The Croatian consumer responses to the European GIs scheme of wine labeling

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Abstract

The EU GI scheme has enabled Croatian producers to new creative marketing, increasing label diversity. The aim of this study is to explore consumer attitudes toward the Traditional terms and the PDO/PGI terms implemented in wine labeling after Croatia's access to the EU. The results of 428 wine consumers' questionnaires were analyzed regarding age, gender, and subjective knowledge. The awareness of the meaning of PDO/PGI and certification differ among consumers; women and younger demonstrated a lower understanding of new labels. Understanding Traditional terms is much better, but younger are less familiar with their qualitative meanings. Trust in the labels significantly increases with age. Attitudes toward the PDO/PGI and Traditional terms with respect to age and gender do not significantly affect behavior in wine purchases. Whether buying wine for themselves or as a gift, consumers have similar approaches to these labels, indicating the deep and strong influence of inherited tradition. However, the importance of PDO differs significantly depending on subjective knowledge. The research findings signal the need for consumer education and promoting the PDO's meaning and value.

Keywords*: PDO/PGI, Traditional terms, Attitudes, Trust, Wine, Croatia.*

1. Introduction

A long tradition and importance are attributed to the European Geographical Indication (GI), delineating Burgundy wines in the fifteenth century as the first GI in history (Meloni and Swinen, 2018). Moreover, the history of the area's recognition and connection with wine quality is much older, with the worthwhile example of Falerno in Italy. The area and the wine Falerno from Roman times are described as famous throughout the Roman Empire because of its quality, and interestingly for us, Pliny demarcated its production area (Fairbank, 2012). Different authorities have been involved with this issue from the beginning, and according to the analysis (Sylvander *et al*., 2006; De Filippis *et al.*, 2022), they have had different objectives over time but always had a direct impact on economic indicators of success. In addition to Geographical Indications, the characteristics and quality of products can also be described and implied by other declared information based on external standards and producers' perceptions. Therefore, the significance of labels and label traceability of properties is understandable.

The European Union's wine sector uses a Geographical Indications scheme (GIs) that includes Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI),

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along with additional labels like Traditional terms (TT) or other supplemental terms. The objectives of this scheme include ensuring fair competition for farmers and producers, respecting intellectual property rights, maintaining the integrity of internal markets, developing and protecting rural areas, and ensuring consumer safety through reliable and transparent information (Regulation (EU) No 1151/2012). Espejel *et al.* (2011) obtained that this system is a distinctive and recognizable way to display wine's specific and intrinsic characteristics, helping consumers choose wine more confidently. The PDO label entails a certification process based on qualitative criteria (specifications) and protocol of wine compliance control with ecological and oenological conditions and chemical and sensory properties. The TT label should also guarantee production, specific maturation methods, or other quality aspects. The certification process to obtain PDO/TT is regulated by EU and national regulations, and grape and wine production must be controlled by authorities or authorized bodies that verify compliance with corresponding PDO specifications. In addition to the GIs protected names in the wine sector, it is possible to use a graphical symbol (logo) of PDO or PGI (https://www.europeantreasures.eu/index.php/en/pdo-pgi-2), which serves as an additional tool for visual communication in the market.

This formal system has been created as a beneficial tool for consumers to recognize quality and confidently purchase. It helps strengthen the competitiveness of food products in the global market. This system also serves as a form of protection for the concept of terroir and is a foundation for local, sustainable development (Belletti *et al*., 2017). Specifications of wine GIs are gradually becoming indicators and substitutes for the intrinsic attributes of products related to quality, safety, and authenticity, thereby becoming tools in purchasing decisions (Garavaglia *et al*., 2017; Costanigro *et al*., 2019). Stricter regulations and GIs, especially PDO in combination with TT, also have legal implications related to trust in labeling. However, most consumers have basic and inadequate knowledge of the certification system, and the existence of bodies responsible for food safety and trust in them varies (de Jonge *et al*., 2008; Latvala, 2010; Likoudis *et al*., 2015). Deselnicu *et al*. (2013) demonstrated the importance of the institutional framework for geographical origin labels: in the same country, products with higher quality standards, such as PDO, receive higher premiums than those with less stringent requirements (PGI). They also showed that stricter standards signal more significant benefits for consumers regarding food safety, quality assurance, and a stronger connection to culture or heritage, encouraging a greater willingness to pay higher prices for more strictly regulated products. Trust in certification labels is also associated with the credibility of control bodies or companies in the control chain (Sirieix *et al*., 2013). Uysal *et al*. (2013) found weaker trust in private ecological labels than in government labels. However, other researchers found opposing views (Padel and Foster, 2005; Eden *et al*., 2008).

Rupprecht *et al.* (2020) concluded that understanding of labels varies from country to country. In Japan, the USA, and Germany, the highest trust is placed in expert labels (data from expert and scientific sources), while in China and Thailand, expert labels are ranked second after government/administrative labels. These results are based on an online survey of 10,000 consumers from five countries and four types of food (milk, honey, oil, and wine). Trust in independent expertise and science underscores the importance and value of scientific research in food quality and safety. In recent times, the effectiveness of such wine labeling concepts has been called into question. According to Leufkens (2018) and Hinchliffe (2019), it is generally complex and heterogeneous, requiring a significant level of consumer awareness to be meaningful regarding consumer protection. In addition to the considerable increase in the global supply of wine, the proportion of inexperienced consumers is also growing, as Morrison and Rabellotti (2017) indicated. New generations of potential consumers rely on online information and perceive online reviews as informative, entertaining, credible, and valuable (Bevan-Dye, 2020). New approaches to consumer education about product value, such as nutritional informing or sustainability (Belharar and Chakor, 2023; Mesias *et al*.,

2023), are increasingly intriguing and can influence the importance of the current GI labeling system. Giacomara *et al*. (2020) systematically analyzed published research between 2009 and 2019 on the impact of geographical indications on consumer behavior. They concluded that consumption patterns and new consumer profiles are changing the significance of geographical factors. Their results and the results of some other authors (Ferreira *et al*., 2020) suggest the need for the engagement of wine industry managers to acquire more knowledge about consumer profiles on a global scale for marketing activities related to labeling and advertising strategies. This highlights the importance of adapting to the wine industry's evolving consumer preferences and behaviors.

In Croatia, the EU wine scheme of Geographical Indications has been used since 2013. The concept of "Protected Designation of Origin" (PDO) qualitatively differs slightly from the "Controlled Geographical Origin" (KZP) label that has been used for decades and was associated with the mandatory labeling of the most important quality labels, "Kvalitetno" and "Vrhunsko." These quality designations have become traditional terms, "Vrhunsko vino KZP" and "Kvalitetno vino KZP." Criteria for PDO labeling have been changed and simplified according to the EU regulations. National standards for acquiring the right to use Traditional terms have remained the same as those before Croatia acceded to the EU. However, their use has become optional (Regulation (EU) No. 1308/2013). This optional model has allowed the diversity of wine labels in the market, and it is questionable to what degree consumers are informed about these changes. The symbol (logo) of PDO in wine labeling is not used the same way as with other food products.

Given that wine labeling and marketing use different attributes and information that influence wine choice, questions arise about Croatian consumers' level of awareness and perception regarding geographical indications in the new circumstances. Research is outdated (Čačić *et al*., 2011) or specific in relation to interest, region, or designation (Cerjak *et al*., 2016). Some authors have discussed the importance of geographical indications in food production in general (Brečić *et al*., 2019). However, there is no information and studies regarding the understanding and awareness of the new wine GI scheme in Croatia after its accession to the EU. The value and stability of such a system depend on its recognition in the market, considering that consumers are increasingly analyzing various aspects of product quality with an emphasis on food safety (Bouranta *et al*., 2022). There is a growing number of producers who want to brand their wines in some other way, without PDO or PGI labels, and there are no available studies on what consumers in Croatia know about GIs or wine branding. The Croatian market is flooded with a variety of wines, each with different branding approaches, and consumers need assistance in understanding labels just as much as producers need help in creating informative tools. Understanding how labeling information influences consumer perceptions of a wine's quality and value is crucial for product management, choice of marketing strategies, and maintaining a competitive position.

The aim of this study is to assess Croatian consumers' comprehension and trust in the European Geographical Indications (GIs) scheme for wine labeling following Croatia's accession to the EU, as well as to examine the influence of familiarity with the new labeling system on the importance of various factors in wine selection. The key research questions included: Do wine consumers understand the significance of PDO (Protected Designation of Origin)? How crucial are national quality categories that have become traditional terms under the new system of optional use? Do consumers truly grasp the meaning of certification? The results of the research will provide an original contribution to understanding the current wine market in light of new creative labeling possibilities. The findings of this study will aid all stakeholders in the production-consumption chain in ensuring product competitiveness and consumer protection.

The paper is structured into four parts. The first part consists of the introduction and literature review. The second section outlines the official methodology, including the survey and questionnaire design, as well as the respondents'

main characteristics and their wine habits. The third section presents the results and discusses their implications. The final chapter summarizes the main conclusions and offers recommendations for future research.

2. Methodology

2.1. *Sample and data collection*

The research was conducted through a survey using a pre-prepared questionnaire. The questionnaire consisted of three groups of questions: socio-demographic information and consumer habits, attitudes regarding the importance of different attributes in wine purchasing measured by a Likert scale, and a group of questions about the understanding and trust in wine geographical indications PDO and PGI and Traditional terms "Kvalitetno vino KZP" and "Vrhunsko vino KZP" expressions. The Likert scale was designed with marks from 1 to 5, where a mark of 1 represented the lowest level of importance and a mark of 5 the highest. The questions regarding labeling understanding and trust provided three possible answers, from which respondents were required to select only one. Depending on their chosen answer, respondents were categorized into three clusters: consumers with a lack of knowledge, consumers who are uninformed but have some assumptions about knowledge, and consumers who are confident about their knowledge. In subsequent analysis, the collected data were utilized to examine the significance of differences between clusters concerning topic questions and factors of research interest, such as gender and age. There was also a question related to wine-purchasing behavior for gifts and personal consumption, structured similarly with provided options for responses and the possibility to specify personal factors.

The survey was conducted online and in person at a large supermarket during the winter and spring of 2019. Online participation was available for a period of four months, while in-person surveys were conducted over two weekends. Questionnaires from respondents who were not wine consumers or did not respond to thematic questions were excluded from the data analysis (constituting 8% of the total responses). The representative sample for statistical analysis comprised 433 responses. The representation of participant groups based on variables age and gender is shown in Figure 1. Age groups were based on the definition and periods of adulthood (Levinson, 1986), with a specific modification. In this analysis, two of Levinson's age groups (45-65 and 65+) were combined, assuming no significant changes in knowledge about wine during this life period. According to Levinson, adulthood begins at 22, but we adjusted this boundary to 18 when the consumer's right to purchase alcohol in Croatia begins. A more comprehensive sample description, including data about the respondents and information about their wine culture is given in the paper by Alpeza *et al.* (2023).

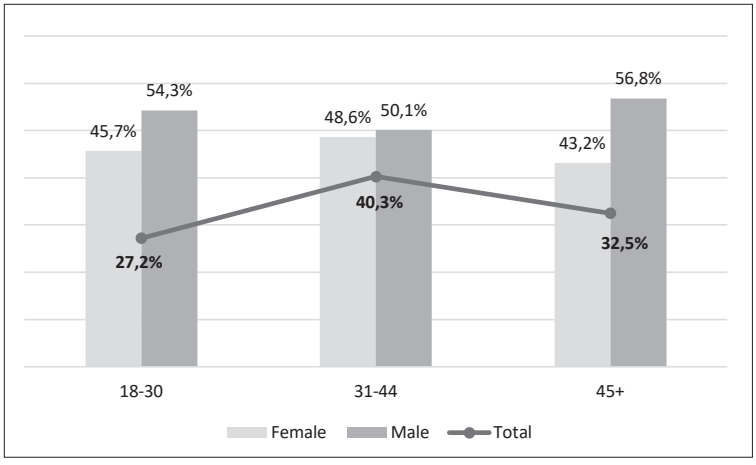

Figure 1 - Age and gender analysis of the sample.

Remark: The difference between the 100% and the percentages shown in Figure 1 pertains to respondents who did not declare their gender.

2.2. *Data analysis methods*

Descriptive statistics and methods for analyzing significant differences commonly used in survey analyses were used in data analysis. Before choosing the method, the sample's compliance with a normal distribution was tested using Kolmogorov-Smirnov (K-S) and Lilliefors tests. Both methods are widely used in statistical analysis to assess the assumption of normality, a prerequisite for many parametric statistical tests. The null hypothesis of the K-S test is that the sample is drawn from a population that follows a normal distribution. Suppose the calculated p-value from the K-S test is more significant than the chosen significance level (usually $\alpha = 0.05$), we do not reject the null hypothesis. If the p-value is less than α, we reject the null hypothesis, indicating that the sample does not follow a normal distribution. The Lilliefors test is a modified version of the K-S test specifically designed to test normality. Like the K-S test, the Lilliefors test compares the empirical cumulative distribution function (ECDF) of a sample with the theoretical cumulative distribution function of the normal distribution (Corder and Foreman, 2014). Regardless of the tested variables, all samples deviated from a normal distribution. In further data analysis, the non-parametric Kruskal-Wallis test was employed. The Kruskal-Wallis H test, also known as the "one-way ANOVA on ranks," is a rank-based nonparametric test used to ascertain if there are statistically significant differences among two or more groups of an independent variable concerning a continuous or ordinal dependent variable. This test was deemed appropriate for our study, as previously outlined (Cliff *et al.*, 2016; Alpeza *et al.*, 2023). Given that each question on the study topics allowed for three possible answers, we categorized respondents into three clusters based on their opinions on specific issues. Consequently, this method was well-suited for testing hypotheses regarding cluster differences. The null hypothesis is rejected if the P-value is less than the chosen alpha level (typically 0.05), suggesting a statistically significant difference between at least two groups. In this study, we tested different clusters according to their understanding of PDO/PGI and Traditional terms variables to determine whether they differ significantly regarding the importance of the same variables as attributes in wine purchasing. Given that the questionnaire included a section regarding the importance of various factors in wine selection, it was important to assess whether different clusters, based on their understanding of the new PDO/TT labels, prioritize these factors differently. This analysis was extended to encompass other studied attributes of importance in wine purchase, including grape variety, vintage, country of origin, price, sugar content, wine color, brand, and bottle/label design. Conducting these analyses will facilitate a deeper understanding of how the attributes' positioning on the Likert scale differs between different clusters, taking into account their level of knowledge of the PDO/TT labels.

Statistical analysis was conducted using the Statistica version 12.0 statistical software package (TIBCO/StatSoft, Tulsa, OK, USA).

3. Results and discussion

The term "Protected Designation of Origin" (PDO) is relatively common in discourse, and the public is informed about the importance of geographical origin as well as of Croatian products that are eligible to use the PDO label. However, the wine sector is unique; the term PDO is the successor to the "Controlled Geographical Origin" (KZP) label that has been used for decades. In this context, it was expected that wine consumers would be acquainted with the meaning of this label. The consumers who respond to the questions with the answer "assume" can be described as those who know/do not know or are inconclusive or indecisive. Figure 2 graphically separates consumers into two large groups with a vertical line: those who understand the meaning of the PDO/PGI terms and those who do not. Those unsure about their knowledge can be described as consumers who equally understand and do not understand. Therefore, they are equally positioned in the area of expertise and the area of knowledge lack. The same graphical display was used to visualize the understanding of other topics in this study, and, even more important-

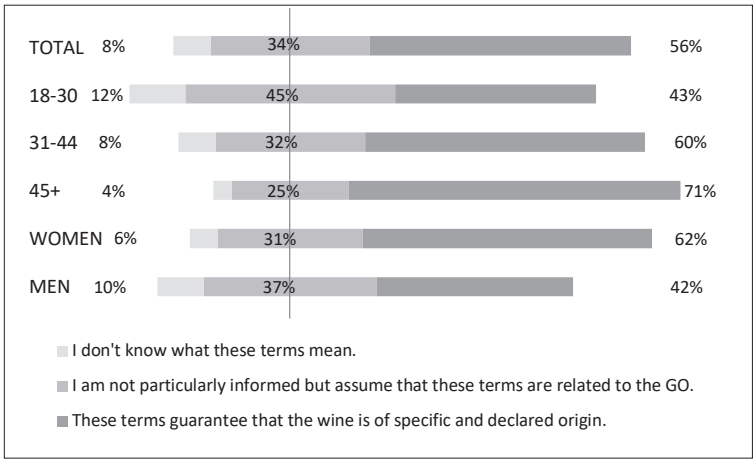

Figure 2 - Consumer understanding of the PDO/PGI terms.

ly, it allows fast comparison of the knowledge and attitudes (trust) about specific topics. A clear and practical example is the relation between TT knowledge and TT trust (Figure 4 and Figure 5).

The study has shown that six years after accession to the EU, 58% of Croatian consumers understand the concept of PDO, 8% are entirely unaware of the PDO label, and one-third of the participants assume its meaning (Figure 2). The wine market is faced with a lack of adequate communication regarding the new GIs' significance and value. Despite considerable public presentation and promotion about PDO and PGI in the food sector, for some reason, wine is very rarely included. Research has demonstrated the significance of these logos in identifying the product's origin and quality (Vecchio and Annunziata, 2011; Zisidis, 2014). Despite these findings, the possible importance of these logos is disregarded in wine label designs. Labels are generally content-complex; other EU countries have also maintained the tradition and traditional terms, and the logos are not presented on wine bottles. This is likely due to the long national tradition of regulated wine production and labeling, which leads to the assumption of understanding and objective knowledge on the topic.

Consumer awareness and understanding of Traditional terms (TT) are much better (Figure 5). In both cases, men are better informed than women, and the level of knowledge increases with years of experience. However, understanding the certification protocol for obtaining the right to use PDO and TT is relatively low. Knowing the definition and knowing the objective background are quite different. As many as 14% of respondents know

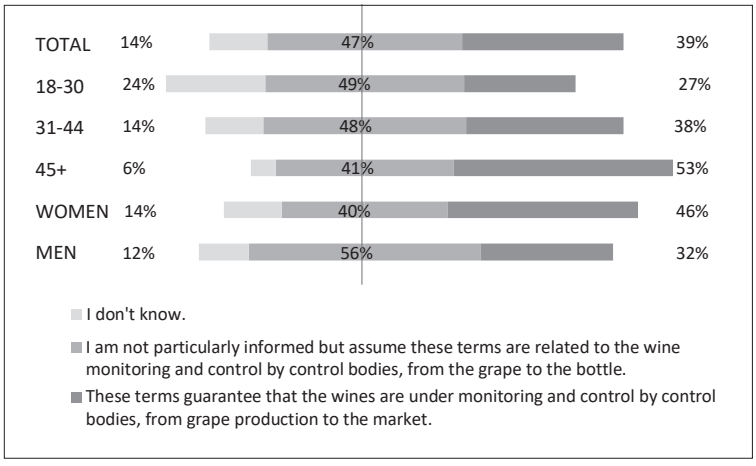

Figure 3 - Consumer understanding of the wine certification.

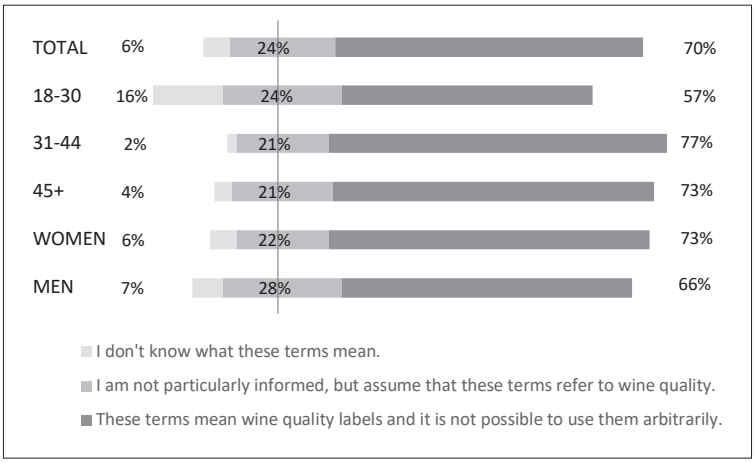

Figure 4 - Consumer understanding of the TT "Vrhunsko vino KZP" and "Kvalitetno vino KZP"

nothing about the independent institutional, systematic monitoring of grape and wine production, which is integrated into obtaining the right to use traditional terms in Croatia. 47% assume that some form of control exists, and only 39% of survey participants answered that they are familiar with the described system (Figure 4). Younger consumers are less informed than those with more experience. Women demonstrated indecisiveness about this topic; 56% assume what certification means, while only 32% truly understand what GIs entail. On the one hand, consumers express familiarity with the labels, but at the same time, they do not understand them as they should. This is a result of the enduring influence of tradition and upbringing, but this is likely to change with new generations due to the lack of proper communication.

In most cases, deciding on a particular purchase is conditioned by understanding the labels and the attitude toward the truthfulness of those labels and the quality. Personal experience influences attitudes that shape our trust in a product, and trust in the credibility gained by the proven and continuous product quality is ultimately more important to a consumer than how much she understands the declared information. Espejel *et al*. (2011) found that satisfaction and trust are the main drivers of consumers' commitment to PDO wine. People vary in their general tendency to trust; individuals with higher levels of social trust are expected to have more trust in the participants in the food supply system (Macready *et al.,* 2020). Therefore, consumers were asked about their trust in TT, and the results showed that the understanding was higher than

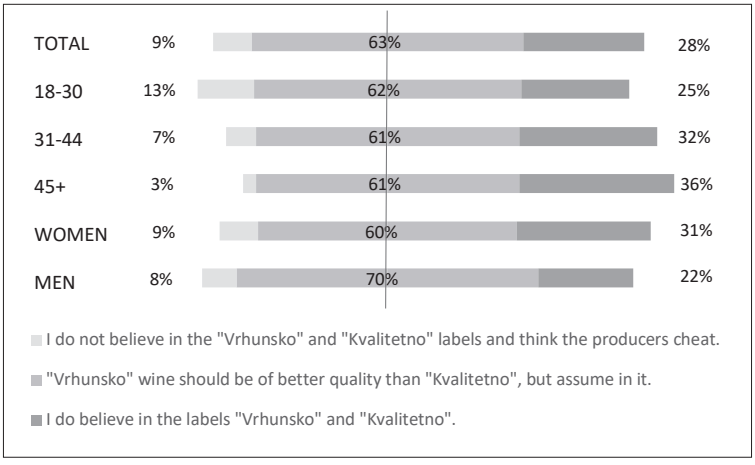

Figure 5 - Consumers trust in "Vrhunsko vino KZP" and "Kvalitetno vino KZP"

the trust level in those labels (Figure 5). While an approximately equal share of respondents does not understand nor trust TT labels, a third of participants have unconditional confidence in TT, which increases with age. Indecisive consumers who doubt the traceability of the label quality are similarly distributed across all age categories, and they are the majority. The downward trend of consumers' doubt with age is highly pronounced, with an R^2 coefficient of 0.9, indicating positive consumer experiences and the responsibility and seriousness of producers concerning these terms. Interestingly, women have more trust in these labels than men and express less doubt.

The questions related to wine-purchasing behavior for personal consumption and for gifts provided a deeper understanding of consumers' perceptions of labels. Specifically, the general assumption is that higher prices should signify higher wine quality, which, in turn, should result in higher subjective ratings (Mastrobuoni *et al*., 2014). We assumed that when choosing products for gifts, most consumers are willing to spend more money and aim for a higher expected quality. Therefore, this question served as an additional test of trust in labels. Among the offered answers and the opportunity to describe wine-purchasing behavior, 8.5% of respondents had a personal approach (online research, experience, recommendations, well-known brands). On the other hand, 17.6% of consumers considered price the key determinant in the purchasing process. The offered answer, "I read labels and choose based on Traditional terms, "Vrhunsko vino KZP" and "Kvalitetno vino KZP", was chosen by 73.9% of participants. Regarding the importance of parameters when purchasing gifts for wine, respondents could choose among offered answers (price, label of TT, price-TT ratio) or specify something personal. 13.3% chose price as the key element in their selection, 18.7% chose the "Price-TT ratio," and 52.2% the response "Kvalitetno/Vrhunsko" label, while the others (15.5%) sought and preferred various factors such as reputation, recommendations, online suggestions, personal experiences, and the preferences of the person. Consumers demonstrated greater sensitivity regarding their doubts while buying wine for a gift than purchasing it for themselves. Even when the price is a limiting factor, the consumers rely on TT as an indicator of better quality. The responses distributed in this way also offer an interpretation regarding consumers who doubt the truth of the declared TT (Figure 5). Although the majority expressed doubts about TT, the majority cared mostly about TT when choosing a wine for a gift. We can conclude that consumers express natural suspicions, and there is no doubt that it results from bad experiences with wine. Otherwise, other attributes, rather than Traditional terms, would be more pronounced when choosing wine for a gift. These findings can be helpful in future market research and in devising production and marketing strategies because they differ from other authors who show a relevant heterogeneity among consumers' preferences for the gift-giving scenario in Italy, with Geographical Indication having a low impact and brand and organic claim playing a pivotal role (Boncinelli *et al*., 2019).

Every purchase involves risk, and consumers perceive different risks when choosing a particular product. The level of risk is a consequence of consumer uncertainty and depends on, among other factors, trust in a product and the perception of the truthfulness of declared information; the higher the doubt, the greater the risk. Since perceived risk affects the decision-making process when choosing a product, we must analyze whether consumers' perception of targeted attributes influences their importance in wine purchasing. Skepticism and doubt are particularly pronounced among consumers with negative product experiences. Therefore, we were interested in whether skepticism about the credibility of labels impacts their importance in purchasing. When respondents were grouped according to responses to questions about their understanding of PDO/PGI labels and Traditional Terms, the Kruskall-Wallis test identified statistically significant differences among consumer clusters regarding the importance of some of the studied attributes in wine selection, whose importance is previously presented (Alpeza *et al*., 2023). Consumer groups concerning the knowledge of PDO/PGI terms significantly differed in their attitudes regarding the importance of PDO/PGI labels, grape variety, vintage, and price. However, those clusters do not differ in their percep-

Table 1 - The influence of PDO/PGI understanding on attributes importance in wine purchasing.

	These terms guarantee that the wine is of specific and declared origin.			*I am not particularly informed, but I assume that these terms are related to the geographical origin.*			*I do not know what these terms mean.*			
	AS	*SD*	$\bar{R}$	*AS*	*SD*	$\bar{R}$	*AS*	*SD*	$\bar{R}$	*P-value*
Grape Variety	3,54	1,42	224,8	3,35	1,32	222,78	2,72	1,45	169,3	0,0027*
TT	3,39	1,38	232,5	3,49	1,19	236,72	3,08	1,44	201,7	0,3397
Country of origin	3,31	1,37	234,7	3,35	1,23	234,87	2,81	1,45	186,4	0,9890
Price	3,1	1,17	214,6	3,44	1,12	223,51	3,44	1,38	262,9	0,0034*
PDO	3,25	1,4	241,0	3,15	1,25	229,72	2,58	1,18	173,8	0,1450*
Color	3,08	1,36	229,3	3,13	1,32	234,38	3,14	1,27	235,4	0,9120
Vintage	3,07	1,31	246,2	2,71	1,29	210,93	2,5	1,13	190,7	0,0045*
Brand	3	1,26	239,3	2,8	1,16	218,7	2,78	1,29	216,4	0,2274
Design	2,8	1,18	224,6	2,88	1,11	233,9	2,97	1,3	246,4	0,5509

*Remark: AS: mean of group answers from Likert scale; SD: standard deviation; $\bar{R}$: average group rank in Kruskall-Wallis test. *: The group differ significantly at p <,050.*

tion of TT, which is an important finding (Table 1). Contrary to the aforementioned, consumers' knowledge of TT does not influence the PDO but influences TT's importance in wine purchasing. The importance of PDO in the purchase of wine is equally expressed in all clusters, which differ significantly regarding knowledge about TT, and it shows a discrepancy in the understanding of PDO and TT and their qualitative connection (Table 2). This unconsciously nurtured importance of TT and its influence on behavior was also recognized in other analyzed attributes. This cultural heritage and behavior is associated with knowledge gained from immersion in tradition and traditional culture. Other authors have also demonstrated the importance of cultural influence on wine selection behavior (Alonso, 2015; Lourenco-Gomes *et al*., 2015; Reinares-Lara *et al.*, 2023). Moreover, de Magistris *et al.* (2011), for example, demonstrated that culture and tradition have more substantial influence than generational belonging when analyzing the preferences of young Americans and Spanish. The group "uninformed" in our study is not worryingly large. However, it still signals a severe need for thematic education and info-campaigns about the new label, its connection with the former and traditional system, and its value.

Other authors have presented similar findings and trends regarding trust in declared GI labels. A study by a group of authors (Verbeke *et al.*, 2012) on European consumers' awareness of PDO, PGI, and TSG labels and their use in six European countries with 4828 survey participants confirmed higher awareness of PDO (68.1%) compared to PGI (36.4%) and TSG (25.2%). Awareness is higher among men and consumers over 50. Consumers believe these labels signal product quality: PDO labels signal better quality than PGI or TSG. Overall, differences in the importance of these three labels are minor, both in countries with a strong tradition of quality labels and those without such traditions in agricultural and food policies. Gracia and de-Magistris (2015) segmented Spanish consumers based on preferences for labels, with the most significant share belonging to the so-called "PDO lovers," who are primarily men, and their numbers increase with age, education level, and financial status. According to Borda *et al*. (2021), certified food gives Romanian consumers a general sense of trust, but consumers do not understand what certification entails. A recent study on the Italian market (Sampalean *et al*., 2021) has shown that Italian consumers' perception, awareness, knowledge, and consump-

Table 2 - The influence of TT understanding on the importance of wine purchase attributes.

	These terms mean wine quality labels, and using them arbitrarily is allowed.			*I am not informed, but I assume these terms refer to wine quality.*			*I do not know what these terms mean.*			
	AS	SD	$\bar{R}$	AS	SD	$\bar{R}$	AS	SD	$\bar{R}$	P-value
Grape Variety	3,55	1,38	224,6	3,18	1,41	209,5	2,76	1,35	169,1	0,0014*
TT	3,42	1,32	233,7	3,51	1,29	241,3	2,76	1,41	169,5	0,0255*
Country of origin	3,35	1,32	237,0	3,19	1,32	221,2	2,97	1,46	201,5	0,2457
Price	3,15	1,19	220,9	3,42	1,14	251,1	3,62	1,18	275,3	0,0175*
PDO	3,21	1,36	236,2	3,16	1,30	231,9	2,65	1,498	184,9	0,1292
Color	3,11	1,32	231,5	3,05	1,34	225,9	3,28	1,56	252,5	0,6203*
Vintage	2,94	1,30	233,4	2,87	1,25	227,3	2,62	1,50	202,8	0,4627
Brand	2,94	1,26	232,7	2,88	1,16	226,8	2,79	1,26	220,3	0,8371
Design	2,70	1,11	213,8	3,15	1,19	262,5	3,26	1,33	278,8	0,0003*

*Remark: AS: mean of group answers from Likert scale; SD: standard deviation; $\bar{R}$: average group rank in Kruskall-Wallis test, *: The groups differ significantly at p <,050.*

tion of products with EU quality labels have significantly increased. Participants were asked about the safety of food products with European quality certificates, given the assumption that certified products are safer. When asked whether they consider products with a PDO certificate to be safer than conventional products, 58% of respondents answered "Yes," 22% answered "No," and 20% answered "I do not know." The authors suggest the implementation of targeted informational campaigns and the promotion of the actual content of labels. According to the authors, these conclusions reflect consumer trust in product certification, highlighting the need to inform consumers about the true scope of certification continuously.

4. Conclusions

This study offers insights into wine consumer attitudes regarding the changed Geographical indication scheme after Croatia assessed the EU. It confirmed the need to analyze consumer attitudes toward new circumstances where Croatian producers can have different approaches in wine labeling since the Traditional terms "Kvalitetno vino KZP" and "Vrhunsko vino KZP" became an option. It has been found that the label's perception of Croatian wine consumers is influenced by cultural heritage, linked to the knowledge acquired from immersion in tradition and culture. Understanding national Traditional terms is better than understanding the new terms PDO/PGI, with consumers under thirty being more confused and less informed. With age, there is a notably high trend of increasing trust in declared Traditional terms, suggesting the credibility of labels and producer responsibility. Despite variations in attitudes based on age and gender, consumers exhibit a similar purchasing behavior pattern when buying wine for personal consumption or as a gift, placing emphasis on Traditional terms and Geographical indications. This underscores the significant cultural element and the impact of inherited tradition.The level of familiarity with the new GI scheme affects the importance of certain factors in the choice of wine. The consumers from the "uninformed" cluster differ significantly from others in their perception of the importance of not only PDO and TT attributes but also grape variety and vintage.

The results concerning the limited comprehension of PDO/PGI terminology and the im-

portance of wine GI certification highlight the need to enhance consumer awareness and education, particularly among younger consumers and women. It would be beneficial to explore possible tools and potential participants that can improve the visibility of information and the availability of knowledge about these topics to the average consumer. Understanding labels, primarily when related to objective, intrinsic attributes, can and should be a tool for consumers to use in wine selection. Consequently, labels and the entire system of Geographical Indications become purposeful, where producers, retailers, and consumers can recognize and obtain the associated benefits. The paper offers insights that can also be valuable in bolstering the search for marketing strategy tools, both institutionally and at the practical operating level.

The primary limitation of the study is that the majority of participants were from the capital city, Zagreb. It is necessary to note that Zagreb serves as Croatia's economic hub and has a significant proportion of highly educated individuals. Additionally, Zagreb has a substantial share of financially affluent citizens compared to other regions. Consequently, the understanding of the wine GI scheme and the new wine labeling model in Zagreb may differ from that in other regions of Croatia. Therefore, for future research, surveys should be conducted with proportional participation of citizens and consumers from all regions across Croatia to obtain a comprehensive understanding and perception of the traditions and the impact of the new wine labeling system in the Croatian wine sector.

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