CONSUMER PERCEPTIONS OF GEOGRAPHICAL INDICATIONS, BRANDING, AND INTELLECTUAL PROPERTY IN THE AGRICULTURAL SECTOR

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ABSTRACT

This paper examines the role of geographical indications and branding in shaping consumer perceptions of quality in agricultural products, as well as attitudes toward intellectual property protection. A quantitative survey was conducted through an online questionnaire in September 2025, involving 214 respondents from Serbia. Socio-demographic variables such as gender, age, education, place of residence, and frequency of agricultural product consumption were considered to account for differences in consumer attitudes. The results reveal generally low levels of support for geographical indications, branding, and intellectual property protection in agriculture, with mean values consistently below 3 across all measurement scales (ranging from 2.37 to 2.71). However, statistical test results showed that the frequency of consumption significantly influences perceptions of branding, while education and place of residence do not exert a significant effect. These findings provide valuable insights for producers and policymakers in strengthening branding strategies, safeguarding traditional products, and fostering sustainable rural development.

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Introduction

Agricultural production and export are the key drivers of economic growth in developing countries, including Serbia, as demonstrated by both economic indicators and prior research (Gollin, Parente, & Rogerson, 2002). With its abundant natural resources, the agricultural and food sector represents one of the most important pillars of the Serbian economy (Dašić, Stanić, & Živković, 2022). The recent upward trend in global food prices further underscores agriculture as a strategic opportunity for the country's long-term development.

One important instrument for strengthening the competitiveness of agricultural products is the system of Geographical Indications (GIs). GIs safeguard the names of products whose distinctive qualities, characteristics, or reputation are closely linked to their geographical origin. By preventing imitation and misrepresentation, they ensure that products maintain the high-quality standards associated with their place of production (Regolo, Gendre, & Poméon, 2025). In parallel, branding plays a complementary role by creating recognizable identities for agricultural products, differentiating them in competitive markets, and fostering consumer trust and loyalty (Latinović, Ostojić, & Bugarčić, 2023). Strong brands not only communicate quality but also add symbolic value that can influence purchasing decisions (Guenzi & Troilo, 2007). Research confirms the relevance of GIs for consumer perception: Arroyo et al. (2020) found that GI labeling significantly increased consumer acceptance of aromatic rice, particularly among those who valued state-of-origin information. The study also showed that sensory attributes, such as flavor and sweetness, were rated more favorably when GI labels were present. From the producer perspective, Maina et al. (2018) demonstrated that while tea and coffee producers recognize the benefits of intellectual property (IP) protection, they also face challenges such as limited awareness and inadequate resources, which hinder effective use of these instruments.

Against this backdrop, this paper examines the role of geographical indications and branding in shaping consumer perceptions of agricultural product quality, as well as the broader importance of intellectual property protection for enhancing competitiveness and safeguarding the authenticity of domestic agricultural production. The paper aims to explore how consumers perceive geographical origin and branding as indicators of quality, their willingness to pay a premium for products with protected origin or established brands, and their attitudes toward legal protection of agricultural goods.

This paper fills a clear gap in the Serbian literature by jointly examining geographical indications and commercial branding as complementary instruments for signalling quality — and by linking those signals to both consumer willingness-to-pay and the institutional / legal awareness that enables effective legal protection. While recent Serbian studies document consumer knowledge and attitudes toward GIs (Ćirić et al., 2023; Jovićević Simin & Živkucin, 2021; Užar, 2022) and separate papers examines branding or trademark use in the agro-food sector, these streams remain fragmented — there is limited empirical research that simultaneously (1) compares consumer responses

to protected-origin labels versus branded products, (2) measures willingness-to-pay differences between these signals, and (3) relates consumer and producer behaviour to the practical functioning of Serbia's IP/GI institutional framework. Addressing this combined consumer–branding–institutional perspective is important because policy and marketing interventions will be more effective only if grounded in evidence about how Serbian consumers perceive and monetise origin signals and how producers navigate the legal infrastructure that supports protection and enforcement.

The significance of this research lies in its potential to generate insights that are valuable both for producers and policymakers. Findings can inform the design of more effective branding strategies, strengthen the market position of domestic producers, and contribute to the preservation of traditional and local products. Moreover, the results may support improvements in the legislative and institutional framework governing intellectual property protection in the agricultural sector. Finally, the relevance of this study is heightened by current trends in agricultural production and trade, where consumers increasingly prioritize authenticity, origin, and sustainability. In the context of globalization and intensifying competition, the protection of geographical origin and the development of strong brands emerge as essential tools for product differentiation, preservation of competitive advantage, and sustainable rural development.

The paper is structured as follows. The first section outlines the theoretical framework and development of hypotheses, emphasizing the importance of geographical indications, intellectual property rights, and branding. The second section presents the research approach and methodology, followed by the third section, which reports the empirical results. The fourth section discusses the findings in light of the tested hypotheses. Finally, the conclusion highlights the key implications of the study, acknowledges its limitations, and offers directions for future research.

Theoretical framework and hypotheses development

The origin of agricultural products has become a crucial element in shaping consumer preferences, particularly through labels such as Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), Traditional Speciality Guaranteed (TSG), and organic certification (Katerinopoulou et al., 2020). These designations not only highlight unique qualities linked to specific regions or production methods but also contribute to building consumer trust and strengthening rural economies. Ensuring the integrity of such products, however, demands strict quality standards and effective protection against unfair practices.

A Geographical Indication (GI) is a designation applied to products whose characteristics, quality, or reputation are essentially linked to their place of origin (Amilien & Moity-Maïzi, 2019). Beyond identifying geographic provenance, GIs function as markers of quality and authenticity, carrying both significant economic potential and cultural value (Luković et al., 2023; Pantović et al., 2023; Zhao et al., 2022). GI is especially important to development of rural areas, especially in Serbia (Dejanović, Lukić Nikolić

& Ljubojević, 2024). It acts as a signal of quality and reputation, it links products with their regions of origin and consumers, thereby simplifying consumer choices, increasing product demand, and strengthening market bargaining power (Voza & Fedajev, 2020; Xu, Feng, & Wei, 2022). As living standards rise and product quality varies, GIs—often perceived as indicators of high quality—gain popularity and establish a recognized reputation among consumers (Šapić et al, 2018; Zhang, Sun, & Zhang, 2023). With today's advanced communication technologies, information about GI products spreads rapidly, and distribution is more efficient, enabling these products to access larger markets and support the development of regional brands (Zhang et al., 2022; Paraušić et al., 2025).

In line with these considerations, we propose the first hypothesis (H1): Consumer attitudes toward the geographical origin of agricultural products differ based on place of residence.

Intellectual Property Rights (IPR) in agriculture and food systems represent a complex framework of legal mechanisms designed to protect innovations and creative outputs within these sectors (Amentae, Song, & Wang, 2024). The governance of IPR does not occur in isolation but is strongly shaped by international organizations such as the World Intellectual Property Organization (WIPO), the World Trade Organization (WTO), and the Food and Agriculture Organization of the United Nations (FAO). These institutions influence IPR through international conventions, treaties, and regulatory frameworks, thereby defining standards and setting directions for national systems. At the same time, individual states remain responsible for developing and enforcing their own IPR regimes, balancing global obligations with domestic development priorities (Amentae, Song & Wang, 2024; Campi & Nuvolari, 2021). Agriculture significantly benefits from intellectual property developed in other industries. This cross-sectoral exchange accelerates agricultural progress beyond what could be achieved through internal patent activity alone, reflecting the inherently interdisciplinary character of many patents (Skawińska & Zalewski, 2018). In recent years, increasing attention has been directed toward advanced patentable technologies—particularly in biotechnology, nanotechnology, and digitalization—due to their growing significance for the agri-food sector (Barragán-Ocaña, Olvera-Treviño & Silva-Borjas, 2023). At the same time, consumers have become more informed and discerning in their choices of food and beverages. Enabled by new technologies, they now have easier access to comprehensive product information, which shapes their expectations and purchasing decisions (Labus & Lukić Nikolić, 2023). For decades, scholars and policymakers have debated whether IP and trade frameworks should prioritize stimulating innovation or safeguarding the fundamental right to food (Breining-Kaufmann, 2005; Gruni, 2018). At the core of this debate is food security, understood as the reliable availability of affordable, safe, and nutritious food that enables healthy and productive lives (Gallegos et al., 2023). IP regimes—especially those governing seeds, plant varieties, and biotechnology—can play a dual role: fostering agricultural innovation while potentially restricting equitable access to essential resources. These dynamics also raise questions of human rights,

sovereignty, and global governance. International legal frameworks, including human rights and environmental law, have been increasingly applied to examine agricultural governance and address persistent food security gaps (Sheehy & Chen, 2022). In developing countries, debates often emphasize sovereignty over agricultural resources, especially when IP protections conflict with practices such as seed sharing or the preservation of traditional knowledge systems (Adhikari et al., 2021).

Building on the role of IP in agriculture, the second hypothesis (H2) proposed in this paper is: The educational level of consumers positively influences attitudes toward the importance of intellectual property protection in agriculture.

The development of agriculture depends on the interplay of economic and sociological factors, with marketing emerging as a key driver—particularly in organic production, where the application of marketing models is considered a fundamental prerequisite for market visibility, product positioning, and overall success (Latinović, Ostojić, & Bugarčić, 2023). Innovation and market orientation are strongly interconnected, with market-oriented organizations often adopting innovative strategies (Ilić, Stanković, & Ostojić, 2024). Branding in the agricultural sector plays a pivotal role in enhancing product differentiation and signaling quality, authenticity, and trust to consumers. Recent studies emphasize that geographical indications (GI) contribute not only to protecting local traditions but also to stimulating agricultural development globally (Li et al., 2024). In addition to geographical indications, branding itself is a powerful tool for shaping consumer perceptions. Empirical evidence shows that brand trust significantly influences consumer behavior toward agricultural products, strengthening loyalty and willingness to pay for higher-quality goods (Liu & Wang, 2023). Similarly, research from Serbia highlights that consumer habits and attitudes toward GI products are closely tied to awareness of quality standards and regional authenticity, further reinforcing the strategic importance of branding in agriculture (Ćirić et al., 2023).

Reflecting these insights, the third hypothesis (H3) proposed in this paper is: The frequency of agricultural product consumption is associated with stronger perceptions of the importance of branding.

Materials and methods

Research design. Quantitative research design was employed to examine consumer perceptions of geographical indications (GI), branding (BR), and intellectual property protection (IP) in agriculture. Data were collected via a structured online questionnaire distributed during September 2025. The link to the questionnaire was disseminated broadly through voluntary response and snowball sampling: it was initially sent to a wide range of contacts without predefined selection criteria, and recipients were encouraged to forward the link to others in their networks. This approach allowed broad participation and facilitated access to a relatively large number of respondents in a cost-effective and time-efficient manner, particularly useful when targeting a dispersed population such as consumers of agricultural products.

Questionnaire. The questionnaire was structured into two main sections. The first section collected general socio-demographic data: gender (male/female), age (under 30, 31–40, 41–50, over 50), education (primary, secondary, higher education, master/specialist, doctoral studies), frequency of agricultural product consumption (daily, 2–3 times per week, once per week, 2–3 times per month), and place of residence (city or rural area). The second section assessed consumer attitudes across three domains using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree):

Geographical Indication (GI): authenticity, uniqueness of regional characteristics, ease of selection, willingness to pay a premium, and perceived impact of origin on quality. The statements used to construct this measurement scale are shown in *Table 3*.

Brand Recognition (BR): importance of branding in purchasing decisions, confidence in recognized brands, preference for traditional or regional brands, and preference for well-known agricultural brands. The statements used to construct this measurement scale are shown in *Table 4*.

Intellectual Property Protection (IP): legal protection of regional products, effectiveness of trademarks, usefulness of IP laws in preserving traditional products, need for producer investment in legal protection, and potential of IP to stimulate innovation. The statements used to construct this measurement scale are shown in *Table 5.*

Sample. The sample consisted of individuals who voluntarily completed the online questionnaire, ensuring participation by consumers interested in agricultural products. Socio-demographic variables included gender, age, education level, frequency of agricultural product consumption, and place of residence (urban or rural). These variables were incorporated to account for heterogeneity and potential demographic influences on consumer attitudes. A total of 214 respondents filled out the questionnaire.

Data Analysis. Data were processed using the Statistical Package for the Social Sciences (SPSS), version 21.0. Reliability of the measurement scales was confirmed by Cronbach's Alpha coefficient results presented in *Table 1*, with all coefficients exceeding the 0.70 threshold (DeVellis, 2003), indicating strong internal consistency.

Table 1. Cronbach Alpha coefficients

Scale	N	Cronbach's Alpha
Geographical Indication (GI)	5	0.893
Brand Recognition (BR)	4	0.904
Intellectual Property Protection (IP)	5	0.934

Normality of data distribution was examined through multiple procedures: Kolmogorov-Smirnov test, histogram inspection, skewness and kurtosis values, normal probability plots, and boxplots. Results indicated significant deviations from normality ($p = 0.000$), leading to the application of non-parametric methods. The Mann-Whitney U test was employed for comparisons between two groups, while the Kruskal-Wallis H test was applied for comparisons among three or more groups, using a 95% confidence level. Additionally, Levene's test confirmed homogeneity of variances across groups ($p > 0.05$).

Research results

Table 2 presents the basic information about the respondents who participated in this research. There is a relatively balanced gender distribution: 52.8% male and 47.2% female. In terms of age, the largest group of respondents was under 30 years old (29.0%), followed by those aged 41–50 (27.5%) and above 50 (26.2%), while 17.3% were between 31 and 40 years of age. Educational level was diverse, with most respondents having completed high school (35.0%) or a university degree at the bachelor's or master's level (33.3%). Smaller shares held a college degree (17.3%) or a doctoral degree (10.7%), whereas only 3.7% reported primary education. The majority of respondents lived in cities (63.1%), while 36.9% were from rural areas. Regarding consumption habits, 37.4% reported daily consumption of agricultural products, 26.6% consumed them two to three times per week, and 27.6% once per week, whereas only 8.4% consumed such products two to three times per month.

Table 2. Basic information about respondents

	Answers	**N**	**%**
Gender	Male	113	52.8
	Female	101	47.2
Age	Up to 30	62	29.0
	From 31 to 40	37	17.3
	From 41 to 50	59	27.5
	Above 50	56	26.2
Education	Primary School	8	3.7
	High School	75	35.0
	College	37	17.3
	University (bachelor and master studies)	71	33.3
	University (doctoral studies)	23	10.7
Place	City	135	63.1
	Rural area	79	36.9
Frequency of consumption of agricultural products	Daily	80	37.4
	Two to three times a week	57	26.6
	Once a week	59	27.6
	Two to three times a month	18	8.4

Source: Authors' calculations

Table 3 presents the responses to the statements in the measurement scale "Geographical Indication". The findings suggest a relatively low level of agreement with the positive statements regarding geographical origin, as reflected in mean values ranging between 2.44 and 2.68.

More than half of the respondents disagreed that products labeled with a geographical origin feel more authentic (54.7%) or that geographical labeling facilitates product choice (56.5%). Similarly, 59.8% of respondents disagreed with the statement that the place of origin has a direct impact on the quality of agricultural products, indicating skepticism toward origin as a determinant of quality. However, certain aspects of

geographical indications received comparatively stronger support. Almost one-third of respondents (30.8%) agreed that products from specific regions possess unique tastes or characteristics that cannot be easily replicated, while 27.1% stated that geographical origin information increases their willingness to pay a higher price.

Table 3. Results regarding the scale "Geographical Indication"

Statements	Answer	N	%	M	SD
Products labeled with a geographical origin (e.g., protected geographical indication) feel more authentic than others.	Disagree	117	54.7	2.61	1.280
	Neutral	48	22.4		
	Agree	49	22.9		
Indicating geographical origin makes it easier for me to choose a product.	Disagree	121	56.5	2.59	1.186
	Neutral	41	19.2		
	Agree	52	24.3		
I believe that products from certain regions have unique tastes or characteristics that cannot be easily replicated.	Disagree	107	50.0	2.68	1.340
	Neutral	41	19.2		
	Agree	66	30.8		
Information about a product's geographical origin increases my willingness to pay a higher price.	Disagree	105	49.1	2.59	1.366
	Neutral	51	23.8		
	Agree	58	27.1		
I believe that the place of origin has a direct impact on the quality of agricultural products.	Disagree	128	59.8	2.44	1.261
	Neutral	37	17.3		
	Agree	49	22.9		

Source: Authors' calculations

The results presented in *Table 4* reflect a moderate level of importance attributed to brand-related factors, with mean values ranging between 2.37 and 2.71, and a majority of respondents expressing disagreement across the statements. Specifically, 58.9% of respondents disagreed that brand plays an important role in their purchasing decisions, while only 26.1% agreed. Similarly, 61.2% disagreed that a recognizable brand increases their confidence in product quality, and just 25.2% agreed. When asked about preferences for brands that highlight tradition or regional connection, 57.5% of respondents disagreed, compared to 23.8% who agreed, indicating limited sensitivity to branding strategies that emphasize heritage. Finally, although over half of respondents (51.0%) reported not preferring well-known brands, about one quarter (24.2%) expressed a clear preference for them, with another 24.8% remaining neutral.

Table 4. Results regarding the scale "Brand Recognition"

Statements	Answer	N	%	M	SD
Brand plays an important role when I purchase agricultural products.	Disagree	126	58.9	2.50	1.335
	Neutral	32	15.0		
	Agree	56	26.1		
A recognizable brand gives me greater confidence in a product's quality.	Disagree	131	61.2	2.37	1.357
	Neutral	29	13.6		
	Agree	54	25.2		

Statements	Answer	N	%	M	SD
I prefer brands that highlight a connection to tradition or region.	Disagree	123	57.5	2.40	1.376
	Neutral	40	18.7		
	Agree	51	23.8		
I personally prefer to buy well-known brands of agricultural products.	Disagree	109	51.0	2.71	1.186
	Neutral	53	24.8		
	Agree	52	24.2		

Source: Authors' calculations

The findings in *Table 5* indicate generally cautious attitudes of respondents toward intellectual property (IP) protection in the agricultural sector. Across all statements, the mean values remain relatively low (ranging from 2.53 to 2.71), with disagreement prevailing as the dominant response.

More than half of the respondents (51.0%) disagreed that protecting geographical indications should be a priority in rural development policies, and a similar share (50.5%) did not view trademark registration as an effective means of protecting local producers from imitation. Likewise, 50.9% expressed disagreement with the idea that intellectual property laws play an important role in preserving traditional products. Nevertheless, certain responses suggest emerging awareness of the potential benefits of IP protection. Nearly one-third of respondents (29.5%) agreed that producers should invest more in the legal protection of their products, and 25.7% acknowledged both the role of trademarks in protecting local producers and the importance of IP laws in preserving tradition. Similarly, 25.7% agreed that IP protection could stimulate innovation in agriculture, although a majority (54.6%) disagreed.

Table 5. Results regarding the scale "Intellectual Property Protection"

Statements	Answer	N	%	M	SD
Protecting geographical indications should be a priority in rural development policies.	Disagree	109	51.0	2.71	1.186
	Neutral	53	24.8		
	Agree	52	24.2		
Registering a brand (trademark) is an effective way to protect local producers from imitation.	Disagree	108	50.5	2.68	1.234
	Neutral	51	23.8		
	Agree	55	25.7		
I believe intellectual property laws play an important role in preserving traditional products.	Disagree	109	50.9	2.61	1.261
	Neutral	50	23.4		
	Agree	55	25.7		
Producers should invest more in the legal protection of their regional products (e.g., GIs, trademarks).	Disagree	109	50.9	2.58	1.311
	Neutral	42	19.6		
	Agree	63	29.5		
Intellectual property protection can stimulate innovation in agriculture.	Disagree	117	54.6	2.53	1.345
	Neutral	42	19.7		
	Agree	55	25.7		

Source: Authors' calculations

To test the first hypothesis, a Mann-Whitney U test was applied, and the results are presented in *Table 6*. The analysis indicated no statistically significant difference in responses between respondents from urban areas (Md = 2.60, n = 135) and those from rural areas (Md = 2.20, n = 79), U = 5173.500, Z = -0.365, p = 0.715. This suggests that place of residence does not significantly influence consumer attitudes toward the geographical origin of agricultural products.

Table 6. Mann-Whitney U test results for H1 hypothesis examination

	Answers	**N**	**M**	**Md**	**U**	**Z**	**p**
Place	City	135	2.64	2.60	5173.500	-0.365	0.715
	Rural areas	79	2.49	2.20			

Source: Authors' calculations

Additionally, the Kruskal-Wallis H-test was applied to further examine the proposed hypotheses (H2 and H3), with results presented in *Table 7*. The analysis showed no statistically significant differences in responses across education levels, $\chi^2(df = 4, n = 214) = 8.377$, $p = 0.079$, indicating that the level of education does not significantly influence respondents' attitudes toward intellectual property protection in agriculture.

In contrast, the test revealed statistically significant differences in responses based on the frequency of agricultural product consumption, $\chi^2(df = 3, n = 214) = 28.737$, $p < 0.001$. This finding suggests that respondents who consume agricultural products more frequently tend to assign greater importance to branding compared to those with lower consumption frequency.

Table 7. Results of the Kruskal-Wallis H-test for H2 and H3 hypotheses examination

	Answers	**N**	**M**	**Md**	**χ2**	**df**	**p**
Education	Primary School	8	3.48	3.40	8.377	4	0.079
	High School	75	2.58	2.40			
	College	37	2.47	2.20			
	University (bachelor and master studies)	71	2.75	2.40			
	University (doctoral studies)	23	2.32	1.80			
Frequency of consumption	Daily	80	2.85	2.75	28.737	3	0.000*
	Two to three times a week	57	2.19	1.75			
	Once a week	59	2.05	1.75			
	Two to three times a month	18	3.35	3.50			

Source: Authors' calculations

Discussion of research findings

Table 8 presents the summary of the proposed hypotheses, the statistical tests applied, and the corresponding outcomes.

Table 8. Summary of hypotheses and statistical test outcomes

Hypothesis	Applied test	Result	Decision
H1: Consumer attitudes toward the geographical origin of agricultural products differ based on place of residence.	Mann-Whitney U test	U = 5173.500 Z = -0.365 p = 0.715	Not supported
H2: The educational level of consumers positively influences attitudes toward the importance of intellectual property protection in agriculture.	Kruskal-Wallis H-test	$\chi^2 = 8.377$ df = 4 p = 0.079	Not supported
H3: The frequency of agricultural product consumption is associated with stronger perceptions of the importance of branding.	Kruskal-Wallis H-test	$\chi^2 = 28.737$ df = 3 p < 0.001	Supported

Source: Authors' calculations

The results of hypothesis testing provide valuable insights into the role of socio-demographic and behavioral factors in shaping consumer perceptions of agricultural products. Out of the three proposed hypotheses, only H3 was supported, indicating that the frequency of agricultural product consumption is significantly associated with stronger perceptions of the importance of branding. In contrast, H1 and H2 were not supported, suggesting that neither place of residence nor educational level exert a statistically significant influence on consumer attitudes. The rejection of H1 indicates that consumer attitudes toward the geographical origin of agricultural products do not differ substantially between urban and rural respondents. These results challenge common assumptions that rural consumers, being closer to production and tradition, might attribute higher value to geographical origin. Instead, it suggests that perceptions of origin may be shaped more by individual preferences and market exposure than by geographical context.

Similarly, H2 was not supported, as educational level did not significantly affect attitudes toward the importance of intellectual property protection in agriculture. While higher education is often associated with greater awareness of legal and institutional frameworks, the results indicate that attitudes toward intellectual property protection are relatively uniform across educational groups. This could reflect limited public awareness of the practical implications of intellectual property rights in agriculture or the perception that such issues are distant from everyday consumer choices.

In contrast, H3 was strongly supported, with consumption frequency emerging as a decisive factor in shaping branding perceptions. Respondents who consumed agricultural products either on a daily basis or only a few times per month expressed higher appreciation of branding, compared to those with moderate consumption patterns. Respondents who consumed agricultural products daily (M = 2.85, Md = 2.75)

or two to three times per month (M = 3.35, Md = 3.50) demonstrated higher evaluations of branding importance compared to those consuming such products weekly (M = 2.05, Md = 1.75) or two to three times a week (M = 2.19, Md = 1.75). These results suggest a non-linear relationship: branding appears to be most valued among the most frequent and the least frequent consumers, while moderate-frequency consumers assign lower importance to branding. This suggests that both highly engaged consumers (who purchase daily) and selective, occasional consumers (who purchase monthly) rely on brand cues when making purchasing decisions—though for different reasons: the former due to habitual reinforcement, and the latter to reduce risk or ensure quality.

Overall, these findings highlight the complexity of consumer perceptions in agriculture. Whereas socio-demographic characteristics such as residence and education did not prove influential, behavioral patterns of consumption demonstrated a significant impact. This suggests that marketing and policy strategies aimed at strengthening branding and intellectual property protection in agriculture should place greater emphasis on consumer behavior and market engagement, rather than relying solely on socio-demographic segmentation.

Conclusion

The findings of this study in which participated 214 respondents from Serbia reveal a generally low level of consumer support for geographical indications, branding, and intellectual property protection in agriculture, as reflected in mean values consistently below 3 across all measurement scales (ranging from 2.37 to 2.71). Respondents expressed the greatest skepticism toward the role of branding in purchasing decisions (M = 2.37–2.71) and the impact of geographical origin on product quality (M = 2.44–2.68). Intellectual property protection was also viewed cautiously (M = 2.53–2.71), with more than half of respondents disagreeing with its importance for rural development or product preservation. Nevertheless, a notable minority—ranging from 25% to 30% depending on the statement—recognized the potential benefits of geographical indications, branding, and legal protection, indicating scope for targeted strategies that could enhance consumer awareness and strengthen the competitiveness of domestic agricultural products.

The findings regarding hypotheses indicate that the frequency of agricultural product consumption significantly influences the perceived importance of branding, while socio-demographic factors such as place of residence and education level have little impact on attitudes toward product origin or legal protection. This suggests that consumer behavior, rather than demographic characteristics, is a key driver in evaluating product quality and making purchasing decisions.

The findings of this study *contribute to the literature* by highlighting the weak signaling power of geographical indications, branding, and intellectual property protection in the Serbian context. Contrary to assumptions that these instruments universally enhance consumer trust and perceived quality, respondents reported consistently low levels of

support across all measures. This suggests that the effectiveness of institutional quality signals is highly context-dependent, particularly in transitional economies where consumer awareness remains limited. Moreover, the results show that consumption frequency, rather than socio-demographic factors, is the key determinant of attitudes toward branding and origin. This shifts the theoretical focus from demographic profiling to behavioral engagement, underscoring the importance of experiential variables in shaping perceptions of product quality. *From a practical perspective*, the findings indicate that neither legal protection nor brand labeling alone is sufficient to influence consumer choices in Serbia. Policymakers and producer organizations should therefore complement institutional frameworks with targeted awareness campaigns that communicate the benefits of GIs, branding, and IP protection for authenticity, quality assurance, and rural development.

Despite valuable insights into consumer perceptions of geographical indications, branding, and intellectual property protection in agriculture, this study has several limitations. First, the sampling approach relied on voluntary response and snowball dissemination, which increases the risk of self-selection bias. Individuals with a stronger interest in issues of product origin, branding, or intellectual property protection may have been more inclined to participate, potentially skewing the results. Second, the lack of demographic or geographic restrictions limits the representativeness of the sample, making it difficult to claim that the findings accurately reflect the attitudes of the broader Serbian consumer population. Consequently, the results should be interpreted primarily as indicative and exploratory, rather than as fully generalizable conclusions. Third, cross-sectional design captures attitudes at a single point in time, limiting the ability to observe changes in consumer behavior over time.

Future research could address these limitations by employing a randomized or stratified sampling approach to achieve a more representative sample. Longitudinal studies would allow researchers to track changes in consumer perceptions and behavior over time, providing insights into trends and evolving preferences. Additionally, future studies could examine specific product categories or regions in greater detail, and explore the interaction between branding, geographical origin, and other factors such as sustainability certifications or marketing strategies. Such research would further enhance understanding of how legal protection and marketing tools influence consumer decision-making in agriculture and inform both policy and producer strategies.

Conflict of interests

The authors declare no conflict of interest.

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