15	.34	.21
Social acceptance and showing off	.05	-.33	.41	.12
Appearance	-.43	.01	.32	.10
Health aspects of drinking wine	-.34	-.08	.39	.10
Mood	.33	-.20	.02	.05
Loyalty	-.06	-.01	.07	.00

Source: Authors

As cluster 3 scored highest on all factors except ‘mood’ and as consumers from this cluster appeared to have a greater knowledge of wines, attended wine events, chose wines of particular origin and consumed wines on many occasions, it was labeled as Wine enthusiasts (WE). The first cluster had the lowest scores on all factors except ‘mood’, where it scored highest, and was therefore labelled as Casual consumers (CC). The second group had neither the highest nor the lowest score on any of the factors, but due to the second highest score on “recommendations”, “wine origin” and “labelling information”, they were labelled as Recommendation responsive consumers (RR).

Description of segments

Chi-Square tests of independence were used to analyse the differences between the clusters in terms of socio-demographic characteristics and wine consumption

preferences (Cho et al., 2014; Hlédik & Harsányi, 2019; Szolonoki, 2018). The demographic characteristics of the three clusters and the results of the chi-square tests are shown in *Table 2*. Among the demographic characteristics, education ($\chi^2 = 21.343$, $p = 0.002$), place of residence ($\chi^2 = 15.092$, $p = 0.020$) and household type ($\chi^2 = 19.160$, $p = 0.038$) were found to be significantly different when comparing the consumer clusters. Although consumers with higher education dominated in all three clusters, significant differences were found. While most (44.1%) of Casual wine consumers had a university degree, slightly less than one-fifth had a secondary school degree, which was significantly higher than in the other two groups. In the group of Wine enthusiasts, there was a high percentage of respondents with a university degree and respondents with master's and doctorate degrees (40.4%, 29.4% and 27.1% respectively). In addition to respondents with a university education (34.5%), the group of consumers responding to recommendations had the highest percentage of respondents with a doctorate (30.2%), followed by respondents with a master's degree (24.1%).

Table 2. Descriptive statistics of the clusters (Chi-Square Test)

	CC (%)	RR (%)	WE (%)	χ^2
Gender				5.313
Female	77.9%	71.6%	61.2%	
Male	22.1%	28.4%	38.8%	
Age				6.988
19-29	16.2%	10.3%	16.5%	
30-39	41.2%	52.6%	38.8%	
40-49	23.5%	23.3%	31.8%	
50-59	14.7%	10.3%	10.6%	
60+	4.4%	3.4%	2.4%	
Education				21.343**
Secondary	23.5%	11.2%	3.5%	
College/university	44.1%	34.5%	40.0%	
Master	20.6%	24.1%	29.4%	
Doctorate	11.8%	30.2%	27.1%	
Place of residence				15.092*
Capital city	51.5%	44.8%	51.8%	
Larger city	10.3%	15.5%	25.9%	
Smaller city	27.9%	25.8%	20.0%	
Settlement	10.3%	14.7%	2.4%	
Employment status				2.380

	CC (%)	RR (%)	WE (%)	χ^2
Employed	82.4%	87.9%	90.6%	
Unemployed	17.6%	12.1%	9.4%	
Household type				19.160*
Single	20.6%	16.4%	7.1%	
Couple without children	10.3%	12.9%	27.1%	
Living with parents/siblings	23.5%	18.1%	15.3%	
Single parent with child/children	7.4%	2.6%	5.9%	
Couple with child/children	32.4%	44.8%	37.6%	
Other	5.9%	5.2%	7.1%	
Purchasing power				6.026
Below average	8.8%	9.5%	10.6%	
Average	76.5%	62.1%	60.0%	
Above average	14.7%	28.4%	29.4%	

* $p < 0.05$; ** $p < 0.01$

Source: Authors

The majority of respondents in all three clusters lived in the capital. In groups CC and RR, respondents from smaller cities were represented in second place (27.9% and 25.8%), while respondents from larger cities were represented in second place (25.9%) in the group of WE. In terms of household type, CC were mainly couples with child(ren) (32.4%) and people living with parents/siblings (23.5%). Among WE, the largest proportion of respondents were couples with one or more children (37.6%) or without children (27.1%). Recommendation responsive consumers were mainly couples with child(ren) (44.8%) or living in households with parents/siblings (18.1%). Similarly, comparisons of clusters were made based on the preferred wine type, the origin of the wine and the preferred wine type by ageing criteria (Table 3).

Table 3. Comparison of clusters based on preferred wine type/origin (Chi-Square Test)

	CC (%)	RR (%)	WE (%)	χ^2
Preferred type of wine				17.372*
White	36.8%	37.9%	31.8%	
Rose	5.9%	8.6%	4.7%	
Red	30.9%	36.2%	27.1%	
White and red equally	14.7%	12.9%	31.8%	
Other	11.8%	4.3%	4.7%	
Wine origin				

	CC (%)	RR (%)	WE (%)	χ^2
Domestic wine	55.9%	53.4%	57.6%	11.576
Wine from the region	10.3%	15.5%	20.0%	
Wine from traditional producing countries	4.4%	11.2%	7.1%	
Wine from nontraditional producing countries	0.0%	0.0%	1.2%	
Not important	29.4%	19.8%	14.1%	
Preferred type of wine according to ageing criteria⁴				
Young wine	8.8%	6.0%	14.1%	20.821*
Roble	2.9%	11.2%	7.1%	
Crianza	13.2%	15.5%	24.7%	
Reserva	8.8%	18.1%	14.1%	
Grand reserva	5.9%	3.4%	7.1%	
Not important	60.3%	45.7%	32.9%	

* $p < 0.05$; ** $p < 0.01$

Source: Authors

Statistically different results were obtained regarding the preferred type of wine across clusters. The results indicated that the greater number of CC (36.8%) expressed preferences for white wine, although the percentage of those preferring red wine was not much lesser (30.9%). In cluster of WE, equal percentage of respondents (31.8%) preferred white and equally red and white wine, whereas the preference for red wine expressed 27.1% of them. Almost equal percentage of respondents belonging to RR group preferred solely white (37.9%) or red wine (36.9%). In general, respondents expressed low preference for rose or other types of wines. As regarding wine origin, no significant differences were obtained. Regarding preferred type of wine according to ageing criteria, there were statistically significant results obtained. For majority of CC respondents (60.3%), ageing was not an important factor. The second frequent choice was “crianza” which was selected by 13.2%. WE expressed the highest preference (24.7%) for crianza wines among all three segments, even though the percentage of those who did not consider wine age as important was slightly higher (32.9%). Slightly less than a half of RR respondents did not pay attention to wine age, while the second most often option was “reserva” (18.1%).

In addition, comparisons were made of clusters based on behavioural patterns, such as: frequency of wine consumption, number of glasses per consumption, average price paid per bottle, consumption patterns (weekly), consumption occasions, satisfaction with wine selection and wine prices in the domestic market, and the maximum price one would pay for a bottle of barrique wine (*Table 4.*).

4 Young wines are typically released within a year and have minimal or no oak aging. Roble wines require at least 12 months of aging, with a minimum of 6 months in oak. Crianza wines require a minimum of 24 months of aging, with a minimum of 6 months in oak barrels. Reserva wines - a minimum of 36 months of aging with a minimum of 12 months in oak barrels. Gran Reserva requires 60 months of aging, with a minimum of 18 months in oak.

Table 4. Comparison of clusters based on behavioural patterns (Chi-Square Test)

	CC (%)	RR (%)	WE (%)	χ^2
Frequency of wine consumption				
Every day/almost every day	2.9%	0.9%	12.9%	103.263**
Often (3-4 times per week)	4.4%	12.9%	35.3%	
Frequent (once a week or less)	14.7%	38.8%	38.8%	
Occasionally (once a month or less)	36.8%	37.1%	11.8%	
Rarely (at least once every 6 months)	20.6%	6.9%	0.0%	
Extremely rare (once a year or less)	20.6%	3.4%	1.2%	
Number of glasses per consumption				
1-2 glasses	82.4%	81.9%	72.9%	2.942
≥3 glasses	17.6%	18.1%	27.1%	
Average price paid per bottle				
Less than 5 EUR	30.9%	9.5%	2.4%	36.579**
Between 5 and 10 EUR	48.5%	44.8%	45.9%	
Between 10 and 20 EUR	14.7%	37.9%	41.2%	
More than 20 EUR	5.9%	7.8%	10.6%	
Consumption pattern (weekly)				
Mainly weekends	64.7%	43.1%	24.7%	24.707**
Combination weekends and workdays	35.3%	56.9%	75.3%	
Purchasing occasions				
Immediate consumption at home	20.6%	20.7%	18.8%	48.483**
Stocks for future consumption	1.5%	12.9%	24.7%	
Special occasions (celebrations)	27.9%	27.6%	22.4%	
Gift giving	39.7%	20.7%	3.5%	
No special occasions	10.3%	18.1%	30.6%	
Satisfaction with wine selection				
Satisfied	82.4%	75.9%	65.9%	6.066
Having trouble finding desired wine	5.9%	10.3%	15.3%	
Needs greater diversity	11.8%	13.8%	18.8%	
Satisfaction with wine prices				
Satisfied	85.3%	83.6%	77.6%	1.805
Having trouble finding wine at reasonable prices	14.7%	16.4%	22.4%	
The maximum price would pay for a bottle of wine aged in barrique barrels				
Less than 10 EUR	36.8%	12.1%	3.5%	47.382**
Between 10 and 20 EUR	41.2%	46.6%	34.1%	
Between 20 and 30 EUR	19.1%	23.3%	36.5%	
More than 30 EUR	2.9%	18.1%	25.9%	

* $p < 0.05$; ** $p < 0.01$

Source: Authors

With regard to the frequency of wine consumption, there were significant differences between the clusters. The majority of CC reported consuming wine occasionally (once a month or less) (36.8%), followed by those who rarely and extremely rarely consume wine (20.6%). WE differed in this respect, as they appeared to be mainly frequent (once a week or less) consumers (38.8%), as well as frequent (3-4 times a week) (35.3%). The

majority of respondents who were recommendation recipients stated that they drank wine frequently (38.8%) and occasionally (37.1%).

Statistically significant results were obtained with regard to the average price per bottle paid by respondents. CC mainly paid between 5 and 10 EUR (48.5%) and less than five EUR (30.9%). As expected, WE tended to pay higher prices for wine, 45.9% of them between 5 and 10 EUR and 41.2% of them between 10 and 20 EUR, while they bought almost no wines from the cheapest category. The majority of RR consumers (44.8%) chose the option between 5 and 10 EUR, while 37.9% chose the option of more expensive wines, between 10 and 20 EUR.

In terms of weekly consumption patterns, CC consumed wine mainly at weekends (64.7%). WE tended to consume wine on both weekdays and weekends (75.3%), more than the other two groups, although this was also the case for the majority of RR consumers (56.9%). The differences between the clusters were statistically significant. The differences in purchase occasions were also significant. CC tended to buy wine mainly as a gift (39.7%) and for special occasions such as celebrations (27.9%). They were less likely to buy wine to stock up for future consumption. As might be expected, wine lovers buy wine for different occasions - for immediate consumption, for consumption at home, for stockpiling for future consumption and for special occasions (around a fifth each) or for no occasion at all (30.6%). Respondents who responded to recommendations were most likely to buy wine for special occasions (27.6%).

The majority of respondents stated that they were satisfied with the wine selection and wine prices on the domestic market and no significant differences were found between the clusters. Significant differences were found between the groups in terms of the maximum price respondents would be willing to pay for a bottle of barrique wine. WE would be most willing to pay between EUR 10 and 20 (34.1%) and EUR 20 and 30 (36.5%), which is significantly higher than in the other two clusters.

Discussions

As wine is a highly complex product, gaining a deeper understanding of the key drivers of wine consumer preferences, attitudes and behaviour is a major challenge in the field of wine marketing (Wiedmann et al., 2014). In order to improve consumption in the Serbian market, it is necessary to recognise specific consumer segments with particular characteristics and develop specific marketing strategies to reach them. This study presents the results of the segmentation of wine consumers based on their knowledge, attitudes and behaviour towards wine.

The group of WE is characterised by the fact that it has the highest subjective knowledge of wine and tends to attend wine events. They are more selective about wine and consume wine on special occasions and at home. These consumers were mainly more educated, lived in the capital and in larger cities and lived mainly in couples with or without children. They had above-average purchasing power and mostly favoured white wine or both red and white wine. In addition to local wines, Wine enthusiasts

also appreciated wine from countries in the region (e.g. Croatia, Macedonia). They were frequent wine consumers, consuming wine both on weekdays and weekends, and were more likely to drink a higher number of glasses per consumption than the other two groups. They were likely to pay higher prices for wine and did not buy wines from the cheapest category. They bought wine for different occasions, with or without an occasion, and were willing to pay higher prices for a bottle of barrique wine than the other two groups. At EUR 50.65 per month, they spent significantly more on wine than the other two groups. Many other studies have identified consumer segments with similar characteristics. In the study by Kalazić et al. (2010), there were two segments with similar characteristics: prestige consumers with high purchasing power and a willingness to pay higher prices, and expert consumers who, in addition to high purchasing power, also frequently consumed wine, believed that drinking wine was healthy and enjoyed consumption. Similarly, the segment of affluent wine experts found by Hlédik and Harsányi (2019), as these consumers spent the highest amounts on a bottle of wine, enjoyed visiting wineries and attending wine events. Research conducted in China by Yabin and Lee (2020) discovered a segment of wine lovers whose members had a long history of wine drinking and considered wine to be a very important lifestyle segment. A segment in Geraghty and Thores' (2009) research entitled Wine Traditionalist, which includes consumers who value wine variety, classification and vintage and spend a significant average monthly amount on wine purchases, also exhibits similar characteristics to a certain extent. Hristov and Kuhar (2015) identified a cluster with high subjective knowledge of wine, which includes consumers with the longest experience of wine drinking, weekly consumption, who value vintage and wine variety more than other segments, and front and back label information. A similar segment was found by Brunner and Siegrist (2011) to be dedicated, knowledgeable wine consumers who had the highest income and were willing to pay more for the bottle than other segments, who saw wine as very important and as their hobby and therefore spent a lot of time learning about wine and attending wine seminars. In some ways, the segment of wine enthusiasts in this study resembles the segment of ritual-orientated, conspicuous wine lovers of Bruwer et al. (2002), who valued wine as a very important part of their lives, drank almost daily and on various occasions, exhibited «connoisseur» characteristics and paid the highest average prices per bottle. In addition, the group of conservative, knowledgeable wine drinkers (Bruwer & Li 2007; Bruwer & Li 2017) is a very similar group, characterised by frequent wine drinking, connoisseur characteristics and spending more money on a bottle of wine per month. Some characteristics are also similar to the mature, time-conscious wine drinker segment, who have a history of wine consumption, enjoy acquiring knowledge about wines, have connoisseur tendencies and tend to store wine at home for future use (Bruwer & Li 2007; Bruwer & Li 2017).

The group of consumers who respond to recommendations (RR) is in the middle of the field for all factors. These consumers attach importance to recommendations from others, the origin of the wine and information on the labels. These consumers were

mainly highly educated, lived in the capital and in smaller towns, were predominantly couples with child(ren) and had average purchasing power. They mostly favoured exclusively white or red wine from local production. Although they generally did not pay attention to the age of the wine, they chose “Reserva» more often than the other two groups. They consumed wine frequently and occasionally, on weekends and weekdays, one to two glasses per consumption. They mainly bought wines in the medium or higher price segment and mainly for special occasions. They spent EUR 26.46 per month on the purchase of wine. A similar consumer group called ordinary wine consumers was identified by Hlédik and Harsányi (2019), who represent the largest segment and spend an average amount on wine purchases. Although the group of consumers with low subjective knowledge about wine found in the study by Hristov and Kuhar (2015) shows certain differences (lowest knowledge, lowest frequency of consumption of all groups) and thus also resembles the group of casual consumers, it is similar to the group of recommendation-happy consumers in that it strongly favours personal sources of information and values expert recommendations as well as recommendations from family members and friends. Brunner and Siegrist (2011) distinguished the pleasure-oriented, sociable wine consumer, who sees wine as something to do with a nice atmosphere and socialising. However, as they are uncertain about their decisions, this consumer is the most likely of all segments to use recommendations and reviews when making a purchase. The survey results of Bo Liu et al. (2014) show a “traditional word-of-mouth» segment of Chinese wine consumers who most frequently sought product reviews and recommendations when purchasing.

The group of Casual wine consumers (CC) had the lowest values for all factors except “mood”, where they had the highest value. This means that the consumers belonging to this group have neither a high level of knowledge nor preferences regarding wine, but merely associate drinking wine with a certain mood. The group of modest consumers who were willing to pay the lowest price for a bottle of wine has some similarities with the segment of modest consumers of Kalazić et al. (2010). For them, the most common reasons for wine consumption were escape from problems, relaxation and feeling “cool”. In addition to consumers with higher education, the group of CC contained the highest percentage of consumers with secondary education. The consumers lived in the capital and in smaller towns, were predominantly couples with child(ren) or still lived with their parents/siblings and had average purchasing power. They expressed a higher preference for white wine and paid less attention to the origin and ageing of the wine. They consume wine mainly occasionally or rarely, at weekends and one to two glasses per consumption. They mainly buy wines from the cheapest categories and mainly as gifts or for special occasions such as celebrations. On average, they spent EUR 19.84 per month. In terms of the lowest expenditure on wine, this segment is similar to the segment of undemanding wine consumers in the study by Hlédik and Harsányi (2019). The Casual wine consumer of Geraghty and Thores (2009) was characterised by choosing wine according to less significant rather than more specific wine attributes and a more casual approach to wine consumption. Brunner and Siegrist (2011) identified

the indifferent wine consumer who does not have a strong preference for wine and does not really want to drink wine frequently unless they feel in the mood to drink it with a meal. Bruwer et al. (2002) identified pleasure-orientated, sociable wine drinkers who not only enjoy drinking wine on social occasions at the weekend, but also concentrate on consuming wine privately at home and relaxing in the process.

Given the fact that their wine-related preferences and behaviour differ significantly, all three groups require different communication strategies from wine producers and sellers to cater to their preferences and needs. As for the wine enthusiasts segment, the marketing strategy should include a multi-channel approach based on emphasising outstanding wine attributes. As these consumers like to drink wine on different occasions, the availability of wine through HoReCa channels, speciality shops and wine cellars is particularly important. The organisation of various wine events (fairs, seminars, wine tours and tastings) is also considered to be very effective. The availability of various information and promotional materials such as wine books, brochures and newsletters is also important, considering the knowledge about wine that these consumers want to acquire. Labels should contain information about the wine variety, wine style and vintage and be used as a communication channel. Personalised communication via e-mail, messaging and social media should also be included in the communication mix. The content of the communication should focus on the wine variety, traditional production and quality, while prices should not take centre stage.

In addition to communication through the media and advertising at the point of sale and consumption, which should also be included in the communication strategy for consumers ready to recommend, word of mouth and marketing should be the main means of reaching these consumers. Wine producers should invest in building online communities and monitor and respond to consumer comments. They should also invest in promoting positive reviews and better positioning on review portals. In advertising, they should engage spokespeople who are relevant to this target group, have credibility and are seen as suitable to make recommendations.

As for CC who do not particularly like wine and do not consider it important to their lifestyle, and who could be described as mood-dependent wine drinkers, emphasising emotions, special atmosphere and relaxation rather than wine characteristics seems to be the most effective strategy. As this consumer group is not willing to pay high prices for wine and has the lowest consumption, the frequent use of special offers and discounts could be effective in persuading these consumers to buy.

Conclusions

Considering that the wine sector in Serbia is in transition, market screening and identification of consumer profiles are crucial to set an appropriate direction for its improvement. This study provides valuable insights into the wine-related behaviour of Serbian consumers and the results could help in planning and developing appropriate marketing strategies and effective communication with different consumer segments.

This study has several limitations that should be considered. First, the use of a convenience sample recruited through professional networks may limit the representativeness of the findings, as the sample might not fully capture the diversity of Serbian wine consumers. Second, the reliance on self-reported data raises the possibility of social desirability or recall bias, especially regarding wine consumption and purchasing behavior. Third, the cross-sectional design provides only a snapshot in time, making it difficult to capture changes in consumer attitudes or behaviors. Finally, the study was conducted in one national context, which restricts the generalizability of the results to other wine-producing or wine-consuming countries.

Future studies could address these limitations by employing probability sampling techniques or larger, more diverse samples to enhance representativeness. A longitudinal design would allow for the examination of how psychographic and behavioral characteristics of wine consumers evolve over time. In addition, cross-cultural or comparative studies could provide valuable insights into similarities and differences in wine consumer segmentation across traditional and emerging wine markets.

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Conflict of interests

The authors declare no conflict of interest.

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