



Current status of the Romanian wine producing industry and consumer preferences for wine in the European context

^[1] IANCU Tiberiu, ^[2] GORDAN Marius-Ionuț, ^[3] PETI Ioan, ^[4] IMBREA Florinel, ^[5] BĂTRÎNA Ștefan Laurențiu

^{[1],[2]} Faculty of Management and Rural Tourism, University of Life Sciences "King Mihai I" from Timișoara,

^[3] Faculty of Bioengineering of Animal Resources, University of Life Sciences "King Mihai I" from Timișoara,

^{[4],[5]} Faculty of Agriculture, University of Life Sciences "King Mihai I" from Timișoara

^[1] tiberiuanicu@usab-tm.ro, ^[2] mariusgordan@usab-tm.ro, ^[3] ioanpet@usab-tm.ro, ^[4] florin_imbrea@usab-tm.ro, ^[5] stefan.batrina@usab-tm.ro

Abstract

The key features of the Romanian wine industry analyzed in the present research paper include holding size, total production, and yield of vineyards in Romania, which were compared to other countries in the EU. Of note in this regard is the discrepancy between the values reported for PDO (Protected Designation of Origin), PGI (Protected Geographical Indication) and other types of grapes. Romania was ranked as the third largest producer of non-PDO/PGI grapes while for PDO and PGI it was ranked significantly lower. Romanian vineyards also tend to be smaller in comparison with other EU countries, possibly leading to reduced economies of scale. Romania was the fifth biggest producer of table wine in EU in 2020. The trade balance sheet of wine in Romania is heavily skewed towards imports, reporting a trade deficit of 39.5 million Euros (2020) and 58.8 million Euros (2021). The ten largest wine producers in Romania were analyzed by revenue and profit margin. The leading winery in 2020 was Cramele Receaș, located in the western part of the country. In terms of wine consumption, Romania is similar with neighboring countries, at 3.38 liters of pure alcohol per capita in 2019. Red dry or semi-dry wines are preferred.

Index Terms—wine production in Romania, wine market, wine consumption in Romania

I. INTRODUCTION

The development of the Romanian wine market is of interest due to the multiple economic and cultural activities that interact with and depend on it (e.g., wine tourism [1], culinary usage of wine [2], religious and cultural significance of wine [3], health effects [4]).

One of the key factors that drives the wine industry is consumer demand. The global wine market is worth billions of dollars, and consumers in countries around the world continue to purchase and consume wine in increasing numbers. This demand is driven by a variety of factors, including population growth, urbanization, and rising disposable incomes [5].

As such, the production of wine is an activity that generates interest for consumers, who are keen to experience and understand more about it through wine tourism. This is an important factor towards income diversification for vineyards and wineries [6].

Wine production can create jobs in a variety of sectors, including grape growing, winemaking, marketing, and distribution. Additionally, the wine industry can support jobs in related industries such as tourism, transportation, and packaging [7].

Furthermore, the wine producing industry is heavily linked with viticulture, with the later generating grapes, the main inputs required for producing wine [8]. Another sector that plays a significant role in the winemaking industry is linked with the production of food preservatives, as the usage of sulfur dioxide is a widespread and long held procedure for ensuring the prolonged shelf stability of wines [9].

Culinary uses of wine include both effective utilization in recipes, as well as pairing recommendations [10]. At the same time, some studies have shown that moderate wine consumption can have beneficial effects on heart health, and this has led to an increase in the number of people who view wine as a healthy option [11].

Wines is a product characterized by high differentiation: subtle differences in flavor, taste, after-taste, color can greatly affect the desirability of a type of wine [12]. Another important factor influencing the desirability of wines is the geographical area in which the vineyard from which grapes were sourced is located, minor differences in placement, soil chemical composition, microclimate can have a significant impact on the final product [13]. Wines produced from grapes grown in a specific geographical area are designated as wines with Protected Designation of Origin (PDO) and

wines with Protected Geographical Indication (PGI) [14].

The wine industry is also heavily influenced by trends in production and distribution. Most of the world's wine is produced in Europe, with France, Italy, and Spain being the largest producers [15]. Increasing global competition has led to a focus on quality and innovation, with many wineries investing in new technologies and techniques to improve their products [16].

Consumers are also prone to developing their own preferences, as their main aims differ, as does the social context in which wine is consumed [17].

Social factors also play a role in driving wine consumption. Wine has traditionally been associated with celebrations and special occasions, and this association has only grown stronger in recent years. As people become more interested in hosting dinner parties and other social events, they are more likely to serve wine as part of the occasion. Additionally, wine tasting, and wine-related events have become increasingly popular, further fueling interest in wine [18].

Advances in transportation and storage have made it possible to transport and store wine more easily, which has led to the expansion of the wine industry and the availability of a wider variety of wines to consumers. Additionally, the advent of social media and other digital platforms has also made it easier for consumers to learn about different wines and make informed purchasing decisions [19].

This information can be used by businesses to make informed decisions about product development, pricing, and marketing strategies, as well as by investors to identify potential opportunities in the industry [20].

II. METHODS

Reviewing the academic literature on wine production provides a general understanding of the current state of knowledge on the topic of wine production and distribution, including recent research findings, theories, and methods. As such, this is among the first steps taken in the present research paper. The literature review can provide a theoretical framework for understanding the wine market, which can guide the research and help to make sense of the findings.

The main findings of this paper are derived from international statistical databases, such as Eurostat or Statista. Collected data is then analyzed using statistical methods to identify patterns and trends in the wine industry. This includes analysis of production data, consumer surveys, and market data.

The main topics studied are holding size and grape production of vineyards, wine production, the trade balance generated by wine, the biggest wine producers in the country, their economic performances and geographical distribution, the average alcohol and wine consumption in Romania and other countries, as well as consumer preferences.

We consider these factors to be significant because:

- The size of the vineyard can impact the vineyard management practices. For example, smaller vineyards may be more labor-intensive and require more manual work, while larger vineyards may use

more mechanization and automation [21]

- Vineyard size can also affect the costs of production and, ultimately, the pricing of the wines. Smaller vineyards may have higher costs per unit of production, while larger vineyards may benefit from economies of scale and have lower costs per unit of production.

- The impact of wine import and export on the trade balance can be significant, depending on the country's level of production, consumption and net import or export.

- The geographical placement and economic performance of wineries can have a significant impact on the style and quality of the wine produced. Each wine region has its own unique characteristics, such as climate, soil, and topography, that affect the grapes grown and the resulting wine. By studying the geographical placement of wineries, it is possible to understand how these factors influence the final product.

- The geographical placement of wineries can also affect the costs of production and, ultimately, the pricing of the wines. For example, wineries located in remote or difficult-to-access areas may have higher transportation costs and higher labor costs, which can affect pricing.

- Research on alcohol and wine consumption provides insight into consumer behavior and preferences, such as which types of wine and alcohol are most popular, how often and under what circumstances people consume wine, and how consumption patterns vary across different demographic groups.

III. RESULTS

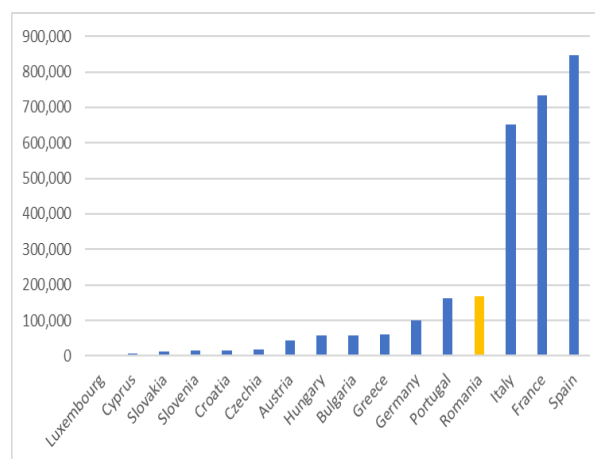


Fig. 1: Total area of vineyards (2020)

While it is significantly lagging behind the top three producers of grapes and wines in the European Union, Romania occupies the fourth place in the ranking of countries by the total area dedicated to the vineyards (figure 1). Romania's vineyards area is significantly smaller than Italy, Spain and France, which are among the largest wine producing countries in the world [22].

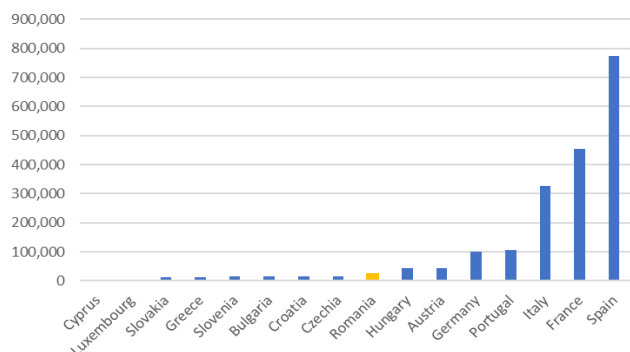


Fig.2: Total area of vineyards producing grapes for PDO wines in 2020 (hectares)

In terms of the land area devoted to the production of grapes for Protected Designation of Origins wines, Romania is severely disadvantaged, occupying the eight place in the European ranking (figure 2). As such, Romania does not benefit from the marketing and pricing benefits that such a designation can offer. PDO certification guarantees that a product, in this case wine, is produced, processed, and prepared in a specific geographical area using traditional methods. This designation is meant to protect the reputation of a specific region's wines and to promote the unique characteristics that are specific to that region. PDO certification can be seen as a mark of quality and can help consumers identify and purchase wines that are authentic and true to their origin. Additionally, it helps to protect the small local wineries and farmers and the traditional methods of production. This certification is otherwise useful for companies because it helps to differentiate their wines from others on the market and can command a higher price due to the perception of quality and authenticity associated with the designation. Additionally, PDO certification can also provide a sense of pride and identity for the wine producers and the region [23].

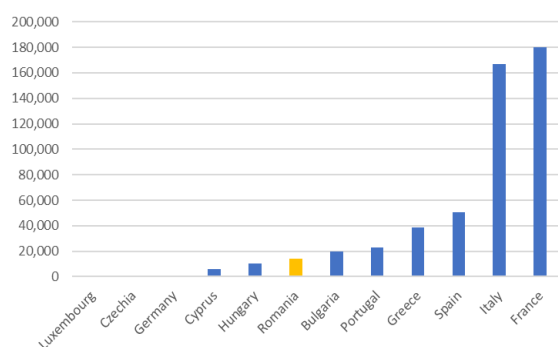


Fig. 3: Total area of vineyards producing grapes for PGI wines in 2020 (hectares)

The same situation becomes apparent for PGI wines, where Romania is among the last countries in the ranking (figure 3). PGI certification helps to promote and protect the specific characteristics of the wine that are unique to that region, which can help to build a reputation and attract tourists to the area.

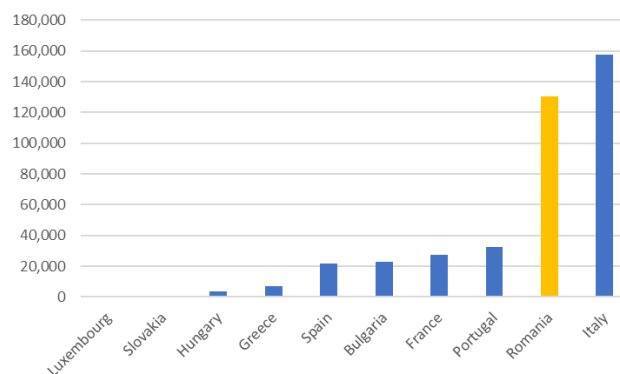


Fig. 4: Total area of vineyards producing grapes for wines with neither PDO nor PGI in 2020 (hectares)

Romania recovers lost ground in terms of the land area used to grow grapes that do not have PDO nor PGI labeling (figure 4). This underlines big discrepancy between the accessibility of said labels between European countries. Romania joined the EU during the Sixth Enlargement wave, as opposed to France or Italy, which are founding members of the European Coal and Steel Community, a precursor of the European Union and a economical and political framework that paved the way towards European integration and by extension the aforementioned labeling; or Spain, which joined the European Economic Community in 1986. Further efforts need to be undertaken by Romanian producers in order to register their products and to benefit from such labels, both from marketing and possible investments.

As such, we consider that Romania's wine industry is still relatively new to the EU and the process of obtaining PGI and PDO certification can be long and complex. Many Romanian wineries may not have the resources or the knowledge to navigate the certification process.

Other factors include relative economic instability in the past years and a possible lack of interest of major wine producers in obtaining such certification, as their notoriety has long since been established.

Table 1: Holding areas in European countries by holding size (% of country total)

No.	Country	Less than 0.49 ha	0.50 to 2.9 ha	3 to 9.9 ha	10 ha or over
1.	Romania	49.69%	14.78%	4.16%	31.36%
2.	Spain	4.85%	13.01%	21.40%	60.74%
3.	Italy	4.70%	18.50%	27.18%	49.62%
4.	Greece	30.98%	45.86%	17.90%	5.26%
5.	Slovenia	22.41%	26.21%	24.48%	26.91%
6.	Portugal	7.21%	24.13%	20.28%	48.37%
7.	Bulgaria	8.31%	14.99%	10.65%	66.04%
8.	Croatia	21.03%	28.44%	15.03%	35.51%
9.	Czechia	10.28%	8.29%	11.68%	69.74%
10.	Germany	3.31%	10.74%	25.60%	60.35%
11.	France	0.39%	3.52%	13.28%	82.81%
12.	Cyprus	25.96%	60.24%	10.13%	3.66%
13.	Hungary	5.18%	16.70%	26.36%	51.76%
14.	Austria	2.17%	11.97%	32.89%	52.97%
15.	Luxembourg	1.31%	8.19%	36.32%	54.17%
16.	Slovakia	4.86%	4.01%	7.32%	83.81%

Romanian vineyards tend to be relatively small in comparison with all of the other studied European countries (table 2). As such, nearly half of the vineyard holdings are less than 0.49 hectares in size. As states in the methods section, this is of interest because this fragmentation can lead to reduced economies of scale and might require more labor-intensive work done [24]. There are some advantages to this situation, as smaller holdings can preserve traditional ways of wine production, which can be explored by tourists interested in wine tourism.

Romania is singular in this situation, as the other countries are dominated by medium or large vineyards, or the percentages are more evenly distributed.

Table 2: Grape production for wines (1000t)

No.	Country	2019	2020	2021
1.	Italy	6,853.75	7,153.98	7,106.13
2.	Spain	5,430.31	6,529.22	5,778.53
3.	France	5,442.46	5,836.64	5,035.48
4.	Germany	1,125.00	1,149.54	1,151.47
5.	Romania	918.27	880.31	953.35
6.	Portugal	846.51	835.54	958.06
7.	Greece	435.47	442.83	468.17
8.	Hungary	445.46	422.58	429.89
9.	Austria	309.92	319.79	328.04
10.	Bulgaria	164.88	146.31	164.91
11.	Serbia	130.10	127.40	126.36
12.	Croatia	106.74	121.08	115.10
13.	Switzerland	122.43	104.28	76.13
14.	Slovenia	105.04	103.64	84.16
15.	Albania	96.80	100.90	109.10
16.	Czechia	67.96	90.38	90.06
17.	Slovakia	42.69	46.25	43.68
18.	Kosovo	14.80	20.05	19.09
19.	Cyprus	18.98	19.65	18.74
20.	Montenegro	19.52	19.14	20.22
21.	Luxembourg	10.11	12.88	13.26
22.	Malta	3.05	2.72	2.48

Romania was ranked fifth by production of grapes for wine in the studied countries in 2019 and 2020 but was surpassed by Portugal in 2021 (table 2) [25]. Bigger holding size and consequently higher concentration of production can be a factor that led to this.

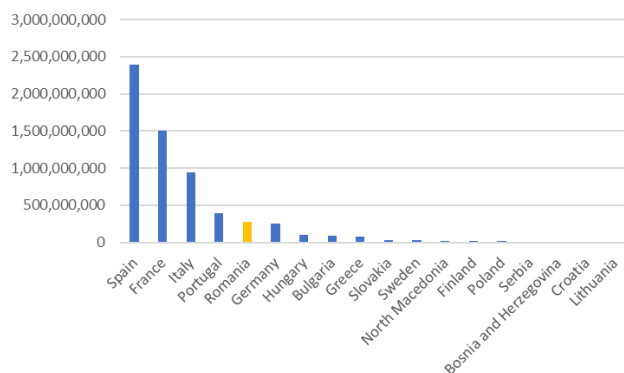


Fig 5: Total production of table wines in 2020 (liters)

As seen in fig. 5, Romania was the fifth largest producer of

table wines in 2020 [26]. While Portugal had a much lower area devoted to grape production, they managed to produce more wine. Nevertheless, Portugal had values similar with Romania in term of the production quantity of grapes.

Table 3: Import, export and trade balance of studied European countries (Euros)

Country	Imports	Exports	Balance
France	576,632,679	5,773,533,761	5,196,901,082
Italy	109,172,832	4,290,177,934	4,181,005,102
Spain	81,394,718	2,148,010,870	2,066,616,152
Portugal	130,083,881	521,880,127	391,796,246
Hungary	8,542,793	94,773,937	86,231,144
Austria	109,749,303	184,078,945	74,329,642
Greece	13,896,230	62,951,775	49,055,545
Bulgaria	14,489,864	27,840,556	13,350,692
Slovenia	7,235,018	14,250,593	7,015,575
Latvia	183,410,724	177,953,561	-5,457,163
Croatia	20,808,233	10,844,079	-9,964,154
Malta	14,418,265	329,510	-14,088,755
Cyprus	14,927,802	687,113	-14,240,689
Slovakia	49,065,021	19,132,039	-29,932,982
Estonia	41,769,982	9,602,188	-32,167,794
Lithuania	169,676,881	133,534,503	-36,142,378
Romania	61,289,723	21,787,291	-39,502,432
Luxemburg	76,292,588	10,436,868	-65,855,720
Finland	163,393,036	17,682,930	-145,710,106
Czechia	179,977,837	31,775,985	-148,201,852
Poland	257,778,362	28,538,487	-229,239,875
Ireland	286,102,720	9,545,544	-276,557,176
Denmark	576,880,825	148,045,001	-428,835,824
Belgium	685,173,933	122,484,167	-562,689,766
Sweden	581,595,092	16,666,037	-564,929,055
Netherlands	1,081,772,744	291,496,896	-790,275,848
Germany	2,110,023,726	799,928,402	-1,310,095,324

As evidenced in table 3, Romania is a net importer of wines, even if it is a relatively strong producer. A country might import wines for a variety of reasons, including to increase the variety of types and brands available to consumers, to meet demand for specific types of wines that are not produced domestically, or to take advantage of lower production costs in other countries.

Tourists from other countries may prefer wines from their home country and importing those wines can help to cater to those tourists and make them feel more at home.

Furthermore, by importing wines, a country can gain knowledge and expertise about different types of wines, which can then be used to improve the quality and marketability of domestic wines for export.

However, if domestic wine producers are unable to compete with imported wines, it may lead to closures or downsizing of domestic wine production facilities, resulting in job losses for those who work in the wine industry.

Romania has a rich history and culture of wine making and importing wines can lead to a decline in the production of traditional Romanian wines, potentially resulting in the loss

of cultural heritage.

The trade deficit rose in 2021 to 58,8 million Euros, as imports rose much quicker than exports.

Table 4: Top 10 wineries in Romania by revenue.

No.	Name	Revenue (RON)	Profit (RON)	Employees
1.	Cramele Recaş	251.5 mil.	73.4 mil.	116
2.	Zarea	146 mil	17.3 mil	201
3.	Crama Ceptura	145.6 mil	23.7 mil	122
4.	Beciul Domnesc	95.4 mil	4,8 mil	387
5.	Domeniile Viticole Tohani	36.8 mil	2.2 mil	49
6.	Domeniile Alexandrion Rhein 1892	28.3 mil	-5,4 mil	95
7.	Carl Reh Winery	26.7 mil	-2 mil	108
8.	Viti Pomicula Sâmburești	25.2 mil	1.6 mil	75
9.	Casa de Vinuri Cotnari	23.0 mil	6.4 mil	17
10.	Vinexport	23.0 mil	-2.9 mil	131

The top 10 wine producers in Romania are seen in table 4, with revenues and profits for the 2021 year, according to the Ministry of Finances [27].

Cramele Recas is a winery located in the Banat region of Romania, which is known for producing high-quality wines from a variety of grape varieties. The winery was founded in 1991 and has since grown to become the largest and most successful winery in Romania. They have a wide range of wines, including whites, reds, and sparkling wines, as well as a variety of specialty wines such as dessert wines and fortified wines. They also offer tours and tastings of their wines for visitors [28]. Their revenue and profit are by far the largest among the wineries

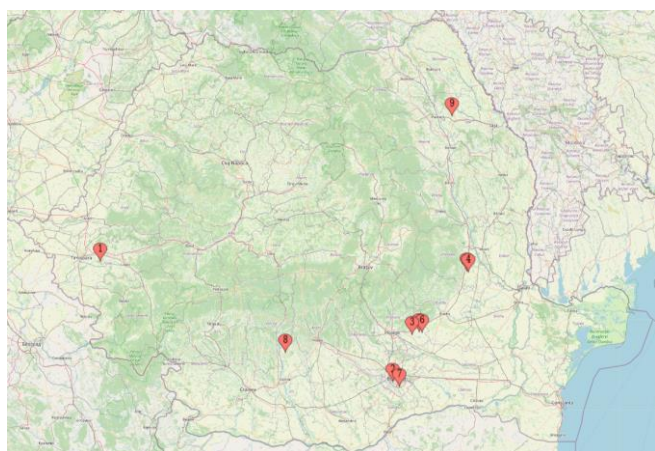


Figure 6: Spatial distribution of top 10 Romanian wineries

The spatial distribution of the top 10 wineries in Romania is heavily concentrated in the Prahova County, in the South development region, with 3 wineries within several kilometers of each other. Other regions with significant

clustering are București, the country capital and Focșani, Vrancea County. Otherwise, the other wineries are distributed sparsely.

Several reasons for the concentration of wineries in a relatively small area are that they require similar growing conditions and labour resources. The ideal location for a vineyard is a warm, sunny area with well-draining soil and a moderate climate [29].

Many wine-producing regions have a long history of wine production, and vineyards may be located near one another due to historical and cultural reasons.

The most consumed type of wine in Romania is dry red wine. Romania is known for its rich, full-bodied red wines made from indigenous grape varieties such as Fetească Neagră and Negru de Drăgășani. These wines are typically aged in oak barrels, which gives them a distinct flavor profile that is characterized by notes of dark fruit, spice, and vanilla. Other popular types of wine in Romania include dry white wine, rosé wine and sweet wines made from Fetească Albă and Grasă de Cotnari

According to a study published by Statista, 59.5% of Romanian respondents prefer red wines. 27.15% preferred white wines, 11.24% rose wine and 2.02% sparkling wine [30].

There are several reasons why Romanian people tend to prefer red wine. One reason is that red wine has been a traditional part of Romanian culture for centuries, and it is deeply ingrained in the country's social and culinary traditions. Additionally, Romania has a climate and soil that is well-suited to growing red grape varieties such as Fetească Neagră and Negru de Drăgășani, which are known for producing high-quality red wines.

Another reason is that red wine is often considered to be more versatile and food-friendly than white wine, which makes it a popular choice to pair with traditional Romanian cuisine, which tends to be hearty and meat-based. Red wine also tends to be more robust and full-bodied than white wine, which makes it a good match for the rich flavors and bold spices that are commonly used in Romanian cooking.

Finally, it could be argued that red wine tends to have more health benefits than white wine. Studies have shown that moderate red wine consumption may help protect against heart disease, high blood pressure, and certain types of cancer.

In terms of preference for alcoholic drinks, beer tends to be more preferred than wine (28.1% of respondents and 20%, respectively). A newcomer to the Romanian alcoholic drinks market is cider, which is enjoyed by 15.4% of respondents in the study published by Statista. 5.8% respondents prefer spirits. At the same time, 23 percent answered that they did not consume alcoholic drinks [31]

Romanians drank 3.38 litres of pure alcohol content equivalent in wine, per capita, in 2019. This measure is used to compare alcohol consumption between different types of drinks, with widely varying alcohol content. As such, Romanians tend to consume more alcohol from beer (5.25 litres per capita), which is generally associated with lower alcoholic content. Of note is that Romanians only drank 1.71 litres of pure alcohol content of spirits, which are associated with a higher alcohol concentration. Compared to other countries, Romania is in the 10th place worldwide in terms of

beer consumption, 20th in terms of wine consumption and 62nd in the ranking of spirits consumption [32].

Table 5: Evolution of per capita alcohol consumption in Romania (liters)

Type of alcoholic beverage	2019	2020	2021
Beer	89.1	87.8	88.1
Wines	23.4	21.1	23.7
Distilled spirits (40% alcohol content)	4.8	4.5	6.3

As shown in table 5, in terms of amounts consumed, beer was the most preferred type of alcoholic beverage, followed by wine and distilled spirits [33] [34]. It should be noted that while 2020 was marked by a drop in consumption for all three studied categories, the most significant one being in the case of wines (-9.82%). This can be one of the effects of the COVID-19 pandemic, as establishments such as restaurants, bars or pubs were temporarily closed. However, wine consumption recovered in 2021 and surpassed previous values.

IV. CONCLUSIONS

In conclusion, Romania is a market that should be interesting to both local and international wine and other alcoholic beverages producer, a strong contender to other European markets.

Further promotion might be necessary in order to ensure a higher degree of acceptance of wine, by highlighting the health and image benefits derived from it. Additionally, the country has a large and growing middle class that is becoming increasingly interested in wine, both for consumption and as a status symbol. Furthermore, Romania's proximity to other major wine-producing countries in Europe, such as Italy and France, makes it an attractive market for exporting wine.

Wine production is an important part of Romania's agricultural economy, providing jobs and income for many people in rural areas. Romania's diverse range of grape varieties and terroirs gives the opportunity to produce a wide range of wine styles, of which the ones preferred by the Romanian public are dry red wines.

REFERENCES

- [1] Flavia Dana Oltean, Manuela Rozalia Gabor, "Wine Tourism—A Sustainable Management Tool for Rural Development and Vineyards: Cross-Cultural Analysis of the Consumer Profile from Romania and Moldova" *Agriculture*, vol. 12, issue 10, October 2022.
- [2] R. J. Harrington, "Food and Wine Pairing: A Sensory Experience", Wiley, 2007
- [3] Jean-François Outreville, "Wine Consumption and Religions: A Research Note," *Beverages*, vol. 7, issue. 4, October 2021.
- [4] Jacquelyn M. Guilford, J. M. Pezzuto, "Wine and Health: A Review," *American Journal of Enology and Viticulture.*, vol. 62, issue 4, December 2011
- [5] Pierre-Yves Donzé, Sotaro Katsumata, "High-end luxury wine demand and income inequality," *International Journal of Wine Business Research.*, vol. 34, issue. 1, February 2022
- [6] R. Mitchell, C. M. Hall, Alison McIntosh, "Wine tourism and consumer behaviour," *Wine Tourism Around the World*, Routledge, 2000.
- [7] R. Broughton, "Right jobs pay off in wine industry," *Australian and New Zealand Grapegrower and Winemaker.*, 2013
- [8] E. A. Regel, A. Forneck, and E. Quendler "Job satisfaction of certified employees in viticulture: A qualitative study," *Work.*, vol. 67, no. 2, November 2020.
- [9] Roullier-Gall, Chloé, et al. "Sulfites and the wine metabolome." *Food chemistry*, Volume 237, December 2017
- [10] Ferreira, Sanette L., and Retha Muller. "Innovating the wine tourism product: Food-and-wine pairing in Stellenbosch wine routes." *African Journal for Physical Health Education, Recreation and Dance*, volume 19, 2013
- [11] Melissa St James, Natasa Christodoulidou, "Factors influencing wine consumption in Southern California consumers," *International Journal of Wine Business Research.*, vol. 21, issue. 1, March 2011.
- [12] E. Koussissi, A. Paterson and E. Cristovam, "Sensory discrimination of dry red wines from Greece" *Journal of Wine Research*, volume 13 issue 2, 2002
- [13] M. Damian, et al. "Grape cluster microclimate influences the aroma composition of Sauvignon blanc wine." *Food chemistry* volume 210, 2016
- [14] C. Dias, and L. Mendes, "Protected designation of origin (PDO), protected geographical indication (PGI) and traditional speciality guaranteed (TSG): A bibliometric analysis". *Food Research International*, volume 103, January 2018
- [15] R. Sellers, V.A. Sottini and S. Menghini, "Productivity growth in the winery sector: evidence from Italy and Spain". *International Journal of Wine Business Research*, volume 28, issue 1, March 2016
- [16] D. Vrontis, S. Bresciani, and E. Giacosa, "Tradition and innovation in Italian wine family businesses," *British Food Journal*, volume 118, issue 8, August 2016
- [17] Pettigrew, Simone. "Wine consumption contexts." *International Journal of Wine Marketing*, volume 15, issue 2, February 2003.
- [18] W. Han, and X. Y. Leung. "Virtual wine tours and wine tasting: The influence of offline and online embodiment integration on wine purchase decisions." *Tourism Management* volume 83, April 2021
- [19] G Szolnoki, D. Tait, M. Nagel, & A. Fortunato, "Using social media in the wine business: an exploratory study from Germany" *International Journal of Wine Business Research*, volume 26, issue 2, June 2014
- [20] L. Thach, "Wine 2.0—The next phase of wine marketing? Exploring US winery adoption of wine 2.0 components" *Journal of wine research*, volume 20, issue 2, September 2009
- [21] R. G. V. Bramley, "Precision Viticulture: Managing vineyard variability for improved quality outcomes. In *Managing wine quality*" Woodhead Publishing, 2022
- [22] Eurostat, Wine-grower holdings by production, accessed on 14.01.2023 (https://ec.europa.eu/eurostat/databrowser/view/VIT_T1/default/table/?lang=en&category=agr.orch_vit.vit)
- [23] W. Van Caenegem, J. A. Cleary and P. Drahos, "Pride and profit: geographical indications as regional development tools in Australia". *Journal of Economic & Social Policy*, volume 16, issue 1, January 2014
- [24] B. Delord, É. Montaigne & A. Coelho, "Vine planting rights, farm size and economic performance: Do economies of scale matter in the French viticulture sector?" *Wine economics and Policy*, volume 4, issue 1, 2015
- [25] Eurostat, Grapes by production, accessed on 14.01.2023, (<https://ec.europa.eu/eurostat/web/products-datasets/-/tag00121>)
- [26] Eurostat, Sold production, exports and imports, accessed on 15.01.2023, (<https://ec.europa.eu/eurostat/databrowser/view/DS-056120/default/table/?lang=en>)
- [27] Ministry of Finance, Information about companies, accessed on 15.01.2023 (<https://mfinante.gov.ro/info-pj-selectie-nume-si-judet>)

- [28] Cramele Reaş official website, accessed on 16.01.2022 (<https://cramelerecas.ro>)
- [29] G. Ferretti "A new geographical classification for vineyards tested in the South Tyrol wine region, northern Italy, on Pinot Noir and Sauvignon Blanc wines." Ecological Indicators volume 108, 2020
- [30] Statista, Wine consumption in Romania in 2020, by type of wine, accessed on 16.01.2023 (<https://www.statista.com/statistics/1124498/romania-wine-consumption-by-type/>)
- [31] Statista, Romanians' favorite alcoholic beverages in 2019, accessed on 16.01.2023 (<https://www.statista.com/statistics/1172295/romania-favorite-alcoholic-beverages/>)
- [32] NationMaster, Romania - Wine Consumption Per Capita, accessed on 16.01.2023 (<https://www.nationmaster.com/nmx/timeseries/romania-wine-consumption-per-capita>)
- [33] National Institute of Statistics, Beverage consumption in 2020, accessed on 17.01.2023 (https://insse.ro/cms/sites/default/files/field/publicatii/consumul_de_bauturi_in_anul_2020_0.pdf)
- [34] National Institute of Statistics, Beverage consumption in 2020, accessed on 17.01.2023 (https://insse.ro/cms/sites/default/files/field/publicatii/consumul_de_bauturi_in_anul_2021.pdf)