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INTERDISCIPLINARY APPROACH TO WINE PREFERENCES: CASE OF NORTH CROATIA

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ABSTRACT

The wine market in the world is well developed, and the countries at the very top of production are making great efforts to maintain their leading position. Traditional cultures and autochthonous sorts are especially valued, and many tourists are willing to pay well for this uniqueness and quality, which is why wine tourism has been developing more and more in the last 20 years. Thus, the consumption of wine is combined with the gastronomy, hospitality, viticulture and nature of an area and thus creates a certain harmony. This article aims to investigate the preferences of wine consumers in the area of North Croatia. Due to complexity of human behaviour, consumer preferences have an interdisciplinary dimension which must are considered in this article. Research results show the profile and preferences of wine consumers in North Croatia. Both of the research propositions are confirmed with the chi-square test. The article briefly presents the history and development of wine production, the main characteristics of wine consumers and wine consumption. It analyses the import and export of wine to the Croatian market. Also, the current state and trends of the wine market worldwide and in Croatia are described. Results are relevant for the providers of tourism services in North Croatia.

KEY WORDS

wine market analysis, wine consumers, wine preferences, North Croatia wine consumer preferences

CLASSIFICATION

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INTRODUCTION

Tourist demand is prone to various factors, among which innovation [1], community engagement [2] and quality of products and services [3] strongly impact the repeat visit [4]. The production and consumption of wine have a long history in almost all parts of the world, including Croatia. Regardless of the number of autochthonous and protected species, a large number of producers and self-sufficient stocks of wine, viticulture and winemaking in Croatia still strive for development and better recognition on the world market. Viticulture and winemaking are particularly popular and present in Europe. Still, the fact is that the number of vineyard areas in Europe has been gradually decreasing over the past few years. A big role in this is played by unfavourable weather and economic conditions and the price-quality ratio on the market, which is not always credible. Several state institutions monitor Viticulture in Croatia, and the production process is accompanied by law and legal acts. The Winegrower's Register is also important, in which all producers who produce certain quantities of wine must be registered. Wine distribution occurs through channels such as retail stores, restaurants and hotels, and door-to-door sales, but numerous wineries in Croatia provide the greatest experience and pleasure. Consumers and their attitudes are most important to manufacturers, as in all other industries. Consumer preferences can greatly influence the production, distribution and development of accompanying content related to wine consumption, such as the development of wine tourism. North Croatia is perceived as a rich viticulture and winemaking region where wine consumption is present in almost every household, and wine production for own needs is also often present.

This article aims to investigate the preferences of wine consumers in the area of North Croatia, especially their habits of buying and consuming wine. North Croatia is a well-known wine-production region of Croatia. Wine consumer preferences have been the research topic in many leading wine-producing regions and countries [5-7]. This article fills the void of such research for the region of North Croatia. Following this aim, the research questions formed in this article are

RQ$_1$: What is the profile of wine consumers in North Croatia?

RQ$_2$: What are the preferences of wine consumers in North Croatia?

Two research presumptions are stated:

RP$_1$: Age affects the frequency of wine consumption and

RP$_2$: Wine consumers in North Croatia prefer white wines.

Consumer behaviour has five interdisciplinary dimensions: economic, psychology, sociology, sociopsychology and cultural anthropology. This complexity of human behaviour forms preferences in a way that affects decision-making. Concepts and insights from different areas that impact preferences make way for an integral view of research results. The emphasis of the research is also on consumer preferences regarding wine characteristics. Following the footsteps of previous research [8-10], traditional wine attributes are explored. In addition, this article analyses the state and trends in the wine market. The wine market consists of producers on the supply side and consumers on the demand side. Therefore, the production and consumption of wine in Croatia and the world are presented in detail. Data for the empirical part of the work are collected through an online survey.

The article consists of four sections. A theoretical framework with an analysis of the wine market follows the introductory part. Empirical research is presented in the third section, and the article's main conclusions are presented in the fourth section.

WINE MARKET

Wine is an alcoholic beverage that has changed significantly throughout history and gradually developed its taste, quality and production process. Many well-known poets, philosophers, writers and rulers mentioned the numerous benefits and undesirable consequences of excessive wine consumption. It is often mentioned in old religious and historical books, which is why it can be concluded that wine production and consumption is one of humankind's oldest crafts. The following will present the current situation and trends in the wine market in the world and Croatia. Although it is open and subject to competition, it can be argued that it is outside the stronger influence of changes in the world market.

LEADING WINE PRODUCERS IN THE WORLD

Vine berries can be exploited in several ways, i.e. growing vines does not have to be intended only for wine production but can be sold as dried or fresh fruit. In this article, the focus is on the cultivation of vines for the production of wine. Table 1 shows how vineyard areas, production and consumption of wine, import and export of wine are distributed by continent, and the number of types of wine on each continent is also shown. In 2019, Europe had the largest number of areas under vineyards, with 3 702 167 hectares out of a total of 7 341 771 hectares in the world, followed by Asia, America, Africa and finally Australia with Oceania. Comparing the amounts of wine produced and the amount consumed, all continents except Asia can meet their needs for wine consumption with their production capacities. Nevertheless, America and Asia achieve a negative balance when observing the amount of exports and imports, while the other continents achieve greater exports than imports of wine. As for production, Europe also leads in the amount of wine consumption, which is 143 384 hectolitres out of the total 237 485 hectolitres at the world level, more than half of the world's wine consumption. Europe has the greatest variety of wine varieties with 4 050 types of wine, followed by Asia (1943), America (1399), Australia and Oceania (551) and Africa (167) [11].

Table 1. Production of wine by continent in 2019.

Continent /area	Vineyard surface, ha	Production of wine, 1000 hL	Wine sorts	Export, 1000 hL	Import, 1000 hL	Consumption, 1000 hL
Africa	366 755	11 197	167	4 749	3 743	7 976
America	1032 165	55 411	1399	16 817	19 589	55 353
Asia	2 055 379	12 854	1943	1397	11 351	23 932
Europe	3 702 167	163 287	4 050	74 233	70 517	143 384
Australia & Oceania	185 305	14 944	551	10 139	1528	6 840
World	7 341 771	257 693	8 100	107 335	106 728	237 485

Among the 10 largest wine producers in the world in 2021 (Table 2) are the following countries: Italy, Spain, France, USA, Australia, Chile, Argentina, South Africa, Germany, and China [12]. From the data in the table, it is evident that all countries except the Republic of South Africa had a drop in production in 2019 compared to 2018, which is also visible at the level of world wine production. The situation improved in 2020, where Spain (21 %) and France (11 %) had the biggest positive growth, while Argentina (–17 %) and China (–16 %) had the biggest decline. The fact that Italy, France and Spain produced 52 % of the total wine produced in the world in 2020 also speaks of the dominance of European countries in production. The situation changes again in 2021, when total production drops by 4 %, and the estimated production amount of 250,3 million hL is 7 % less than the average production of the last 20 years. The leading country in wine production remains Italy with a drop of -9,36 % and the biggest drop in production was France (–26,7 %), which is why it fell in the ranking, i.e. Spain managed to take 2nd place despite the drop of –14 % place in wine production. The decline in production in the leading European countries is attributed to unfavourable weather conditions, mostly frost during April and hail in the summer months. On the other hand, the southern hemisphere countries are recording a large growth in production, especially Australia and Chile, which, with a growth of about 30 %, looking at the year 2020, dropped Argentina from 5th to 7th place [13].

Table 2. 10 largest producers of wine in the world (source: OIV).

Country	Amount, million hL				change 2020-2021, %	total world production 2021, %
	2018.	2019.	2020.	2021.		
1. Italy	54,8	47,533	49,1	44,5	–9,36	17,78
2. Spain	44,9	33,676	40,7	35,0	–14	13,98
3. France	49,2	42,193	46,7	34,2	–26,7	13,66
4. USA	26,1	25,562	22,8	24,1	5,7	9,63
5. Australia	12,7	11,970	10,9	14,2	30,28	5,67
6. Chile	12,9	11,939	10,3	13,4	30,01	5,35
7. Argentina	14,5	13,019	10,8	12,5	15,74	4,99
8. South African Republic	9,5	9,705	10,4	10,6	–1,85	4,23
9. Germany	10,3	8,218	8,4	8,8	4,76	3,51
10. China	9,3	7,824	6,6	no data for 2021		
World	294	258	260	250,3	4 %	–

According to the analysis of the data in Tables 1 and 2, it can be concluded that the world wine market is very dynamic. The largest producers of wine are traditionally on the European continent, and trends in production largely depend on weather conditions in certain years.

WINE PRODUCTION IN CROATIA

The grapevine is an important crop for agriculture and the economy of Croatia. Vine-growing areas in Croatia are divided into zones, regions, subregions and vineyards. According to the Ordinance on geographical areas of grape growing [14], Croatia can be divided into 4 wine regions: Slavonia and Podunavlje, Hilly Croatia, Istria and Kvarner, and Dalmatia.

According to statistics maintained by the International Organization for Viticulture and Winery (OIV), the area of vineyards in Europe, including Croatia, is gradually decreasing every year. This trend is most affected by climate change, economic problems and global crises [15].

Wine production in the Republic of Croatia tends to improve quality, as evidenced by the fact that 60 % of the wine produced in Croatia is categorized as quality [16]. According to data from [17], 27.095 entities were registered, of which 25 840 are individuals, 564 crafts and 691 legal entities, producing wine on 18 126,36 hectares.

When talking about the largest producers of wine in the whole of Croatia, 10 producers stand out. The largest wine producers in Croatia are listed in Table 3. Most of the large producers come from the wine-growing regions of Slavonia and Podunavlje, and the largest wine producer in Croatia is Belje Plus d.o.o. with a total vineyard area of 613,59 hectares. Given that the 10 largest wine producers in Croatia occupy only 19,2 % of the total vineyard area, it

Table 3. Ten largest producers of wine in Croatia. Author's work according to Ceiling Celić and Rulebook on geographical areas of vine cultivation (NN 76/19, attachment 1.)

Company	Region	Surface under vineyards, ha	percentage of total vineyard surface, %
Belje Plus d.o.o.	Slavonija and Podunavlje	613,59	3,39
Agrolaguna d.d.	Istra and Kvarner	547,48	3,02
Kutjevo d.d.	Slavonija and Podunavlje	441,72	2,44
Erdutski vinogradi d.o.o.	Slavonija and Podunavlje	409,47	2,26
Iločki podrumi d.d.	Slavonija and Podunavlje	351,53	1,94
Badel 1862 d.d.	Slavonija and Podunavlje	330,15	1,82
Đakovačka vina d.d.	Slavonija and Podunavlje	248,97	1,37
Dalmacijavino Split d.o.o.	Dalmacija	190,91	1,05
PP Orahovica d.o.o.	Slavonija and Podunavlje	177,38	0,98
Osilovac d.o.o.	Slavonija and Podunavlje	168,94	0,93
Total		3 480,13	19,2

is evident that wine production does not depend only on a few large companies but on a large number of smaller producers [14, 17].

The most famous producers in North Croatia include Agromeđimurje d.d. from Čakovec, Varaždinka d.d. from Varaždin, Petrač d.o.o. from Krapinske Toplice, Bojan Štampar and Alojz Novak, and numerous producers from Štrigova [18].

Table 4 shows data on production, the area under vineyards and the number of entities in North Croatia. The total number of registered entities is 9 047, of which 8 789 are individuals, 145 crafts and 113 legal entities. Comparing the amount of land under vineyards and the number of entities, it is evident that the majority are small wine producers who do not have a large area at their disposal. This is supported by the fact that 33,39 % of all registered entities that produce only 10,14 % of wine in Croatia are located in North Croatia.

Table 4. Producers and vineyard surfaces in North Croatia. Author's work according to data from Winery Register for the year 2021

County/Area	Production, hL	Surface, ha	Number
Međimurje	19 781,05	485,80	422
Varaždin	7 634,36	422,09	1687
Krapinsko – zagorska	7 016,95	655,84	3 231
Koprivničko–križevačka	3 640,80	401,38	1 376
Zagrebačka	28 847,26	727,48	2 331
TOTAL	66 920,42	2 692,59	9 047
percentage of total RH	10,14 %	14,85 %	3,39 %

According to the data [12], quality wine (76,44 %) is mostly produced wine in Croatia, followed by premium wine (9,88 %), sorted wine without a protected designation of origin (PDO) (7,1 %), wine without PDO (6,33 %) and other wines (0,26 %). As for North Croatia, quality wine is produced the most (45,63 %), followed by sorted wine without PDO (28,93 %), wine without PDO (18,35 %), premium wine (6,32 %), other wines (0,77 %). Zagreb county produces the most wine, followed by Međimurje, Varaždin, Krapina and finally Koprivnica-Križevačka counties. Although Zagreb County produces the largest share of premium wines in North Croatia (40,81 %), other wines, quality wines and sorted wines are produced to a greater extent in this area. Regarding producing quality wines, Međimurje County stands out, where wines are marked as quality in 79,4 % of cases [19].

The leading sortes produced in Croatia are Graševina, Malvasia Istria and Plavac mali crni. The production of Graševina stands out in particular, amounting to 254 996,52 hL (41,43 % compared to other sortes in Croatia), followed by Plavac mali crni with 129 649,23 hL (21,07 %) and Istria Malvasia with 54 649,23 hL (8,79 %) [12]. In North Croatia, graševina, rajnski rizling, chardonnay, moslavac, škrlet, kraljevina, white and pinot gris are mostly produced [20]. From the above, it can be concluded that quality wines produced in Croatia can compete on the world market.

CONSUMPTION OF WINE

Wine consumers can be divided into several groups depending on their basic characteristics and reasons for consuming wine [21]: (i) Conservative wine connoisseurs and consumers; (ii) Wine consumers focused on the image of wine and eager for wine knowledge; (iii) Basic wine consumers; (iv) Experimental wine consumers with great wine knowledge; and (v) Social wine consumers focused on pleasure and entertainment.

When talking about the general consumption of alcohol, the highest consumers in Europe are the Czech Republic (14,3 L/pp), Latvia (13,2 L/pp), Moldova (12,9 L/pp), Germany (12,8 L/pp) and Lithuania (12,8 L/pp). Croatia is in 35th place with a consumption of 8,7 litres of alcohol per person, and neighbouring countries Montenegro, Slovenia, Hungary and Serbia are higher on the list. Interestingly, Italy is in 38th place with a consumption of 8 litres per person, even though it is the leading country in the world’s wine production [22].

According to data from Eurostat for 2019, 38,3 % of Croats did not consume alcohol in the last 12 months, which is quite a large percentage compared to the EU level (26,2 %), and only Serbia has a higher percentage (50,7 %) and Turkey (85,1 %). Croats mostly consume alcohol several times a month (21 %), followed by several times a week (17,9 %) and daily (10,2 %), while 12,6 % of Croats consume alcohol less than once a month [23].

World wine consumption in 2020 is estimated at 234 million hl, which represents a decrease of 3 % compared to 2019. It is also important to note that this is the lowest recorded level of wine consumption since 2002. Considering the crisis caused by COVID-19 in 2020, the wine sector did not have worse results than other sectors [12].

Regarding wine consumption, the countries with the highest wine consumption and those with the highest wine consumption per person differ. The largest quantities of wine are consumed in the USA, followed by France, Italy, Germany and the UK. On the other hand, Portugal has the highest consumption of wine per person, followed by Italy, France, Switzerland and Austria. According to data from the National Bureau of Statistics, in 2018, wine consumption in Croatia was 22 litres per person.

Table 5 lists the largest consumers of wine in the world in 2020.

Table 5. Ten largest wine consumers per person in the year 2020. Author's work according to OIV.

Wine production in a year		Wine production in a year per person	
Amount, hL	**Country**	**Amount, L/pp**	**Country**
33,0	USA	51,9	Portugal
24,7	France	46,6	Italy
24,5	Italy	46	France
19,8	Germany	35,7	Switzerland
13,3	UK	29,9	Austria
12,4	China	27,8	Australia
10,3	Russia	27,6	Argentina
9,6	Spain	27,5	Germany
9,4	Argentina	27	Sweden
5,7	Australia	24,2	Netherland

A few years ago, a decrease in the amount of wine consumed per household member was recorded, which does not necessarily indicate a decrease in wine preference, but is possibly a consequence of the economic crisis. According to the results of the Standardized European survey on alcohol carried out in 2015 as part of the EU Joint Action on Reducing Alcohol Related Harm – RARHA, it was determined that beer is consumed to a greater extent in Croatia (56 %) compared to wine (34 %) [24]. From a generational point of view, the largest consumers of wine are considered to be the so-called Baby Boomers (born from 1945 to 1964) and Generation Y (born from 1977 to 2000). One of the most important goals of Croatian winemaking is to win over younger consumers, given that these generations often reach for other alcoholic beverages such as beer and spirits [21].

Observing the foreign trade exchange of wine from 2017 to 2020, imports were much higher than exports, but imports and exports are decreasing yearly. The balance for all observed years is negative; for 2020, this loss amounted to € 14 792 902. In 2020, most wines were exported to Bosnia and Herzegovina, Germany, the United States of America, Serbia and the Netherlands. Total exports in 2020 provided earnings of € 12 574 332. The highest price per litre was achieved for export to the Netherlands, amounting to € 15,04/l. Most wine was imported from North Macedonia, France, Italy, Kosovo, Bosnia, and Herzegovina. The total import cost in 2020 was € 27 494 651. The highest price of imported wine per litre was also achieved in the exchange with the Netherlands and amounted to € 14,48/l [25].

It is necessary to point out that the common organization of the wine market of the European Union, to which the wine market of Croatia belongs, differs from other common market organizations by its complexity, as well as the fact that it includes not only price and market interventions, but also the control of grape production, wine production, oenological practices and procedures, rules related to the labelling and protection of wine as well as rules covering the path of grape and wine products on the market, from the producer to the final consumer. The diversity and wealth of ecological conditions ensure the possibility of growing many grape sorts in all wine-growing areas of the Republic of Croatia, which means market development and an increased number of competitors in the Croatian market.

WINE PREFERENCES ACCORDING TO THE OCCASION OF PURCHASE

Wine is an alcoholic drink, i.e. the product of incomplete or complete alcohol fermentation of fresh grapes or their juice. Namely, wine contains different concentrations of alcohol (from 9 to 15 vol %), and it also contains a certain number of mineral ingredients, mainly magnesium and sodium salts mostly bound to organic acids (tartaric acid), which are easily broken down in the body and which give wine alkaline properties [26]. Wine contains about 400 ingredients, but their nutritional value is quite low. Wine is also rich in group B vitamins, especially B2 and nicotinic acid B3, and the nutritional value of one litre of wine is 600-700 calories. Sweet wines can range up to 1400 calories. The eternal topic is the pairing of food and wine, which is discussed by wine connoisseurs, oenologists, sommeliers, food and wine lovers, that is, everyone who drinks wine. This extremely popular theme opens up various possibilities for cooperation between wineries and local restaurants, then wineries and local food producers (for example, pieces of bacon and/or sausage, hard cheese or mushrooms that go perfectly with wine). Also, this is an opportunity for tourism workers to organize and promote local original dishes and create a unique tourist gastro – oenological experience. Wine and food combine, offering a compelling combination of tastes and experiences and an important part of many people's lifestyles. Food and wine are often the main attractions at festivals and events, and on many other occasions, they are a necessary addition to entertainment or work. Food and wine lovers are the main drivers of trips where facilities offer food and wine. Food and wine lovers mostly tend to belong to such social worlds and seek experiences that shape and affirm their personal and social identity. In this context, events manifest inclusion in the social world, play multiple roles related to identity and offer benefits that are highly valued by "insiders". Some events can achieve "iconic" status in their appeal to special interest groups, rising above all others thanks to their uniqueness and symbolic value. Moreover, of course, many go to wine and food events for the simple pleasures of taste, fun and fellowship.

Teaching consumers and gradually creating a "wine culture" is desirable. This approach aims to move away from the consumption of wine as an alcoholic product and the criticism that we promote alcoholism. By learning and creating a wine culture in the consumption of wine, we expand the horizons of possible drinkers and those who enjoy a good drop. Like any other, true wine culture is acquired over time and mainly implies certain knowledge about the vine, wine production, and the classification of wine (by quality, colour, CO2 content, and sugar). It is also desirable knowledge about serving wine. Still, the most delicate element of wine culture is the pairing of wine and food.

When it comes to wine lovers or connoisseurs, wine consumers can be grouped into three basic profiles:

- wine expert who has extensive knowledge about wines and visits wineries to buy, taste and learn about wines,
- a wine lover who loves wines, has experience in tastings and is eager to deepen his knowledge,
- casual wine tourists or wine enthusiasts with a low to moderate interest in wine are motivated to visit the region for non-wine reasons, and wineries are seen as "just another attraction". He is satisfied with his basic wine knowledge.

Trends such as local and expert food tours, street food and markets, cooking classes, home cooking, and meal sharing are expected to remain highly influential in culinary tourism. Regions must embrace their culinary history and include gastronomy in their tourist offer. In particular, countries with a rich culinary tradition should focus on developing culinary tourism and incentivize local companies to invest in this tourism segment.

Today, it is widely recognized that it is no longer enough to sell a tourist product only with a quality offer; it is also necessary to encourage an unforgettable experience. For this strategy to be successful, the conditions must be enabled to deliver superior visitor-focused food and wine experiences through consistent improvement and innovation. To achieve this, it is important to understand the four components that almost every tourist experience can be divided into:

- the product, food and wine must be authentic and "match",
- the service must be at a high level,

- the story must be recognizable,
- the narration must have a unique character.

Major consumers of wine are the generation of millennials who expect wine to meet high ethical standards. Growth of disposable income, the maturing of the market for authentic products, which means more experienced wine consumers, and willingness to experiment translate into greater demand for wine experiences among older consumer groups. Especially among the millennial consumer generation, there is a great interest in experimenting with wines from different cultures. The survey results by [27] support the view that globalization and the subsequent cultural transition from the West to the East make wine consumers more open-minded about wine and more willing to try new, exotic products. Although traditional decision-making models can explain the behaviour of wine consumers' behaviour, wine consumers' behaviour has some specificities related to wine as a product of choice and its properties. Choosing a wine is a multifaceted decision that involves different behaviours [28]. It is a complex process involving many factors influencing wine consumers' choices [29-31]. Many models have been specifically developed to emphasize differences in behaviour in specific contexts and the influencing factors in this respect [32]. These models tend to explain wine choice behaviour from different perspectives, and in the next section, food choice models are introduced to explain the factors influencing the behaviour.

Article [33] was one of the first researchers to develop a model of consumer behaviour specifically for food consumption. The same model can be applied to the choice and selection of wine. This model divides the wine-buying decision process into four steps. The first stage is "need recognition" when consumers encounter discrepancies between their desired and actual existence. This condition can cause three different situations. The first situation is when the type of wine is no longer available. The second is when customers are not satisfied with the existing wine. The third is when there is a desire to experience a new product, a new wine, to stimulate their activation. The second stage is the search for information that is influenced by the previous experiences of the consumer's customers. The last stage is the evaluation of alternatives. Since there are many different wine products with different properties, colours, and dryness, which can meet consumers' expectations when choosing different alternatives, evaluation and purchase criteria arise.

This assessment is based on wine quality, price, brand/reputation, freshness and warranty, country of origin, and year of harvest. So, for example, gastronomic tourists who research the wine of the country where they are staying for the first time mostly do so in restaurants. By reading a wine list translated into their language, or often in English, they discover the specific wines and dishes of the country where they are staying. This reading is triggering and can be misleading: only knowledge of the local area and long-standing knowledge of wine tradition and culture can impart structural knowledge about wine and lay the foundations for true understanding. Knowledge is slowly built up by handling and enjoying the ingredients of wine. It is, therefore, a detour through fields, vineyards and grape picking, visiting markets and performing successive critical tests that lead to gastronomy. Each type of wine requires skills and cultural knowledge to take full advantage of it. For this to be possible, the tourist must be helped, advised and guided.

RESEARCH OF WINE CONSUMER PREFERENCES IN NORTHERN CROATIA

This section discusses the research questions, goals, and propositions that represent the basis for the research part of the work. The second part of the section presents the research results and limitations, as well as recommendations for further research.

RESEARCH METHODOLOGY

Figure 1 presents the summary of the methodology used in this research.

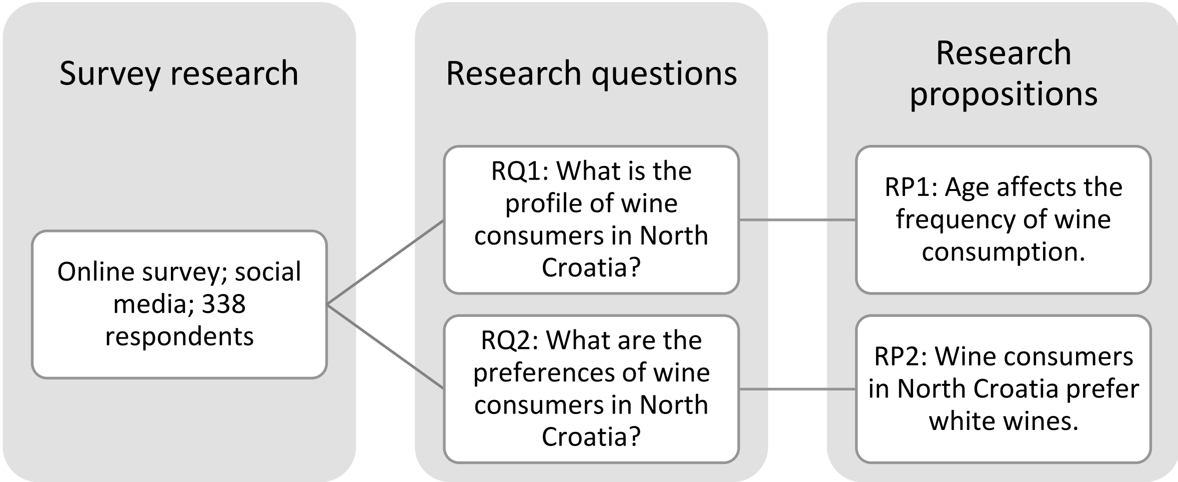

Figure 1. Research design.

The research part of the work includes processing and presenting the results of an online survey. The questions in the survey were compiled following the stated objectives of the research, based on a theoretical overview and previous research on this or a similar topic. The survey contains open and closed questions and consists of a total of 21 questions, of which 1 question is a filter question (separates people who do not consume wine from people who do; only one respondent was excluded from the study on that basis), 6 questions refer to the demographic characteristics of the respondents, and 14 questions refer to to the examination of consumer preferences and attitudes.

The target sample is adults living in North Croatia, which, according to the new statistical division of Croatia (National Classification of Statistical Regions 2021, NN 125/19, Article 3), includes the following 5 counties: Međimurje, Varaždin, Krapinsko-Zagorska, Koprivničko-Križevačka i Zagrebačka. The sample type is convenient, given that the survey questionnaire created via Google Forms was conducted via the author’s Facebook page and was published in several Facebook groups (Volim gemišt, Anketalica, Studentski dom Stjepan Radić – “Sava”). The research propositions were tested by performing the chi-square test [34].

RESULTS

In this section, the results of the survey conducted in the period from May 31, 2022, to June 13, 2022 will be presented. A total of 338 respondents participated in the survey. All respondents are over 18 years old, come from North Croatia and have tasted wine at least once. The respondents were grouped into people who consume wine and those who do not. The largest number of respondents (65,4 %) are between 18 and 30 years old, followed by 31 to 44 years (25,4), 45 to 60 years (8,3 %) and the fewest respondents (0,9 %) are 61 or older. The majority of respondents (68,6 %) are male. Most respondents come from Varaždin County (45,9 %), the least from Međimurje (7 %), and most of them, 69 %, live in rural areas. The majority of respondents have a secondary education (59,2 %), followed by a university education (39,6 %) and a basic education (1,2 %). The majority of respondents (70,1 %) are employed or self-employed, 27,2 % of respondents are pupils or students, and a smaller percentage are unemployed (1,2 %) and retired people (1,2 %). The data are presented in Table 6.

Table 6. Demographic attributes of respondents. Invalid answers are excluded from the table.

Variable	Modalities	No. of respondents	percentage, %
Age	18- 30	221	65,4
	31-44	86	25,4
	45-60	28	8,3
	61 or higher	3	0,9
Sex	Male	232	68,6
	Female	106	31,4
Urban/rural area	Rural	234	69,2
	Urban	104	30,8
County	Međimurje	24	7,1
	Varaždin	155	45,9
	Krapinsko-zagorska	38	11,2
	Koprivničko-križevačka	46	13,6
	Zagrebačka	75	22,2
Education	Elementary	4	1,2
	Middle	200	59,2
	Higher	134	39,6
Work status*	Employed or self-employed	237	70,1
	Unemployed	4	1,2
	Student	92	27,2
	Retired	4	1,2
Total		338	100 %

When examining wine consumption habits among various age cohorts, an interesting narrative unfolds in Figure 2. A significant majority of individuals from 18 to 30 report infrequent consumption of alcoholic beverages, often limited to a few occasions per year or on a monthly basis. However, in an almost equivalent proportion, still high number of individuals partake in the consumption of wine on many occasions during the week. Transitioning to the demographic encompassing those aged 31 to 44 years, a notable shift in the narrative becomes apparent. Most of these individuals derive enjoyment from consuming wine on multiple occasions during the week, while a smaller group distinguishes itself by partaking in wine consumption on an intermittent basis. As individuals go into the older age bracket, most partake in the consumption of wine on various occasions during the week. However, the number of everyday users is restricted to just five individuals.

According to this article's first research proposition, **RP$_1$**, the frequency of wine consumption depends on the consumer's age. The hypothesis will be tested with the chi-square test of independence. In this case, the chi-square test proves the interdependence of two variables, i.e., the frequency of wine consumption and the consumer's age.

The value of χ^2 is 15,148 and is greater than the theoretical value of 9,488 (with a significance level of 5 %), indicating the acceptance of **RP$_1$**: Age affects the frequency of wine consumption. The collected data indicate the conclusion that older individuals consume wine more often, which is in line with the features of wine consumer preferences described in the third section.

Table 7 presents wine consumer preferences. Results show that the most common reason for consuming wine in North Croatia is to enjoy the taste (39,1 %), followed by fun (30,4 %) and company (17,5 %). In contrast, other reasons, such as health, stress, work and boredom, are in a smaller ratio. Thus, the consumers of this area can be classified as social wine consumers focused on pleasure and entertainment.

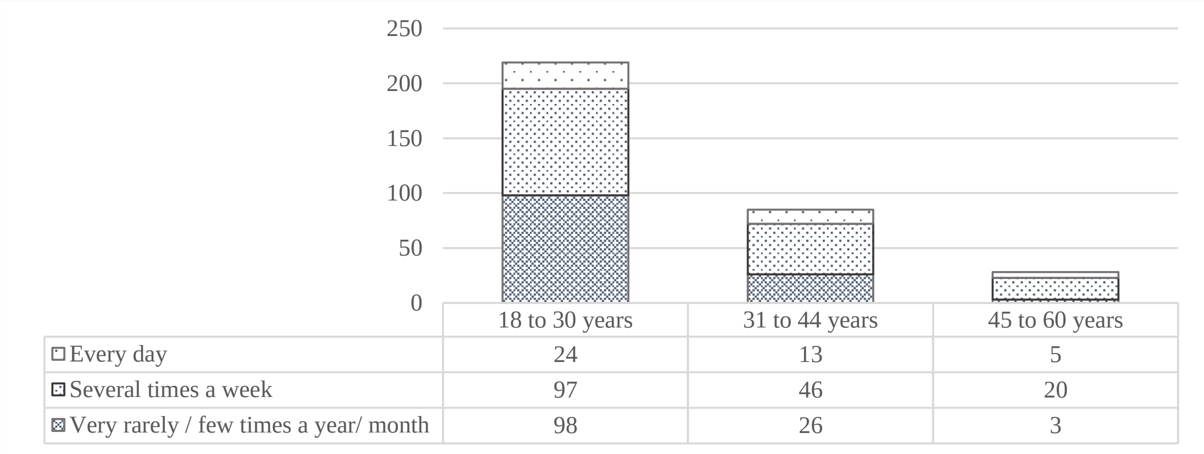

Figure 2. Relationship between age of respondents and frequency of wine consumption.

Table 7. Wine consumer preference.

Variable	Modalities	percentage, %
Reasons for wine consumption	Taste	39,1
	Fun	30,4
	Company	17,5
Place of consumption	Cottage/wine cellar	70,7
	Friends and family	66
	Home	65,1
	Caffe	49
	Restaurant	26,6
	Outdoor	23,6
	Work	8,7
	Elsewhere	1,5
Alcohol preference	Beer	75
	Spirits	21,1
	Beer and spirits	3,9
Domestic/foreign wine preference	Domestic	85,1
	Foreign	0,6
	Indifferent	14,3
Purchase	Production at home	45,7
	Store	18,8
	Friends and family	11,3
	Winery	11
	Family farm	6,7
	Restaurant	1,5
	Do not buy	4,5

The majority of respondents consume wine in a cottage or wine cellar (70,7 %), followed by consumption with friends and relatives (66 %), consumption at home (65,1 %), consumption in a cafe (49 %), consumption in a restaurant (26,6 %) and outdoor consumption (23,6 %). As many as 8,7 % of consumers consume wine at work, while 1,5 % consume wine elsewhere. Wine is the primary alcoholic beverage of 75 % of consumers, while the other 25 % prefer some other type of alcoholic beverage.

Consumers for whom wine is not their primary alcoholic beverage mostly prefer beer (75 %), followed by spirits (21,1 %), and 3,9 % of consumers prefer both beer and spirits more than wine. The majority of consumers prefer domestic wine (85,1 %). Only 0,6 % of consumers prefer foreign wine, while 14,3 % do not care about the origin of the wine.

A large part of consumers produces their wine (45,7 %), and the rest of consumers most often buy wine in a store (18,8 %), from friends or relatives (11,3 %), in a winery (11 %), at family farms (6,7 %) and in a restaurant (1,5 %). On the other hand, 4,5 % of consumers do not buy wine.

Interestingly, the largest % of respondents (24,2 %) do not buy wine and only drink it when someone offers it. This group potentially includes people who produce wine and, for this reason, do not buy wine, but on the other hand, it is evident that a certain number of wine producers also buy wine.

The following varieties are among the 10 most consumed sorts in North Croatia: Graševina, Muscat, Rhine Riesling, Green Sylvan, Sauvignon, White Pinot, Chardonnay, Cuvee and Noja. A large amount of mixed white wine is also consumed.

The percentage of preference for white wine (81,5 %) indicates that wine consumers in North Croatia prefer white wines, as stated by the hypothesis (Figure 3). The value of χ^2 is 557,45, which is significantly higher than the theoretical value of 7,815. Therefore, it can be concluded that there is a statistical feature of differences in wine colour preferences. This can be explained by the wine tradition of North Croatia, which was influenced by the stormy past, and white wine sorts traditionally predominate in vineyards. White wine is preferred by consumers in North Croatia due to its crisp taste and the fact that white wine "goes well" with traditional dishes such as turkey with bacon or blood sausage, as well as various side dishes from baked beans and potatoes, very spicy, to smoked or dried cheese. The minerality of white wines brings refreshment during the summer months. Among the characteristics of the wine (Table 8), the most important for consumers is the quality, the average importance of which is 4,1, followed by the wine sort with a rating of 3,4. At the same time, the producer (2,9), favourable price (2,8) and packaging (2,78) have approximately the same importance (Table 8).

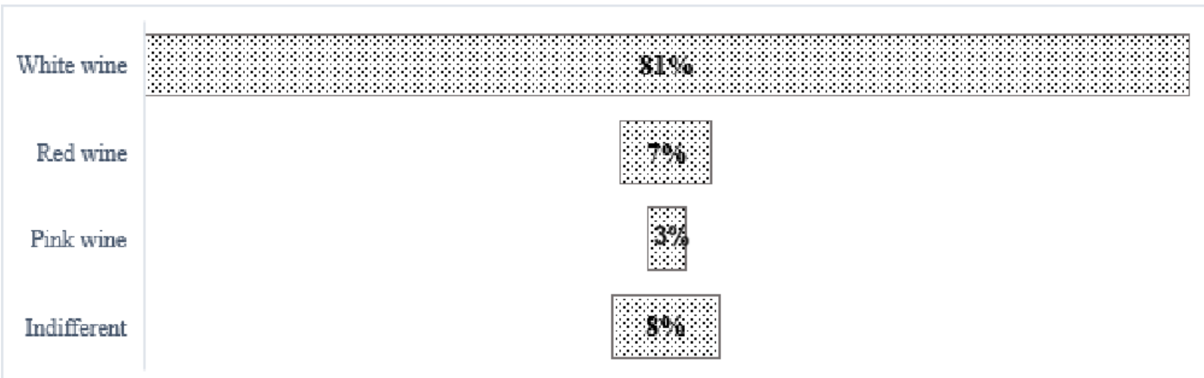

Figure 3. Preference of wine among respondents from North Croatia.

Table 8. Wine characteristics rating.

Variable	Modalities	Average rating (from 1 to 5)
Wine characteristics importance	Quality	4,1
	Sort	3,4
	Produces	2,9
	Price	2,8
	Packaging	2,78

Comparing the price and quality of wine, most consumers (70 %) believe that a higher price is not an indicator of better quality of wine. This can be confirmed by the fact that quality is the most important characteristic for consumers when buying wine, and they think they do not have to pay large sums of money to get that quality.

Following the previous analysis of preferences, some of the attitudes of wine consumers are presented in Table 9. Consumers rate themselves mostly as good wine connoisseurs (44,8 %) and very good wine connoisseurs (32,5 %). To a slightly lesser extent, they rate themselves as excellent wine connoisseurs (11,3 %) and poor wine connoisseurs (10,1 %), while only 1,2 % of consumers believe they do not know wine. Wine supply in the Croatian market is satisfactory for 42,1 % of consumers; 17,6 % are very satisfied, while 35,5 % are indifferent. Although they are satisfied with the range of wine sorts, most consumers believe Croatian wines are not promoted enough (61,2 %). Only 15,8 % of consumers think that wines are promoted enough, while 23 % of respondents do not know.

Table 9. Wine consumer attitudes.

Variable	Modalities	percentage, %
Knowledge of wine	Excellent	11,3
	Very good	32,5
	Good	44,8
	Poor	10,1
	No knowledge	1,2
Wine supply satisfaction	Very satisfied	42,1
	Satisfied	17,6
	Indifferent	35,5
	Not satisfied	3,6
	Not at all satisfied	1,2
Wine promotion	Enough	15,8
	Do not know	23,0
	Not enough	61,2

DISCUSSION

It is a positive fact that in 2021, 76,44 % of the wine produced in Croatia is categorized as high-quality, which provides a good basis for further development. Considering the ratio of physical entities and legal entities among wine producers, it is evident that wine production in Croatia rests on smaller producers who mostly operate locally. This is why the wine market in Croatia is quite diverse regarding indigenous wine varieties and producers, depending on which part of Croatia it is. Interestingly, 33,39 % of all registered entities are located in North Croatia, but they produce only 10,14 % of wine in Croatia. Croatia produces self-sufficient amounts of wine, but the wine balance is negative, which makes us aware that it is necessary to go to foreign markets to a greater extent. The highest price for a litre of wine is achieved in exchange with the Netherlands, where Croats sell wine for €15,04 and buy wine for €14,48. On the other hand, the price of an average bottle of wine in Croatia is around €5, which, compared to neighbouring countries, is the average price of wine for this climate.

Two research questions were set in this article: What is the profile of wine consumers in North Croatia? What are the preferences of wine consumers in North Croatia? By studying the profile and the preferences of wine consumers in North Croatia, it is evident that wine is consumed for social reasons, leisure and entertainment, most often with friends or family in their own home or cottage. The frequency of wine consumption varies between once a week and once a month, and a statistical test established the connection between the frequency of consumption and the consumer's age, where younger people consume wine less often than older people. Wine is the primary alcoholic drink for 75 % of consumers, and the most common substitute for wine is beer. Quality is valued most in wine, while wine packaging is least valued. As much as 85 % of consumers prefer domestic wines. An equal number of consumers buy wines in the lower and higher price groups, with many not buying wine because they produce it. Other forms of wine distribution, such as in-store purchases, door-to-door sales, and wineries, are the most common. Most respondents are satisfied with the offer of wine on the Croatian market and believe that quality wines do not necessarily have to be expensive. Still, they also believe that Croatian wines are not promoted enough. In addition to the research questions, two research propositions were formed: **RP_1** – Age affects the frequency of wine consumption, and **RP_2** – Wine consumers in North Croatia prefer white wines. The research confirmed both research propositions.

CONCLUSION

SUMMARY OF RESEARCH

Consuming wine is not only for fun and relaxation; it is an essential part of the economy and part of a culture maintained for several thousand years. It is believed that wine production originated in Mesopotamia and that traders brought the culture of producing vines to the rest of the world. The entire process of wine production and consumption has changed significantly throughout history regarding the development of new technologies and agricultural procedures, which only contributed to the spread of this culture and the development of new varieties. Numerous types and varieties of wine provide a wide range of products that can satisfy the basic needs of the most demanding consumers. It is known that certain wines are more appreciated through the ageing process, which can also be applied to consumers who, upon reaching maturity, begin to appreciate the quality and variety of wines more. Traditional viticulture, developed in a certain area for many years, is especially appreciated, like the viticulture of many European countries. Italy, Spain and France are the world's leading wine producers. Viticulture as an agricultural activity depends significantly on weather conditions and economic crises, which is why, in the last few years, there has been a decrease in wine production. There is also a legal framework that, through various ministries, agencies and institutions, provides certain quality control, records on the status of imports and exports and wine stocks, determination of average prices and many other control functions. Of particular note is the vineyard register, which gathers information on wine production in Croatia.

This article aimed to examine wine consumers' preferences in North Croatia. Consumer preferences are influenced by various factors, including economic, psychological, sociological and cultural, that need to be addressed. Thus, an interdisciplinary approach was used in forming this research. The research results indicate that wine consumers in North Croatia are middle-aged or older and prefer white wines. Consumers prefer domestic wines, and the most important characteristic is the quality of the wine, while consumption is most often in one's own home or cottage. Knowledge of consumer preferences is the foundation for successful marketing activities essential to entering and maintaining the market. There are also some specific features of wine marketing, given that it is an alcoholic drink whose excessive consumption can lead to serious side effects. Therefore, it is sometimes difficult to choose the right way of communicating with consumers and creating appropriate and attractive advertising. The promotion of wine is hampered by the legal framework that strictly dictates that wine must not be associated with sociological successes and must not be presented as a positive solution to personal problems. Nevertheless, the wine industry finds other ways to promote wines and their producers through various wine manifestations, fairs and numerous exhibitions, where producers get direct promotion. Such manifestations mostly occur locally, where smaller producers who have ambitions to expand the market can also participate.

The interest and need for wine tourism certainly exist. Visits to wineries and wine events should be adapted to today's busy life. Sometimes, consumers do not have the opportunity to set aside a whole day for a tour of the wine roads. Still, they will be happy to make time for an evening trip to a nearby winery or an event that offers them the perfect combination of gastronomy and oenology. Croatia is a diverse country, and each area can offer something unique and indigenous. Therefore, it is necessary to create content that faithfully and briefly shows a certain area's tradition and culture of winemaking and viticulture while combining it with gastronomy and catering, which will further attract tourists. It is important to create a positive atmosphere and make it known that enjoying wine does not have to be expensive and inaccessible. Wine tasting is not intended only for top connoisseurs; communication with them can create a broader picture and greater wine knowledge.

RESEARCH LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

It is worth pointing out a possible limitation of this research. One limitation is using a convenience sample that is potentially not representative of the area. This primarily refers to the age group and county of the respondents, i.e. the largest number of respondents are in the age group of 18 to 30 years, and most of the respondents are from Varaždin County. Certain parts of the wine market have not been researched at the national level, such as the attendance of Croatian wineries, which can be a suggestion for further research to create a better quality tourist offer.

Based on the research results, future research propositions emerged, which take into account that tourism is a system that needs management practices forming a system, e.g. between food and wine consumption [35]. In a world where tradition seamlessly intertwines with innovation, the age-old practice of wine consumption offers many untapped opportunities. The culture and economy surrounding wine have proven resilient, surviving and adapting through thousands of years of changing landscapes, technologies, and tastes.

As our research has shown, the evolution of wine production has always been closely linked to technological advances and improved agricultural procedures. This suggests that modern viticulture can benefit significantly from adopting innovative agricultural technologies, possibly leveraging advancements like precision agriculture, drones for vineyard health assessment, or even AI-driven predictive analytics to optimize grape yield and quality.

Given the breadth and variety of wines available, there is an immense potential for creating tailored consumer experiences. Augmented reality is a tool becoming prevalent in several business sectors; tourism is one of them [36]. Imagine augmented reality wine labels that narrate the rich history of the vineyard or smartphone applications that provide real-time sommelier advice based on individual taste profiles. Such innovations could amplify the appreciation of wine, especially for the more mature consumer demographic that has grown to value the nuances of different wine varieties. Europe's traditional vineyards, such as North Croatia, could embrace such innovations as a marketing tool and a means to preserve their rich heritage. By digitizing centuries-old viticulture techniques and stories, they can be preserved for future generations, ensuring the continuity of knowledge and practices and making them suitable for easy sharing over social media [37, 38].

However, the challenges posed by unpredictable weather patterns and economic fluctuations cannot be ignored. Herein lies an opportunity for innovations in sustainable viticulture. Techniques like drought-resistant grape cultivation or environmentally controlled indoor vineyards might be the answer to ensuring consistent wine production, even in adverse conditions. In the case of pandemics, various innovations, such as private dining restaurants, were invented [39], which still can have relevance in nowadays post-pandemic world.

Lastly, with the importance of legal frameworks and institutions such as Croatia's vineyard register, there is room for digital transformation. Blockchain technology [40], for instance, could ensure the traceability and authenticity of every wine bottle, providing consumers with assurance about the product's origin and quality.

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