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## **CONSUMER TRUST AND WILLINGNESS TO PAY FOR QUALITY LABELS IN THE AGRI-FOOD SECTOR: EVIDENCE FROM SERBIA**

**Abstract:** Quality labels represent an important instrument for strengthening consumer confidence and improving the market positioning of agri-food products. However, their effectiveness largely depends on consumer recognition and trust. The aim of this paper is to examine the relationship between consumer recognition of quality labels, trust in these labels, and willingness to pay a price premium for agri-food products in Serbia. Empirical research was conducted through an online survey. The collected data were processed using descriptive statistics and correlation analysis in order to identify relationships among the observed variables. The results indicate that higher recognition of quality labels positively influences consumer trust, while trust significantly increases consumers' willingness to pay a premium price for labelled agri-food products. The findings suggest that improving consumer awareness and credibility of quality certification systems may contribute to greater competitiveness and market differentiation of agri-food products.

**Keywords:** Quality labels; Willingness to Pay; Agri-food; Serbia.

## **1. INTRODUCTION**

In recent decades, globalization and the liberalization of agri-food markets have significantly expanded product availability, increasing competition and reducing the ability of consumers to differentiate products based solely on observable characteristics (Anderson, 2010). In such an environment, consumers are increasingly confronted with complex purchasing decisions, where product quality is not always directly verifiable prior to consumption. As a result, the role of information signals that reduce uncertainty and facilitate decision-making has become increasingly important. **Quality labels** represent one of the key mechanisms for addressing this issue, as they provide standardized and certified information about product attributes such as production methods, safety, environmental impact, and ethical standards (Velčovská & Sadílek, 2014).

The concept of food quality has evolved beyond traditional definitions based solely on physical and chemical properties. In the modern context, quality encompasses a broader set of attributes, including production processes,

sustainability, and reputation (Kaczorowska et al., 2021). Consequently, consumers increasingly rely on external cues, such as labels, to evaluate products and reduce uncertainty in purchasing decisions. However, the effectiveness of quality labels depends not only on their presence, but also on consumers' ability to recognize, understand, and trust them. Previous research indicates that labels can significantly influence consumer perceptions and behavior, particularly when they are perceived as credible and reliable (Grunert & Achmann, 2016; Thøgersen, 2023).

In the context of Serbia, where the agri-food sector plays a significant role in the national economy, understanding consumer perceptions of quality labels is particularly relevant. Despite the increasing presence of various certification systems, the extent to which consumers recognize and trust these labels, and how this affects their willingness to pay (WTP), remains insufficiently explored. Therefore, the **aim of this paper** is to examine the relationship between consumer recognition of quality labels, trust in these labels, and WTP for a price premium for agri-food products in Serbia.

This paper is structured as follows. The next section presents a review of the relevant literature. This is followed by the materials and methods section, which describes the research design, data collection, and analytical approach. The subsequent section presents the results and discussion. Finally, the paper concludes with key findings, implications, and recommendations for future research.

## 2. LITERATURE REVIEW

The role of quality labels in agri-food markets is closely related to the problem of information asymmetry. Many food attributes, including safety, production methods, certification standards, environmental performance, and compliance with specific quality requirements, are difficult for consumers to verify before purchase. For this reason, labels and certification schemes have been widely analysed as instruments that transform credence attributes into more visible market signals. Caswell and Mojduszka (1996) argue that informational labelling can influence food markets by improving the communication of product quality, while Grunert (2005) emphasizes that consumer demand for quality and safety depends not only on objective product characteristics, but also on consumers' interpretation of available product information. In this sense, quality labels are not merely promotional elements, but mechanisms through which certified information is communicated to consumers.

Previous research shows that quality labels may contribute to product differentiation, but their effectiveness depends on the extent to which consumers are familiar with them and understand their meaning. Grunert and Achmann (2016), in a review of consumer reactions to European Union (EU) quality labels, show that these labels are generally associated with positive product perceptions, but that their market impact is often limited by low or moderate consumer awareness. Similarly, Velčovská and Sadílek (2014) find that quality labels can influence consumer behaviour, although their relevance in purchasing decisions depends on consumers' knowledge and previous exposure to such labels. This suggests that recognition is a necessary condition for the functioning of quality labels, but that visual recognition alone does not guarantee behavioural effects.

A separate stream of literature focuses on certification labels as signals of controlled and verified product attributes. Kaczorowska et al. (2021) show that certification labels can shape consumers' perception of food quality, especially when consumers associate them with clearly defined standards and reliable control. Janssen and Hamm (2012), analysing certification labels in the organic food market, demonstrate that consumer responses differ across label types and that familiarity with the certification scheme plays an important role in consumer valuation. Although organic labels represent a specific category of certification, these findings are relevant for quality labelling more broadly, because they show that consumers do not react only to the presence of a label, but also to the perceived reliability of the certification system behind it.

Trust represents one of the key mechanisms through which quality labels may influence consumer behaviour. Since consumers are usually unable to verify certified attributes by themselves, the effectiveness of labels depends on confidence in the institutions, certification bodies, and control procedures that support them. Wu et al. (2021) emphasize that trust in food is formed not only at the product level, but also through confidence in actors within the food system. In the context of quality labels, this means that consumers must believe that the label is based on transparent standards and effective control. If consumers perceive weak regulation, insufficient monitoring, or a risk of misuse, the credibility of quality labels may be reduced, even when the labels are formally present on the market.

Empirical studies generally confirm that credible labels can generate a price premium, but the magnitude of this effect depends on the type of label, the product category, and the level of consumer trust. Loureiro et al. (2002) show that consumers may be willing to pay more for eco-labelled food products, while Van Loo et al. (2011) find that certified organic labels increase consumers' WTP for chicken breast. Van Loo et al. (2014) further show that different sustainability-related quality claims generate different levels of consumer valuation, indicating that consumers do not

treat all labels equally. Wongprawmas and Canavari (2017) reach a similar conclusion in the case of food safety labels, showing that consumers are willing to pay a premium when certification is perceived as reliable.

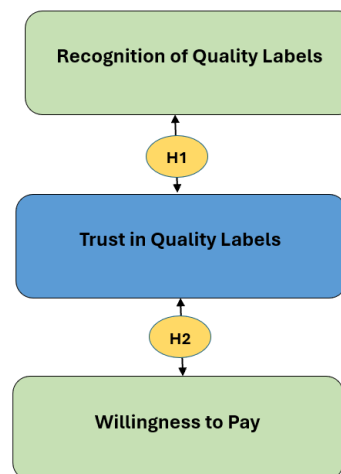
Recent review and meta-analytical studies also indicate that labelling effects are heterogeneous rather than universal. Bastounis et al. (2021) find that environmental sustainability labels generally increase willingness to pay, but that effects vary across products, label formats, and study contexts. Shangguan et al. (2018) similarly show that food labels can influence consumer behaviour, but only when consumers notice, understand, and use the information provided. These findings are important for quality labels because they suggest that the mere existence of labels is not sufficient; their effectiveness depends on the interaction between awareness, comprehension, credibility, and trust.

Overall, the literature suggests that quality labels can improve product differentiation and create additional market value, but only when consumers recognize them, understand their meaning, and perceive them as credible. However, empirical evidence on the relationship between recognition of quality labels, consumer trust, and willingness to pay remains limited in the Serbian agri-food market. Therefore, this paper examines whether higher recognition of EU and national quality labels is associated with stronger consumer trust, and whether trust is associated with a greater willingness to pay a premium price for quality-labelled agri-food products.

### 3. MATERIAL AND METHODS

The research aimed to examine the level of consumer awareness, perceptions, and attitudes toward quality labels applied to agri-food products. The empirical part of the research is based on a survey conducted in an online format in 2025. The sample consists of 100 respondents from the territory of the Republic of Serbia. The questionnaire consisted of 30 questions, divided into three segments. The first segment included demographic characteristics of respondents, such as gender, age, place of residence, and monthly income. The second segment referred to product-related perceptions, while the third segment focused on quality labels, including questions on recognition, sources of information, level of trust, WTP for a premium price, attitudes toward institutional support, and perceived risks of misuse. Participation in the survey was voluntary and anonymous, and respondents were briefly introduced to the concept of quality labels prior to completing the questionnaire.

The collected data were processed using Microsoft Excel and SPSS software. Descriptive statistics were used to analyze the socio-demographic structure of respondents and general trends in consumer perceptions. Correlation analysis was conducted to examine the relationships between key variables, with a particular focus on the relationship between recognition and trust in quality labels, as well as between trust and WTP for a premium price for products carrying such labels.



**Figure 1: Model design**  
**Source: Authors**

The analysis is based on the assumption that higher levels of recognition of quality labels are associated with higher levels of consumer trust, and that increased trust leads to a greater WTP for a premium price. The relationships between the observed variables are presented through a conceptual model based on correlation analysis. Figure 1 illustrates the assumed relationships between recognition of quality labels, trust in these labels, and WTP for a premium price. In order to conduct the correlation analysis, specific variables were defined and coded in Table 1.

**Table 1:** Variables used in the analysis

| Abbreviation | Description                                                      |
|--------------|------------------------------------------------------------------|
| PREP18       | Recognition of EU quality labels                                 |
| PREP19       | Recognition of national quality labels (Serbia)                  |
| POV24        | Trust in quality labels                                          |
| WTP21        | Willingness to pay a premium price for quality-labelled products |
| WTP22        | Willingness to pay a premium price (%)                           |

Source: Authors

The analysis of the collected data is based on testing the following hypotheses:

- H1: There is a statistically significant positive relationship between the recognition of quality labels and consumer trust.
- H2: There is a statistically significant positive relationship between consumer trust in quality labels and willingness to pay a premium price for products carrying such labels.

## 4. RESULTS AND DISCUSSION

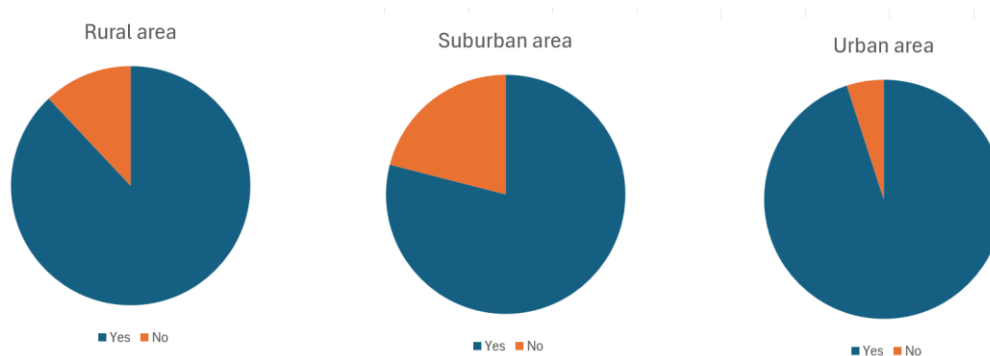
The socio-demographic structure of respondents is presented in Table 2. The sample consists of 100 respondents, with a slight predominance of female participants (58%), compared to male respondents (41%), while 1% of respondents did not specify their gender. The age structure is dominated by respondents aged between 18 and 30 years (69%), followed by respondents aged 31 to 55 (21%), while younger respondents under 18 account for 10%. There were no respondents older than 55. These results indicate that the findings primarily reflect the attitudes of a younger population segment. Regarding the place of residence, 44% of respondents live in urban areas, 42% in rural areas, and 14% in suburban areas, suggesting a relatively balanced spatial distribution of the sample. In terms of income, the structure of respondents is relatively evenly distributed. The largest share of respondents (35%) reported monthly income below 50,000 RSD, followed by 24% in the range of 50,000–80,000 RSD, 22% between 80,001–110,000 RSD, and 19% above 110,000 RSD.

**Table 2:** Socio-demographic structure of respondents

| Variable            | Category          | Number of observations (N) | Percentage (%) |     |
|---------------------|-------------------|----------------------------|----------------|-----|
| Gender              | Female            | 100                        | 58             | 58% |
|                     | Male              |                            | 41             | 41% |
|                     | Prefer not to say |                            | 1              | 1%  |
| Age                 | <18               | 100                        | 10             | 10% |
|                     | 18-30             |                            | 69             | 69% |
|                     | 31-55             |                            | 21             | 21% |
|                     | >55               |                            | 0              | 0%  |
| Place of residence  | Urban             | 100                        | 44             | 44% |
|                     | Suburban          |                            | 14             | 14% |
|                     | Rural             |                            | 42             | 42% |
| Structure of income | <50.000           | 100                        | 35             | 35% |
|                     | 50.000-80.000     |                            | 24             | 24% |
|                     | 80.001-110.000    |                            | 22             | 22% |
|                     | >110.000          |                            | 19             | 19% |

Source: Authors

In addition to the socio-demographic characteristics, the results provide further insight into respondents' perceptions of quality labels on agri-food products. The findings indicate a high level of awareness of quality labels among respondents. Specifically, 90% of respondents reported that they are familiar with some form of quality label, suggesting their strong presence in the market. Differences are observed across settlement types, with the highest level of recognition recorded among respondents from urban areas (95%), while suburban areas show the lowest level (79%) (Figure 2).

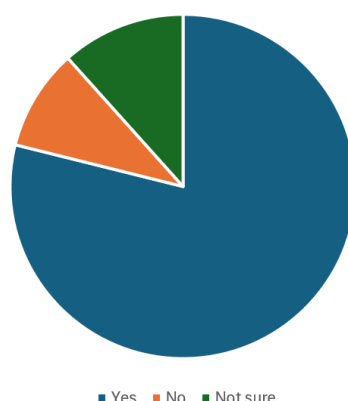


**Figure 2: Recognition of quality labels by place of residence**  
Source: Authors

Variations are also evident across age groups, as recognition of quality labels increases with age, indicating that older respondents are generally more familiar with such labels. Regarding sources of information, respondents most frequently identified product packaging (52.2%) and media (51.1%) as the main channels through which they obtain information about quality labels. In contrast, information provided within retail outlets was considered the least important source (17.8%).

Consumers' WTP for a premium price for quality-labelled products varies significantly. The largest share of respondents (24.2%) expressed their willingness by selecting level 5 on a scale from 1 to 6, indicating a moderate to high readiness to pay more for such products. However, opinions differ when it comes to the exact percentage of price premium consumers are willing to pay. Trust in quality labels appears to be relatively low. Only 6.3% of respondents stated that they have complete trust in quality labels, while 10.5% reported having no trust at all. These findings suggest that trust remains a key limiting factor in the effectiveness of quality labelling systems.

Furthermore, respondents emphasize the important role of public institutions in the development and functioning of quality label systems. A high level of agreement was observed with the statement that state support, through clear regulation, subsidies, and promotion is essential for the successful implementation of quality labels.



**Figure 3: Risk of misuse of quality labels**  
Source: Authors

Finally, a significant proportion of respondents expressed concern regarding the potential misuse or insufficient control of quality labels (Figure 3). This perception highlights the need to strengthen transparency and improve consumer education in order to enhance trust and overall effectiveness of quality certification systems.

In order to examine the relationships between recognition of quality labels, consumer trust, and WTP for a premium price, correlation analysis was conducted (Table 3). The results indicate a statistically significant positive relationship between recognition of quality labels and consumer trust. In the case of EU quality labels, a moderate positive correlation was identified ( $r = 0.508$ ,  $p < 0.01$ ), suggesting that higher recognition of these labels is associated with higher levels of trust among consumers. A similar, although weaker, relationship was observed for national quality labels ( $r = 0.386$ ,  $p < 0.01$ ).

**Table 3: Correlation analysis**

| Variables                        | Correlation type | Coefficient | N  |
|----------------------------------|------------------|-------------|----|
| POV24 – PREP18 (EU labels)       | Pearson          | 0.508**     | 74 |
| POV24 – PREP19 (National labels) | Pearson          | 0.386**     | 74 |
| POV24 – WTP21                    | Pearson          | 0.706**     | 95 |
| POV24 – WTP22                    | Spearman         | 0.506**     | 95 |

Note: \*\*Correlation is significant at the 0.01 level (2-tailed).

Source: Authors

Furthermore, the analysis reveals a strong positive relationship between trust in quality labels and WTP for a premium price. The Pearson correlation coefficient between trust (POV24) and WTP (WTP21) is  $r = 0.706$  ( $p < 0.01$ ), indicating that consumers who have higher levels of trust are significantly more likely to pay a higher price for products carrying quality labels. Additionally, the relationship between trust and the percentage of price premium consumers are willing to pay was examined using Spearman's correlation coefficient, due to the ordinal nature of the variable. The results show a moderate positive correlation ( $\rho = 0.506$ ,  $p < 0.01$ ), confirming that higher levels of trust are associated with a greater WTP for a higher price premium.

These findings confirm the proposed hypotheses. Specifically, H1, which assumes a positive relationship between recognition of quality labels and consumer trust, is supported. Likewise, H2, which assumes a positive relationship between trust and WTP, is also confirmed. Overall, the results highlight that while recognition of quality labels contributes to building consumer trust, it is trust that plays a decisive role in transforming this recognition into economic value, expressed through consumers' WTP for a premium price.

The results of this study indicate a clear discrepancy between consumer recognition and trust in quality labels. Although a high proportion of respondents (90%) reported being familiar with quality labels, the level of trust remains relatively low, with a significant share of respondents expressing concerns regarding their credibility. This gap suggests that recognition alone is not sufficient for ensuring the effectiveness of quality labelling systems, which is consistent with findings that consumers often recognize labels without fully understanding their meaning (Grunert & Achmann, 2016). Trust appears to be a key determinant of consumer behaviour. The high perception of the risk of misuse (78.9%) indicates that concerns related to insufficient control and transparency significantly affect consumer confidence. This supports the view that the effectiveness of quality labels depends on institutional credibility and the strength of certification systems.

Differences across socio-demographic groups further support these findings. Higher recognition among urban respondents (95%) compared to suburban areas (79%) suggests that exposure to information and product availability play an important role. Similar patterns have been identified in previous studies, highlighting that consumers' choices of quality-labelled foods depend on product-related information, familiarity with certification schemes, and the perceived value of labelled products (Menozzi et al., 2021). Consumers' WTP for a premium price for quality-labelled products is present but moderate. This suggests that, although consumers recognize the added value of such products, their readiness to pay higher prices is limited, which is in line with findings that perceived quality does not always translate into higher spending. The results of this research indicate that this limitation is closely linked to the level of trust.

In addition, the presence of multiple labels may contribute to consumer confusion, reducing their overall credibility. Previous research suggests that a large number of labels can lead to information overload and lower consumer confidence (Grunert & Achmann, 2016), which is consistent with the findings of this research. The role of the state is also emphasized as an important factor. Respondents highlight the need for clear regulation, control, and promotion, indicating that trust in quality labels is closely linked to institutional support. This supports the view that quality labels function not only as market tools but also as part of a broader regulatory system.

These findings are further supported by the correlation analysis, which confirms that trust plays a decisive role in influencing consumers' WTP for a premium price.

## 5. CONCLUSION

This research examined the relationship between consumer recognition of quality labels, trust in these labels, and WTP for a price premium for agri-food products in Serbia. The findings reveal a clear discrepancy between high levels of recognition and relatively low levels of trust, indicating that the mere presence of quality labels in the market is not sufficient to ensure their effectiveness. While recognition contributes positively to building consumer trust, particularly in the case of EU quality labels, the results demonstrate that trust is the key determinant that translates awareness into

actual economic value. The strong positive relationship between trust and WTP confirms that consumers are significantly more willing to pay a premium only when they perceive labels as credible and reliable.

The results further highlight the importance of institutional credibility and regulatory frameworks. A high perceived risk of misuse and insufficient control of quality labels negatively affects consumer trust, suggesting that transparency, standardization, and effective certification systems are essential for the functioning of quality labelling schemes. At the same time, the findings imply that improving consumer understanding of labels, rather than simply increasing their visibility, is crucial for strengthening their market impact. Overall, quality labels have the potential to enhance product differentiation and competitiveness in the agri-food sector, but their effectiveness depends on the level of trust they generate among consumers.

Despite these contributions, the research is subject to several limitations. The relatively small sample size and the dominance of younger respondents limit the generalizability of the findings. Additionally, the use of an online survey may introduce selection bias, while the reliance on correlation analysis prevents the establishment of causal relationships between variables. Future research should address these limitations by employing larger and more representative samples, as well as more advanced methodological approaches, such as regression-based or integrated choice and latent variable (ICLV) models. Further studies could incorporate additional determinants of consumer behaviour, including knowledge, risk perception, and trust in institutions, and explore differences across types of quality labels or between national and international contexts. Experimental approaches, such as discrete choice experiments or behavioural methods, may provide deeper insights into actual consumer preferences and WTP, thereby contributing to a more comprehensive understanding of the role of quality labels in modern agri-food markets.

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