



Wine consumption in the world's largest wine consuming countries

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ABSTRACT

The goal of this paper is to examine wine consumption levels and changes in wine consumption worldwide and in the world's largest wine consuming countries. The average global consumption during the research period (2018–2023) was 2.9 liters per capita, with a significant decline at an average annual rate of 5.2%. There are significant differences in wine consumption among particular countries and regions of the world. The world's largest wine consumers are primarily developed countries with high incomes, high production levels, and the presence of habits and traditions of wine consumption, such as Portugal, France, Italy, Switzerland, and Spain. The extrapolation of the trend for the period up to 2030 suggests that wine consumption in Italy, Switzerland, and Spain will decline, while there will be a slight increase in France and Portugal. Based on the analysis of linear correlation between the average Gross Domestic Product per capita and wine consumption, it was found that income is a significant factor in wine consumption, but of varying importance across countries, considering the strong effect of socio-cultural factors such as consumer habits and wine consumption tradition, and the religious factor.

Keywords: consumption, wine, income, world

ИЗВОД

Циљ рада jeste да се сагледа ниво потрошње и промене у потрошњи вина у свету и земљама највећим светским потрошачима. Просечна светска потрошња у истраживаном временском периоду (2018–2023) iznosila je 2,9 литара по становнику са тенденцијом значајног пада по просечној годишњој стопи од 5,2%. Постоје значајне разлике у потрошњи вина по појединим земљама и регионима света. Највећи потрошачи вина у свету су, пре свега, развијене земаље, са високом доходком, високом производњом и присутним навикама и традицијом у конзумирању вина: Португалија, Француска, Италија Швајцарска и Шпанија. Сprovedеном екстраполацијом тренда за период до 2030. године дошло се до закључка да ће у Италији, Швајцарској и Шпанији уследити пад у потрошњи, а у Француској и Португалији незнатан пораст. На основу анализе линеарне корелације између просечног бруто друштвеног производа per capita и потрошње вина може се закључити да је утицај дохотка на потрошњу значајан фактор али да у свим земљама нема једнаку важност, односно да је јак утицај осталих, друштвено-културних фактора, као што су навике потрошача и традиција конзумирања вина, као и верски фактор.

Кључне речи: потрошња, вино, доходак, свет

1. Introduction

Wine is an agri-food product obtained through full or partial alcoholic fermentation of pomace or fresh grape must suitable for processing into wine (Đurović and Ilić, 2015). There is no doubt that wine is a healthful beverage. Through the ages, wine has been consumed as food and as a food adjunct. Until only recently, there was no hard experimental evidence to substantiate the claims that consuming wine contributes to health (Miljić and Puškaš, 2012).

The aim of the research is to examine the main characteristics and trends in wine consumption worldwide, specifically in countries with the highest global consumption. The task of this paper is also to explore the impact of income levels, standard of living,

and production levels on wine consumption, as well as to predict the trend of wine consumption until 2030.

Wine consumption depends on a number of factors:

- Cultural Factors: The tradition of wine consumption is present in many countries and cultures, e.g., France, Italy, Spain. In many countries, wine is an essential part of daily nutrition.
- Economic Factors: The price of wine and the income level of consumers significantly affect consumption. In high-income countries, wine consumption is generally higher, while in low-income countries wine is often seen as a luxury product. One of the most important economic factors determining wine consumption is the level of consumer income. Typically, an increase in income leads to an increase in wine

consumption. When income rises, consumers have more funds available for non-essential expenses, including wine. In this way, higher-income consumers tend to buy wine more often, and they also substitute and opt for higher-quality, generally more expensive wines. Wine consumption has different types of elasticity depending on income levels. In lower-income groups, wine consumption may be less elastic to changes in income, meaning that consumers with lower incomes will not significantly increase their wine consumption even if their income rises. On the other hand, in higher-income groups, wine consumption may be more sensitive to income changes. Generally, wine is more closely associated with luxury and enjoyment, and therefore consumers with higher incomes are more likely to consume it more often. Consumers with higher incomes typically buy and consume higher-quality, i.e., more expensive wines, meaning that with increasing income, consumers are willing to pay a higher price for wine. At the same time, in some countries, wine is deeply embedded in everyday culture, and wine consumption may be less dependent on income levels.

- **Demographic Factors:** Population structure, education levels, and lifestyle affect consumption. It is indicative that younger generations generally prefer beer or non-carbonated soft drinks to wine.

- **Health Reasons:** It is widely recognized that red wine positively impacts the cardiovascular system. At the same time, the negative impact of alcohol on health may reduce consumption.

- **Globalization and Fashion Trends:** Globalization increases the availability of wine in countries that were not traditionally wine consumers. Furthermore, trends in the consumption of rosé, muscat wines, wines produced through organic farming systems, and wines with lower alcohol content are becoming increasingly popular.

- **Promotion:** The presentation of wine in the media, as well as promotional activities by producers, can influence the level of consumption. For example, wine tastings, numerous festivals, and fairs can increase interest in wine.

- **Legal Factors:** Regulations concerning the production and consumption of alcohol, as well as taxes on alcoholic beverages, can either limit or encourage wine consumption.

Vlahović et al. (2017) emphasize that income significantly affects the allocation of funds for purchasing wine. Additionally, the wine brand plays a significant role in purchasing decisions, with crucial factors including the type of wine, price, and producer. Identifying consumer preferences, attitudes, and purchasing behavior allows producers to define appropriate marketing programs, strategies, and tactics that meet consumer needs, increase sales, and boost wine consumption. One of the significant factors determining consumption, which is gaining importance, is the relationship between the price and quality of wine. As stressed by Vlahović and Samardžija (2012), the consumer is the fundamental factor for wine demand; therefore, demand depends on the number and structure of consumers and their demands. As consumer taste and preferences in the wine market are changing, the quality of wine is decided by producers, while consumers are either willing or unwilling to pay for that quality (Chladkova et al., 2009). In addition to health benefits, wine often symbolizes prestige, especially among affluent consumers, and its

consumption is most influenced by tradition, confession, and habits, as well as the standard of living of the consumer (Vlahović et al., 2012).

2. Materials and methods

For the analysis of wine consumption, data from the State of the World Vine and Wine Sector 2023 (OIV) were used, along with literature from relevant publications, professional and scientific journals, etc. The research period was from 2018 to 2023, and was conditioned by the available statistical documentation. Standard mathematical and statistical methods were used.

Consumption was analyzed on a per capita annual basis, including average values, rates of change, correlation coefficients, multiple regression analysis, and extrapolation of wine consumption trends up to 2030, based on previous values. The data for the average Gross Domestic Product (per capita) were obtained based on the arithmetic mean for the 2018–2023 research period. Data on the population of the analyzed countries was taken for the year 2023. Information on the average annual income per capita for the analyzed countries was taken from the World Bank Group database.

Correlation is examined based on the correlation coefficient and the coefficient of determination. The correlation coefficient is an indicator of the degree of association between two variables. The value of this coefficient ranges from -1 to 1. In the case of a positive correlation, the coefficient ranges from 0 to 1, while for a negative correlation, it ranges from -1 to 0. The coefficient of determination represents the square of the correlation coefficient, and is often expressed as a percentage. This coefficient ranges from 0 to 1 (Mutavdžić and Đorić, 2018).

The phenomena observed statistically can vary depending on the influence of many factors. Regression analysis aims to uncover as many factors as possible that affect a given phenomenon. Multiple regression analysis investigates the existence of relationships between one phenomenon and two or more factors. The following rules apply to multiple regression analysis: the sample size must be larger than the number of unknown parameters being estimated, and there is no perfect correlation between independent variables

(<https://vpsle.edu.rs/wp-content/uploads/2019/02/Knjiga-Statistika-nova-2016-17.pdf>).

$$X_{i1,2,3,...m} = a_{1,2,3,...m} + b_{12,3,4,...m}X_{i2} + b_{12,2,4,...m}X_{i3} + ... + b_{1,m,2,3,...(1-m)}X_{im} + \varepsilon_i$$

$a_{1,2,3,...m}$ – free term

$X_{i1,2,3,...m}$ – individual regression values

$X_{i2}...X_{ij}$, $i=1,2,3,...n$, $j=1,2,3,...m$ – values of independent variables

$b_{12,3,4,...m}$, $b_{13,2,4}$, $b_{1m,2,3,...(m-1)}$ – regression coefficients

ε_i , $i=1,2,...,n$ – latent variable (random error)

m – number of independent variables

n – number of units in the sample

The extrapolation method is used to obtain data on the long-term trends of a phenomenon when it is difficult to assess whether there is a long-term tendency. As defined by Lovrić et al. (2013), the extrapolative calculation is a transformation of the

original time series where each data point is replaced by the sum of all previous data, with the weights exponentially decreasing as the distance from the past increases. The limitation of the extrapolation method is that it shows relatively weak results if there is a trend present in the series. Another limitation is that it provides only one future value as the result of the forecast.

3. Results and discussion

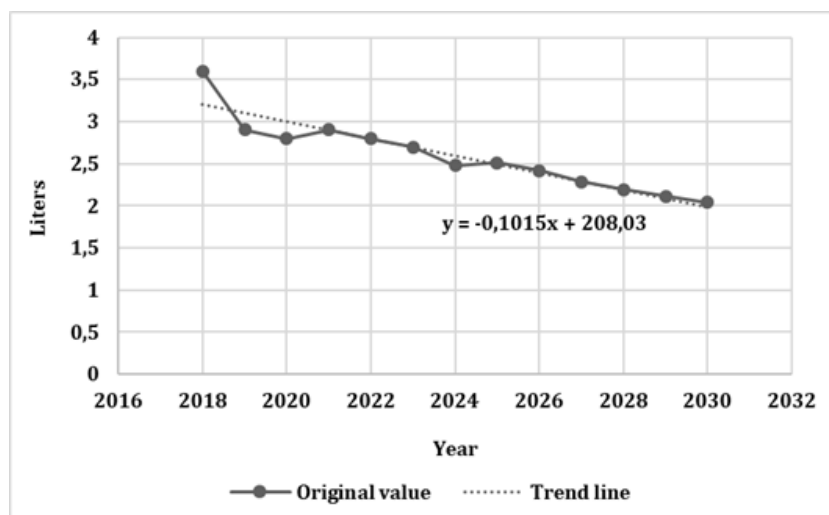
Over the past three decades, the global wine market has undergone dramatic changes. One of the biggest changes has been the structure of demand and wine consumption (Labys and Cohen, 2006; Hannin et al., 2010; Anderson and Nelgen, 2011). The restructuring process occurred for various reasons, notably because wine consumers have significantly changed their habits and preferences, contributing significantly to the transformations in the wine sector.

Global wine consumption has significantly declined since the 1960s as a response to changes in global

society regarding food and lifestyle (Medina-Albaladejo, 2009).

In the countries of the Old World (France, Italy, Spain, and Portugal), major producers and consumers since the late 19th century (Pinilla and Serrano, 2008; Unwin, 1991) have witnessed a steady, general decline in wine consumption during the last third of the 20th century. In contrast, New World countries (United States, Chile, Argentina, Australia, New Zealand, and South Africa) have seen an increase in consumption since the 1980s, and so have northern European and Asian countries somewhat later (Anderson, 2004). However, this increase in new wine-producing countries did not compensate for the decline in traditional ones, and global wine consumption fell by 15.23% at the beginning of this century (Organisation Internationale de la Vigne et du Vin, 2008).

The average global wine consumption in the studied period (2018–2023) was very modest, amounting to 2.9 liters per capita annually, with a significant declining trend at an average annual rate of 5.2%. Based on trend extrapolation, it is expected that global wine consumption will reach 2.8 liters per capita by 2030, which would mark a 4.1% decrease (Graph 1).



Graph 1. Global wine consumption with trend extrapolation (liters)

Consumption is distinctly uneven across different regions and countries worldwide.

In traditional wine-producing and consuming countries, dramatic changes in the quantity of wine consumed were accompanied by significant changes in consumption habits: from being a necessary component of daily nutrition to a luxurious pleasure (Mäkelä et al., 2006). New dietary habits worldwide, with a focus on healthy living and physical appearance, have also had a considerable effect on reducing wine consumption, and so have other aspects such as promotional campaigns against alcohol consumption promoted by large multinational companies producing soft drinks, as well as public administration.

One of the strong global trends is the rise in the consumption of wines produced under organic farming systems (organic wines). It is predicted that the global

market for organic wines will significantly grow from about \$11 billion USD in 2020 to approximately \$30 billion USD by 2030, driven by consumer preferences, especially in European countries (<https://www.vinerra.com>).

Traditionally, the largest consumers of wine are the southern European countries (Portugal, France, Italy, Spain), where the population consumes wine as part of their basic diet. This practice is a cultural heritage of the "Mediterranean Triad" (cereals, olive oil, and wine), where wine was a basic food component and a very important source of calories (Medina-Albaladejo, 2009). In the studied period, the largest consumers of wine in the world were the inhabitants of Portugal, France, Italy, Switzerland, and Spain (Table 1), with an average consumption of 36.5 liters per capita annually.

Table 1.

Countries with the highest wine consumption in the world (2018–2023)

Country	Average Value (liters per capita annually)	Change Rate (%)	World Index = 100	Correlation Coefficient (%)	Multiple Correlation (%)
Portugal	61.2	2.6	2052.2	0.8	33.7
France	37.9	-1.1	1273.3	0.1	11.1
Italy	37.8	-0.4	1270.9	0.9	23.5
Switzerland	32.4	-0.7	1087.3	0.8	99.1
Spain	24.4	-1.4	818.5	0.7	34.0

Source: Calculations by the author based on OIV data, 2023

Portugal is the world's largest wine consumer in the studied period, with an average consumption of 61.2 liters per capita annually, experiencing a modest increase at an average annual rate of 2.6% (2018–2023). The high wine consumption can be explained by the influence of various historical, cultural, and economic factors: wine has deep roots in Portuguese history and culture. It is a significant wine producer, and viticulture plays a key role in the economy and daily life. There is a long-standing tradition of consuming wine on various occasions. Portugal is famous for producing different types of wines, with the most famous and popular being "Porto." Additionally, the country has a large variety of wines from different regions (such as Alentejo, Bairrada, etc.), which contributes to its diversity and high consumption. In Portugal, as in many other Mediterranean countries, wine is not just a drink but part of social customs. Due to its high production, wine consumption is deeply embedded in daily life.

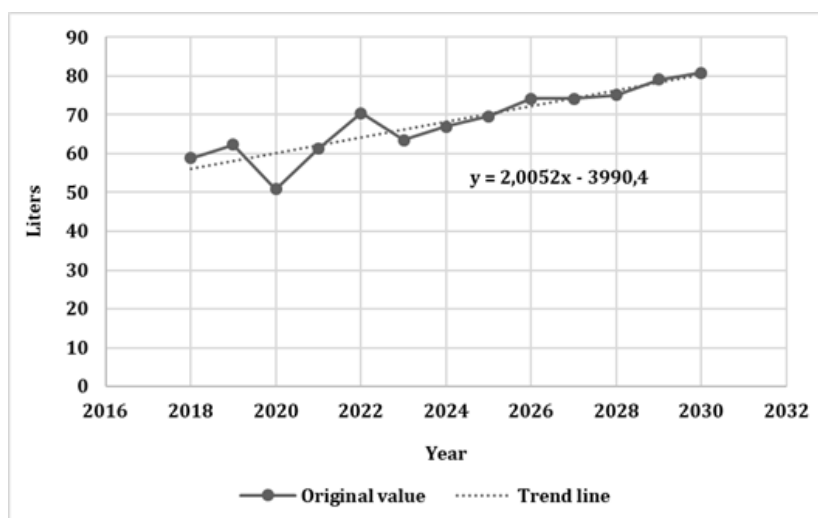
Wine prices in Portugal are relatively low compared to other major global producers, which makes wine accessible to a wide range of consumers (Madureira, Nunes, 2013).

The average income per capita in Portugal was \$24.307 annually (<https://data.worldbank.org>). A linear correlation analysis between average gross domestic product per capita and wine consumption showed a very strong and positive relationship of 0.8%. This value, close to the maximum of 1, indicates that the connection between income levels and wine consumption is not perfect, but it is very strong. It can

be assumed that an increase in income will lead to an increase in wine consumption in the coming period.

A multiple correlation analysis shows that average wine consumption can be fully explained by 33.7% through concurrent changes in production and achieved income over the studied period. The obtained coefficient suggests that the model successfully explains a third of the variation in wine consumption, while the rest of the variation could be due to other factors not considered in the analysis. Essentially, the results suggest that both production and income levels have a significant impact on wine consumption, but other factors, such as culture, tradition, and consumer habits, also play a key role.

The extrapolation analysis for the period until 2030 shows a slight increase in wine consumption by 0.1% (Graph 2). At the same time, the "premiumization" trend is present, meaning that consumers are increasingly consuming higher-quality wines, which also tend to be more expensive. This trend is linked to the increase in the number of wine tourists and various promotional activities. As predicted by Manfredi (2021), wine tourism is expected to influence the rise in wine consumption in Portugal, which has significantly expanded in recent years. In fact, Portugal has become an important destination for wine tourism. Regions like Douro, along with other wine regions, attract tourists who wish to learn about wine production while enjoying tastings. Wine tourism boosts local wine consumption but also increases global interest in wines.

**Graph 2.** Wine consumption in Portugal with trend extrapolation (liters)

Trinadade-Carlos et al. (2019) determined that the most important criteria for Portuguese wine consumers are taste and aroma. Consumers in Portugal can be divided into three groups:

1. The first group consists of consumers for whom price is not a decisive factor when purchasing wine.
2. The second group consists of those for whom price is crucial when buying wine.
3. The third group consists of consumers who expect that the price of the wine will significantly influence its quality and value.

France is a country with a long tradition of wine production and ranks second in terms of average wine consumption per capita annually. The average wine consumption in the studied period was 37.9 liters per capita annually, with a slight decline of 1.1% annually. Yajet (2001) reported that wine consumption per capita at the beginning of the 1990s was 80 liters. Changes in health habits and standard of living, as well as the influence of globalization, led to a decline in wine consumption, with the replacement of wine by other drinks, primarily carbonated soft drinks and beer. Vlahović et al. (2017) also noted that, compared to thirty years earlier, wine consumption in France has significantly decreased due to changes in consumer tastes, the economic crisis, the rising proportion of the population from Islamic faith (who do not consume wine for religious reasons), and significant health recommendations by organizations promoting reduced alcohol consumption.

High wine consumption in France can be explained by various factors: wine has deep significance and roots in French culture and history, and it has always been part of daily life. France is one of the leading countries in the production and export of wine, with numerous wine regions such as Burgundy, Bordeaux, and Champagne. The high supply significantly influences the achieved consumption. In France, wine is an integral part of meals, and is regularly consumed, making it a daily part of life. France produces a large number of different wines, from light white wines to rich reds, offering a wide selection that satisfies different consumer preferences. In the structure of wine consumption, red wines dominate (65%), followed by white wines (25%) and rosé wines (around 10%) in 2024. French consumers tend to prefer higher-quality wines, and many of them are familiar with various quality designations such as AOC (Appellation d'Origine Contrôlée) and others.

France is characterized by a high standard of living, with the average income per capita in the studied period being \$41.749 annually. A linear correlation analysis between average gross domestic product per capita and wine consumption showed a very weak positive correlation of 0.1%. The value of this correlation suggests that, although there is a certain positive relationship (as income increases, wine consumption tends to increase), the connection is very weak and inconsistent. This means that income levels have a minimal impact on wine consumption in France.

This analysis suggests that, while economic factors (income and production) certainly influence wine consumption, cultural, social, and personal preferences still play a more significant role, especially in a country like France, where wine has been deeply integrated into daily life for centuries. The consumption of wine is predominantly influenced by factors other than income,

such as consumer preferences, habits, lifestyle, socio-cultural factors, and other elements not directly linked to income levels (Salies, 2004). Larivière et al. (2000) argue that an increase in the price of high-quality wines has very little effect on reducing demand for them, suggesting that other factors are more dominant in driving demand and consumption than price itself.

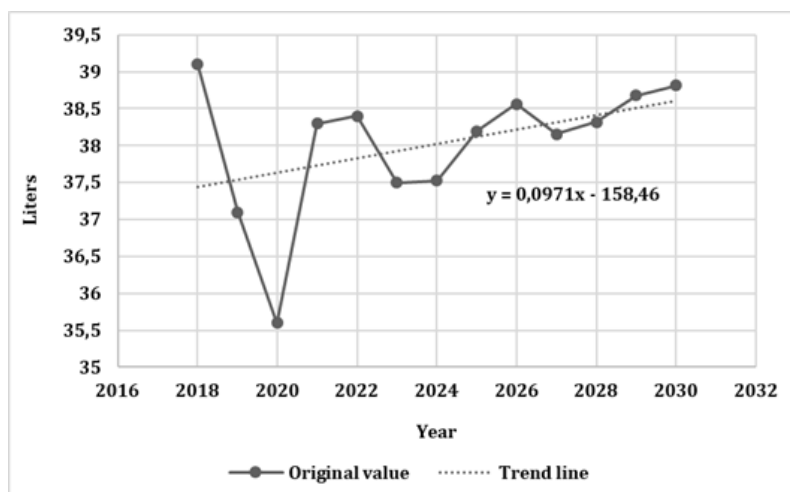
Multiple correlation analysis indicates that average wine consumption can be explained by only 11.1% of concurrent changes in production and income levels. This suggests that there is a relatively small impact from these factors on wine consumption. The remaining 88.9% of the variation in wine consumption can be attributed to other factors not included in the model. These might include culture, consumer preferences, wine promotions, taxation, health reasons, and other socio-economic variables that significantly determine consumption patterns. Hence, it can be concluded that income levels have minimal influence on wine consumption in France, with cultural, behavioral, and other factors having a far more substantial impact.

An extrapolation analysis for the period up to 2030 indicates a slight increase in wine consumption by 0.2% (Graph 3), due to ongoing efforts by the wine industry to adapt to new consumer habits. Recently, there has been an increasing focus on the health aspects of alcohol consumption, leading to a rise in interest for wines with lower alcohol content and wines produced through biodynamic or organic farming systems.

Italy, ranking third globally in average wine consumption, sees an average consumption of 37.8 liters per capita annually, with a slight decline of 0.4% per year over the studied period. Until the 1970s, Italy's annual wine consumption per capita was greater than 100 liters (Corsi et al., 2004), but in the last three decades, it has dropped to between 30 and 40 liters. Sloop (2015) also observed that, in the 1970s, average annual wine consumption per capita was around 110 liters, but by 2015, it had decreased to just 40 liters per capita. The decline in wine consumption in Italy has been happening for decades, driven by factors such as media campaigns against alcohol consumption and changes in lifestyle and consumer preferences.

Average income per capita in Italy, during the studied period, was \$35.356 annually. Cembalo et al. (2014) reported that, in Italy, there have been significant shifts in consumption patterns, particularly with the premium wine segment expanding considerably at the expense of cheaper, table wines. Expensive wines have gained a significant share of the market, becoming more accessible to a wider consumer base, not just the elite (Ritchie, 2009). At the same time, cheaper wines are now occupying a place in the market similar to other mass-market consumer goods.

A linear correlation analysis between average gross domestic product per capita and wine consumption shows a strong and positive correlation of 0.9%. This suggests that as income levels rise, wine consumption tends to increase in a similar manner. However, while this correlation suggests a strong connection, it is important to note that it does not necessarily mean consumers with higher incomes will purchase more wine, as other factors also play a role. Nonetheless, this correlation indicates that there is indeed a noticeable relationship between income and wine consumption in Italy.



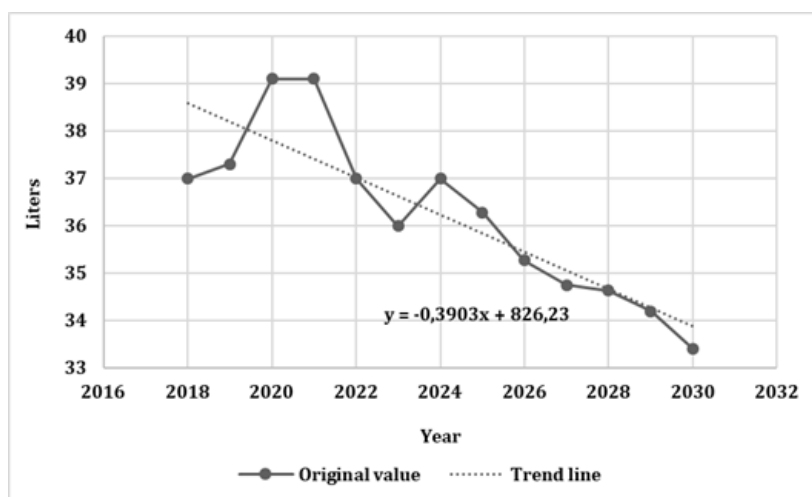
Graph 3. Wine consumption in France with trend extrapolation (liters)

Multiple correlation analysis indicates that average wine consumption can be explained by 23.5% of concurrent changes in production and income levels. This suggests that wine production and income levels have a moderate impact on wine consumption, but they are not the only factors at play. Other factors, such as cultural, social, psychological, and marketing elements, likely have a dominant influence on consumption patterns.

An extrapolation analysis for the period up to 2030 shows a slight decline in wine consumption by 0.2% (Graph 4), consistent with the current trends in the European Union. This decline could be linked to intensive government campaigns against excessive

alcohol consumption, as well as stricter laws related to alcohol consumption and driving under the influence. Simultaneously, there is a growing interest in organic wines, which could lead to changes in consumption structure and mitigate the overall decline in wine consumption.

These findings highlight the complex dynamics of wine consumption, where economic factors like income and production have their place but are overshadowed by cultural, social, and lifestyle factors that increasingly shape consumer behavior. The wine industry will need to continue adapting to these trends, including the growing interest in healthier wine options and sustainability.



Graph 4. Wine consumption in Italy with trend extrapolation (liters)

Switzerland ranks fourth in terms of average wine consumption per capita annually, with an average of 32.4 liters per person during the studied period, exhibiting a moderate decline of 0.7% per year. In 2021, residents of Switzerland aged 16 and over consumed an average of 35.3 liters of wine, which is just under a bottle per week (Brunner et al., 2023). The Swiss wine market is considered mature and saturated (Masset et al., 2019). After consumption declined in recent decades, the frequency of consumption and the proportion of regular consumers have stabilized at a relatively high level (Trend, 2021).

In 2023, the market share of Swiss wine increased by 1.6% compared to the previous year, reaching 38.6%, with 91 million liters of domestic wine consumed, a 3.8% increase from 2022. In contrast, foreign wine consumption dropped by 3.1%, totaling 144.9 million liters. In recent years, there has been a rise in white wine consumption, though it has not been able to compensate for the decline in the popularity of red wines. Red wine still dominates among consumers, accounting for 64% of total consumption, with at least 150 million liters consumed annually (Swissinfo). Over a third of wine consumption comes from domestic red

and white wines, while rosé wine is consumed in significantly smaller quantities (<https://www.cbi.eu/sites/default/files/market-information/product-factsheet-switzerland-premium-wine-2016redacted.pdf>).

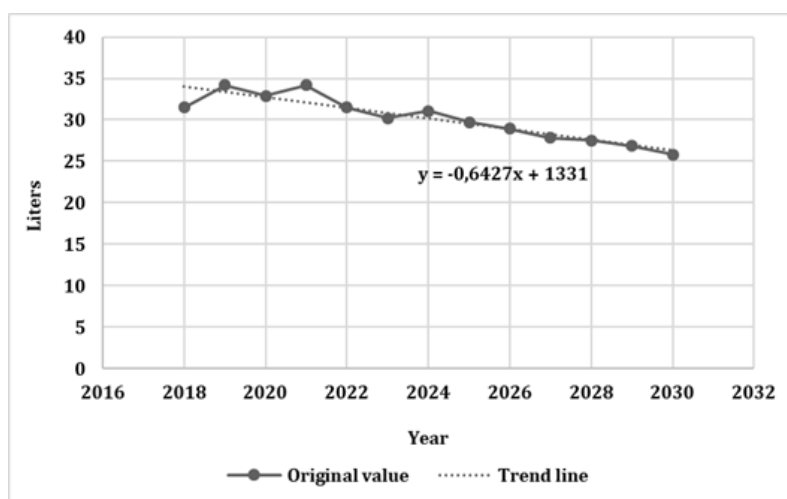
Switzerland is known for its high standard of living, significantly higher than countries like Portugal, France, and Italy. The average annual income per capita during the studied period was \$90.248 USD, reflecting high purchasing power among Swiss consumers, who likely spend the largest budget on wine per capita in the world (<https://www.bfs.admin.ch/asset/fr/20024405>). This is coupled with the fact that Swiss consumers predominantly purchase premium wines, with only a small percentage of lower-quality wines being consumed (<https://www.changins.ch/prestations/osmv/rapports-annuels/>).

A linear correlation analysis between GDP per capita and wine consumption reveals a strong and positive correlation of 0.8%. The close-to-maximum

value of this correlation suggests a strong positive relationship between income levels and wine consumption. As income increases, wine consumption tends to rise similarly.

The multiple correlation analysis shows that 99.1% of the variance in average wine consumption can be explained by simultaneous changes in production and income levels. This coefficient indicates that the combined effects of wine production and income levels almost entirely explain wine consumption. This suggests that production and income are dominant factors influencing wine consumption, with minimal influence from other potential factors. The remaining 0.9% of variation could be attributed to factors not included in the model.

An extrapolation analysis for the period up to 2030 predicts a slight decline in wine consumption by 0.2% (Graph 5). This decrease could be attributed to health concerns and the substitution of wine consumption with other beverages, especially among the younger population.



Graph 5. Wine consumption in Switzerland with trend extrapolation (liters)

Spain is ranked fifth among the largest wine consumers globally. The average wine consumption during the studied period was 24.4 liters per capita annually, showing a 1.4% decline per year. The reasons for this decline are attributed to several factors, including the increasing preference among the younger population for other beverages such as soft drinks, beer, cocktails, and healthier drinks like juices and water. This trend highlights the shift in drinking habits and changing tastes, especially in younger generations.

These findings provide a detailed view of the wine consumption patterns in Switzerland and Spain, underscoring the influence of income, production levels, and cultural shifts. In both countries, wine remains a significant part of the lifestyle, but evolving consumer preferences and health concerns are beginning to affect the overall consumption trends.

Spain has experienced significant changes in wine consumption patterns in recent decades. The shift away from wine as the primary beverage is attributed to several factors, notably an increased awareness of health risks associated with alcohol consumption. More and more people in Spain are turning to healthier

options such as organic products, signaling a broader cultural shift toward wellness and healthier lifestyles.

Additionally, the financial crisis of 2008 played a crucial role in altering consumer habits. High-quality wines, which often come with a hefty price tag, became less affordable for many. This economic strain led to a decrease in domestic wine consumption, even as Spain became the world's largest wine exporter. While exports flourished, local consumption did not follow this upward trend, with Spain increasingly focusing on producing wine for export markets while domestic consumption habits changed.

As highlighted by Martinez-Carrion and Medina-Albaldejo (2010), wine consumption in Spain was once as high as 66 liters per capita in the early 1960s, making wine the number one beverage in the country. However, since then, consumption has declined sharply. Various factors contribute to this decrease, such as changes in consumer behavior, declining purchasing power, inflation, and geopolitical instability (Guerrero and Medina, 2024). According to certain scholars (Lecocq, Visser, 2006; Troncoso, Aguirre, 2006), the reduction in wine consumption can be explained by both economic factors and socio-cultural

shifts. As incomes grew and the standard of living improved through industrialization and urbanization, many Spaniards became more health-conscious and reduced their consumption of alcohol, including wine. Furthermore, changes in the age structure of the population led to a growing preference for other beverages, better suited to the needs of young, urban consumers (Barber et al., 2008).

At the end of the 20th century, consumer habits shifted toward more premium wines with lower alcohol content, made using new production technologies and consumed primarily in restaurants and bars (Morilla, 2001). This transition represented a more conscious and deliberate approach to wine purchasing, with wine consumption becoming part of a gastronomic ritual rather than an everyday habit. This new type of consumer contrasts sharply with the traditional, older consumer, who favored lower-quality wines with higher alcohol content, even if they recognized the quality of premium wines.

Economic Indicators: The average annual income in Spain during the studied period is \$30.369 USD. The linear correlation analysis between GDP per capita and wine consumption reveals a moderate positive correlation of 0.7%. This suggests that as income levels rise, wine consumption tends to increase, but the relationship is not perfect. Other factors, such as product assortment, consumer habits, and preferences unrelated to income, also play a role in determining wine consumption.

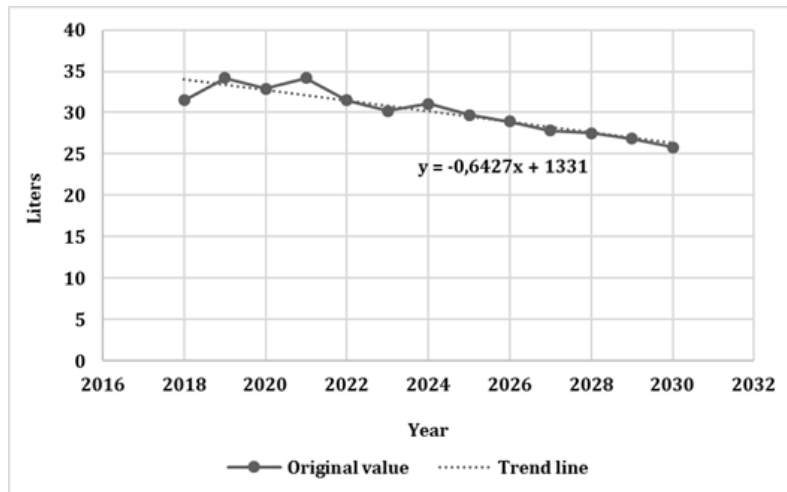
A multiple correlation analysis shows that 34.0% of the variation in wine consumption can be explained by simultaneous changes in production and income

levels. This indicates that both factors have a significant, yet partial influence on wine consumption, but they are not the sole contributors. The remaining 66% of the variation can be attributed to other factors, such as price, economic propaganda, consumer preferences, demographic variables, and more.

The extrapolated trend analysis for the period up to 2030 shows that wine consumption in Spain is likely to decline further, by 0.3% (Graph 6). This forecast is in line with the broader trends of health concerns and the substitution of wine with other beverages, particularly among the younger population.

The new typical wine consumer is aligned with the health benefits that experts associate with moderate wine consumption. This consumer believes that moderate wine consumption can help reduce fat levels and cholesterol, act as a powerful ally against cancer, and offer protection for the cardiovascular system (Agrawal et al., 2007). This is particularly true for high-quality red wines, which are rich in tannins and are increasingly consumed due to their perceived health benefits.

There is also a growing trend toward consuming wine with higher quality attributes, aligning with global dietary habits adopted in the last quarter of the 20th century. These habits emphasize eating out, the appreciation of quality, and variety over general or qualitative attributes, which reflects the changing preferences of modern consumers (Mili, 2005). This shift underscores the growing demand for wines that are not only premium in quality but also health-conscious and natural, in line with broader trends in food and beverage consumption.



Graph 6. Wine consumption in Spain with trend extrapolation (liters)

These evolving trends in Spain show a clear shift in wine consumption, influenced by a combination of economic pressures, health consciousness, and changing cultural norms. The long-standing tradition of wine consumption is still present, but it is increasingly shaped by the needs and preferences of modern consumers who prioritize health, quality, and sustainability.

Conclusion

The average global wine consumption during the examined period (2018–2023) was rather modest,

amounting to 2.9 liters per capita annually, with a significant downward trend at an average annual rate of 5.2%. Based on the trend extrapolation, it is expected that global wine consumption in 2030 will amount to 2.8 liters, representing a 4.1% decrease. Consumption is highly uneven across different regions and countries.

The highest wine consumption per capita in the world is recorded in Portugal, averaging 61.2 liters annually, followed by France (37.9 liters), Italy (37.8 liters), Switzerland (32.4 liters), and Spain (24.4 liters). These countries are traditionally significant wine consumers, but compared to thirty years ago, their consumption has decreased significantly. During the

studied period, consumption increased in Portugal, Italy, and Switzerland, while France and Spain experienced a slight decline.

Trend extrapolation for the period up to 2030 suggests a decrease in consumption in Italy, Switzerland, and Spain, while France and Portugal are projected to experience a slight increase. The trend in consumption will depend, among other factors, on changes in purchasing power, i.e., income levels and retail wine prices, as well as socio-cultural factors and appeals from the World Health Organization (WHO) advocating for the reduction of alcohol consumption, including wine.

Based on the analysis of linear correlation between average GDP per capita and wine consumption, it can be concluded that Italy (0.9%), Switzerland (0.8%), and Portugal (0.8%) have a strong positive correlation, indicating that income growth has a notable impact on consumption. In Spain, the correlation is moderately strong and positive (0.7%), while in France it is very weakly positive (0.1%), meaning that income growth will have very little impact on increasing wine consumption. The results suggest that while income is a significant factor in wine consumption, it does not carry equal weight across all countries—social and cultural factors also play a major role.

The future of wine consumption worldwide will be shaped by growing demands for health, sustainability, and technology, accompanied by a constant search for new wine regions and varieties. Technology and innovation will play a crucial role in defining consumer habits. It is expected that demand will grow for authentic, organic, biodynamic, orange, sparkling, and traditionally produced wines with a lower alcohol content.

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