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Analysis of military personnel perceptions on the Romanian wine market

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Abstract: The study analyses wine consumption behavior among Romanian military personnel, focusing on the relationship between individual preferences, level of oenological education, and professional interest in this field.

Introduction

The wine market is a complex and competitive one, with economic, cultural, and social influences [15, 24]. Consumer preferences are continually changing, and producers must adapt in order to remain competitive [1, 7].

Wine has been a part of soldiers' life since antiquity. The Roman soldiers included wine in their daily diet because they believed this was essential to their health and fighting spirit.

Material and method

This study was carried out through an opinion survey filled out by a selected group of Ministry of National Defense employees and army troops from Timisoara during 2025 year.

There were 100 completed surveys between January 29 and December 13, 2025.

The survey was conducted online using Survio [28], which is online software for generating and evaluating questions, which is basically a survey platform.

The survey is a descriptive, sociological, and marketing format designed to collect and analyze information about the behavior and preferences of army members about wine drinking habits.

For survey creating, we used several types of questions:

- "Closed questions" with defined options (e.g., rural/urban, type of wine).
• "Open" questions, such as "What wineries in Romania do you know?"
• "Mixed questions"; some can be answered with "Other..." for different alternatives.

The survey has three directions to collect data:

- Social and demographic data (questions 1-4): circumstances, gender, age, and education were used to classify answers.
• Consumption behavior (questions 5-12): frequency of consumption, preferences for wine type, color, origin, and location of consumption, etc.
• Level of knowledge and attitude about wine (questions 13-21): which brands and wineries are recognized, which types of wines do they prefer, where do they buy wine, do they attend tastings, etc.

The aim of this survey was:

- To identify the profile of wine consumers, respectively of military personnel (age, gender, education, environment)
• To find out consumption preferences (type of wine, frequency of consumption, color, price).
• To analyze the factors that influences wine choice (origin, brand, winery, and price).
• To determine the knowledge level of Romanian wines and wineries.
• To provide useful information for producers, traders or researchers in the field of winemaking.

For the Principal Component Analysis (PCA) analysis, behaviorally relevant variables were selected and numerically transformed. The data were standardized (z-score) to eliminate the influence of different scales.

Results and discussions

The data set includes 100 respondents, primarily military members, which offers social and professional diversity and enables accurate interpretations of consumption behavior in connection to the specifics of this group.

The majority of males (84%), compared to women (16%), reflecting the true nature of the army system;

Age 18-24 years (5%), age 25-30 years (15%), age 31-40 years (50%), and 41-50 years (30%). The majority of age categories are focused in the 31-50 year segment (80%), which implies a group linked with professional and financial stability.

Active military personnel have an average or higher educational level, with the majority having high school graduates (63%), and those with higher education accounting for 37%.

The demographic structure of the target group explains a balanced, disciplined and controlled consumption behavior, without excesses, but oriented towards quality and tradition. Wine is preferred by 61% of respondents, significantly exceeding beer (22%) and well above distilled spirits (4%), and 13% declare that they do not consume alcohol.

This association suggests cultural and social consumption rather than a daily routine, which is particularly relevant to educated metropolitan populations and the military environment. The 13% of non-consumers shows self-discipline, professional responsibility, and commitment to institutional standards.

The reduced frequency of consumption is closely tied to the work schedule, the physical and mental fitness standards, and the position's responsibilities. Wine consumption appears to be primarily a social ritual and regulated relaxation than a daily habit. Red wine has the most replies (42%), followed by rosé and white wines (23% and 22%, respectively), with 13% having no clear preference.

The percentages for the preferred type of wine are as follows: semi-dry (41%), semi-sweet (23%), sweet (19%), and dry (17%). The taste for red wine is associated with age 31-50 and domestic consumption. The prevalence of semi-dry and semi-sweet wines (64%) shows a big, non-professional consumer; a preference for wines that are attractive to the senses; and an average level of oenological expertise.

This is further proven by the free responses, in which many respondents declare that they are unfamiliar with the different types or do not have specific preferences. Military troops favor balanced, easy-to-consume wines and avoid flavor extremes. This approach is in accordance with a disciplined and pragmatic lifestyle.

The research shows that 44% of the target group agrees to pay between 50-100 lei (10 - 20 Euros) for a bottle of wine. Other consumers are willing to pay for a bottle of wine: 30-50 lei (6-10 Euros) - 39%; < 30 lei (6 Euros) - 13%; > 100 lei (20 Euros) - 4%.

The leading group is willing to spend a moderate to medium-high price, which is correlated with domestic consumption, a preference for Romanian wines, and a priority focused on the quality/price ratio. This model reflects a rational, analytical consumer who prefers value over extravagant behavior. Military personnel stable salary provides access to moderate and medium-high quality wines. Price is not the primary criterion, but it is carefully considered in accordance with expected quality.

There is a clear gap between the practical knowledge of military personnel in the target group (grape harvest - 87%, vineyard management - 59%, home-made wine - 55%, vineyard planting - 44%) and the relatively low scientific oenological background. According to the results, 74% of target group members had never participated in an organized wine tasting. Occasional consumption of sparkling wines is dominant (78%).

A large number of respondents replied that they only drink sparkling wine on special occasions (anniversaries, holidays, family reunions, and ceremonies). Sparkling wines are considered as celebration beverages rather than everyday consumption. Only 6% of respondents stated they consumed sparkling wines regularly.

Significant percentages (16%) claim they don't drink any sparkling wines. This corresponds to a disapproval of the acidity and fruitiness of sparkling wines and a preference for aging wines, particularly red or semi-dry ones. When taken together, these findings are correlated with: low frequency of wine consumption overall; preference for semi-dry and semi-sweet wines, which offer palatable comfort and stable flavor; low participation in tastings, which minimizes the exploration of wine types like prosecco or cava; and predominant consumption at home (82%), where sparkling wines are less frequently preferred.

Many respondents do not know the varieties; they confuse table grape varieties with those for wine, and white wines with red wines. Others refer to hybrids by their local names (Ananas, Căpșunică, Ceasla, Nova, Zaiță). Romanian grape cultivars (Tămăioasă românească, Grasă de Cotnari, Busuioacă de Bohotin, Fetească regală, Fetească albă, Fetească neagră, Băbească, Frâncușă) were recognized by a quarter of the respondents.

Among the wineries in Romania, the most famous are Cramele Rețas, mentioned in 60% of the answers. Local Timiș wineries including Aramic, Petrovaselo, and Theasaurus were mentioned in 15% of the responses. Cotnari, Murfatlar, Corcova, Oprisor, Jidvei, Tohani, Miniș, Dradara, Liliac, La Salina, Hermeziu, Budureasca, Aurelia Vișinescu, Vincon Vancea, and more wineries were also named. Additionally, some wineries from the Republic of Moldova are confused with Romanian wineries (Cricova, Purcari).

The responses to the question "What wine brands do you know?" were diverse and inconsistent ("I don't know," "none"), including for commercial brands (e.g., Cotnari, Rețas, Murfatlar, Jidvei), premium or niche wineries (Davino, Avincis, Bauer, Petro Vaselo), varietal names (Fetească, Cabernet Sauvignon, Merlot), traditional/popular names (Sânge de taur, Lacrima lui Ovidiu), regions or style of wines (La Rioja, Grand Cru). The most recognized brands are: Cotnari, Rețas, Murfatlar, Jidvei, Beciu Domnesc.

The best-known brands include Cotnari, Rețas, Murfatlar, Jidvei, and Beciu Domnesc. These brands are widely spread across the country, are associated with a cheap quality-price ratio, and are frequently found in supermarkets and general-stores. For army members, popularity is an essential consideration, and the decision is based on safety, predictability, and tradition. The responses to the question regarding wine brands suggest the military's limited understanding of brand, variety, and area, with a focus on famous and traditional Romanian labels. Military personnel have a practical, traditional viticultural culture, acquired informally, but at a low level of formal oenological education.

The responses to the question regarding wine brands suggest the military's limited understanding of brand, variety, and area, with a focus on established and traditional Romanian labels. Military personnel have a realistic, traditional viticultural knowledge that they have gained informally, but they have had little formal oenological education. Wine selection is practical and reasonable with a focus on immediate satisfaction and table suitability, rather than research or social status.

The most commonly reported variables are taste, price, color, aroma, and wine type (semi-dry/semi-sweet), whereas quality C.D.O. (Controlled Designation of Origin) variety, linked culinary tradition, or geographical region were far less frequently reported. Taste as the primary indicator confirms the average level of oenological education. Price appears as a secondary filter, not the main one, suggesting consumption oriented towards satisfaction, not towards status. To determine the implied dimensions that describe consuming behavior, the relevant variables in the survey were subjected to Principal Component Analysis (PCA).

The research identified three primary components, which account for around 68-75% of the overall variance:

Component PC1 - "Rational-traditional consumption" is characterized by: preference for wine (especially red), moderate consumption (occasional), orientation towards medium price (30-100 lei; 6 - 20 Euros), predominant consumption at home, practical winemaking experience.

Component PC1 - "Rational-traditional consumption" is defined by: a liking for wine (particularly red), moderate consumption (occasional), a preference for medium prices (30-100 lei), primary consumption at home, and practical winemaking knowledge. This represents the sample's typical consumer: realistic, conventional, value-added, and balanced. Involvement in tastings, knowledge of types and brands, and diversity of tastes (including sparkling wines) are all favorably connected with component PC2 - "Oenological education and openness".

This component separates knowledgeable customers different from conventional ones. In the sample, this dimension has low levels, suggesting a shortage of oenological knowledge.

Component PC3 - "Sensory Preferences" is defined by the type of wine (white, red, or rosé), the sugar level (dry or semi-sweet), and personal taste preferences. This component reflects the diversity of tastes without becoming highly related to socioeconomic status. The PCA analysis shows that tradition and socio-professional background are more significant than oenological education in influencing consuming behavior.

The data analysis suggests a constant, conservative consumption, with limited opportunities for diversification without educational or academic support (e.g., tastings, educational programs).

Table 1. Loadings matrix (PCA)

Table with 4 columns: Variable, PC1 (Traditional Consumption), PC2 (wine science/education), PC3 (Sensory Preferences). Rows include Consumption frequency, Wine type preference, Wine type (Red vs. White/Rosé), Sugar content (Dry-Sweet), Accepted price, Domestic consumption, Participation in tastings events, Knowledge about varieties, Knowledge of brands, Practical viticultural experience, Sparkling wine consumption.

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Table 2. Explained variance

Table with 2 columns: Component, Explained variance (%). Rows: PC1 (38.8%), PC2 (22.4%), PC3 (11.8%), Total (72.8%).

The biplot graphic (Fig. 1) for the first two PCA components demonstrates the correlations between the variables as well as the location of consumer types in space. The variables associated with traditional consumption (consumption at home, frequency of consumption, and wine preference) are aligned on the PC1 axis, whereas the variables associated with oenological education (tastings, knowledge of varieties and brands) define the PC2 axis, highlighting a clear distinction between traditional and informed consumers.

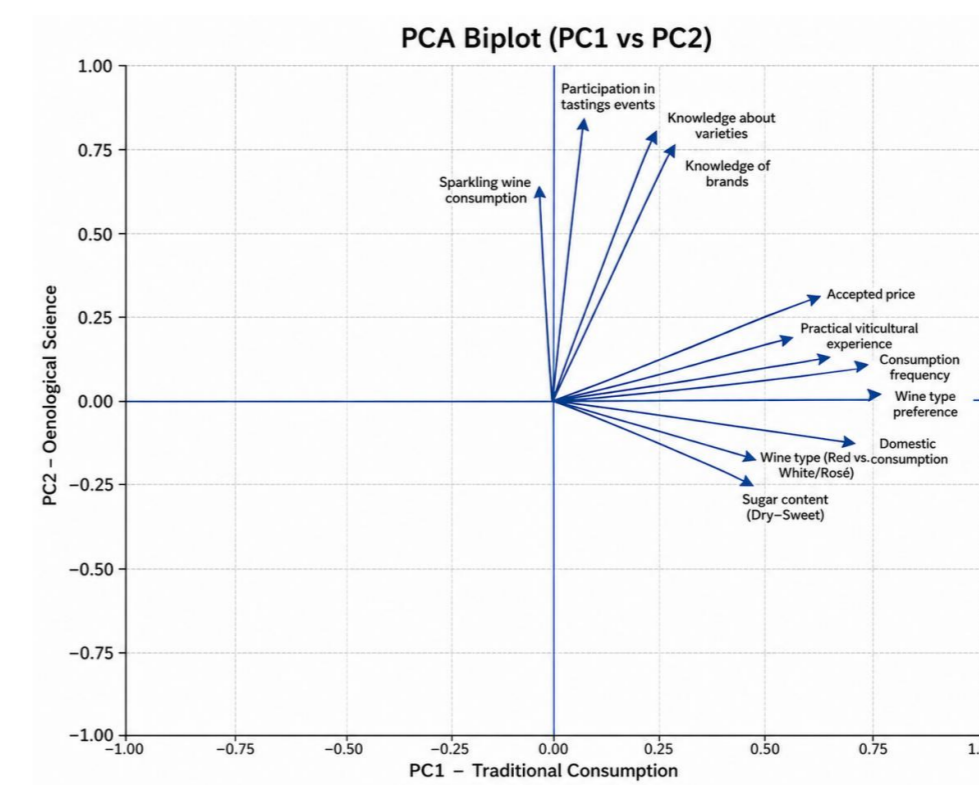


Fig. 1. PCA biplot for the relationships between variables and principal components (PC1 and PC2). PC1 reflects traditional consumption patterns, while PC2 captures oenological knowledge and openness.

In the first quadrant I (PC1+, PC2+) are illustrated the results for informed consumers which prefer the wine of average price and with knowledge about varieties and brands. They are consumers who combine tradition with a certain level of oenological education (represents a small sample).

Quadrant II (PC1-, PC2+) includes educated but non-traditional consumers who participate in tastings, enjoy sparkling wines, and have diverse tastes. It is a minority sector distinguished by openness and curiosity but without a firm foundation in traditional consumption.

In Quadrant III (PC1-, PC2-), weakly involved consumers are characterized by non-consumption or exceptionally rare consumption, as well as low level of knowledge (represents passive or indifferent consumers about wine). Quadrant IV (PC1+, PC2-) illustrates the results for traditional consumers (dominant) about home consumption, practical experience, taste for red wine, and occasional frequency consumption. This is the sample's dominant group, representing pragmatic consumers who appreciate routine, tradition and have a low level of academic oenological education.

Variables such as "knowledge about varieties", "tastings", and "brands" are strongly associated (near vectors) and define the educational dimension. "Consumption at home," "frequency," and "wine preference" are all clustered, indicating a consistent and customary habit. "Consumption of sparkling wines" is PC2-oriented, as it is connected with curiosity rather than normal behavior.

Sensory factors (sugar, wine type) have distinct directions, reflecting the variety of individual preferences.

The PCA biplot (PC1-PC2) shows a concentration of respondents in the traditional consumption area, which is defined by moderate frequency, a preference for red wines, and mainly consumption at home, while the educational component (participation in tastings and oenological knowledge) is limited. The findings show a constant consumption pattern with limited possibility for diversification.

Conclusions

The analysis of the survey data shows the existence of a distinct and uniform profile of wine consumption among military personnel, defined by moderation, pragmatism, and devotion to tradition.

The sample's demographic structure, characterized by males aged 31 to 50 with stable careers and consistent income, explains balanced and careful spending behavior. Wine drinking is not daily, but rather occasional and social, occurring within particular situations, especially in the family environment. This aspect reflects both the distinctive nature of the military profession and conformity to institutional standards, physical and mental health criteria.

Wine is the favorite alcoholic beverage of military personnel, but the low frequency of drink indicates a cultural and symbolic link with this product rather than a regular consumption. The predilection for red wines, as well as semi-dry and semi-sweet types, suggests a type of consumer who values sensory comfort and balance, has average oenological knowledge, and is reticent to try more complicated or unconventional styles. The desire to pay, in the range of 50-100 lei/bottle (10-20 Euros), indicates a reasonable consumer who is concerned about the quality-price ratio and is not just looking for low-cost products, but neither for luxury wines. The decision is motivated by tradition, popularity, and prior pleasant experiences, rather than a desire for status or curiosity. The majority's preference for Romanian wines emphasizes the value of economic loyalty, family tradition, and relationships with local producers. Popular brands that are widely recognized and easily available have the most visibility, whereas premium or exclusive wineries are less well-known. Common confusion between brands, varieties, and regions indicates a gap between real viticulture expertise and proper oenological knowledge.

Although a substantial number of respondents have practical knowledge of grape growing and wine making in their households, poor involvement in organized tastings and a low level of interest in technical or specialized information restrict the extent of wine knowledge. In this context, wine is considered as a food and conventional product, rather than a cultural or experimental good. Overall, military personnel appear to be loyal, conservative, and trusting consumers, with great potential for Romanian wineries that provide economical, balanced, and authentic wines.

Marketing strategies for wineries addressing this consumer category, which is represented by military personnel, should focus on semi-dry/semi-sweet Romanian wines; they should rely on tradition, reliability, and uniform quality, supplemented by specific topic-specific tastings and moderate educational programs aimed at developing oenological traditions without creating an elitist image. The PCA analysis reveals that a conventional consumption pattern is predominant, with modest frequency, a preference for dry wines, and a focus on domestic consumption. The educational component is poorly represented, indicating a shortage of oenological knowledge and a limited desire to diversify. The variety of sensory preferences has a secondary role in the overall behavioral model.