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EDITED BY

Michele Filippo Fontefrancesco,
University of Gastronomic Sciences, Italy

REVIEWED BY

Zlati Monica Laura,
Dunarea de Jos University, Romania
Raffaella Pergamo,
Council for Agricultural and Economics
Research (CREA), Italy

*CORRESPONDENCE

Bojana Kalenjuck Pivarski
✉ bojana.kalenjuk@dgt.uns.ac.rs

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Traditional food products on the local market - consumption conditional on the characteristics of management and restaurant facilities in tourism of Vojvodina (Serbia)

Bojana Kalenjuck Pivarski^{1,2*}, Dragana Tekić³, Stefan Šmugović¹, Aleksandra Novaković⁴, Velibor Ivanović¹, Marica Petrović³, Maja Banjac¹, Bojan Đerčan¹, Dragan Tešanović¹, Miloš Čirić^{1,5}, Ivana Čabarkapa⁶, Ivana Čirić^{1,7}, Veljko Šarac³ and Nikola Maravić⁶

¹Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad, Novi Sad, Serbia, ²Faculty of Economics, University of East Sarajevo, Pale, Bosnia and Herzegovina, ³Department of Agricultural Economics and Rural Sociology, Faculty of Agriculture, University of Novi Sad, Novi Sad, Serbia, ⁴Faculty of Education, University of East Sarajevo, Bijeljina, Bosnia and Herzegovina, ⁵College of Hotel Management, Academy of Applied Studies Belgrade, Belgrade, Serbia, ⁶Institute of Food Technology, University of Novi Sad, Novi Sad, Serbia, ⁷Vocational School of Hotel and Tourism Management, Belgrade, Serbia

The research dealt with traditional food products (TFP) observed on the local hospitality-touristic market, from the point of view of 300 restaurant workers employed in managerial positions, as important subjects in preservation of tradition in hospitality and touristic industry of Vojvodina (Republic of Serbia). The research examined the management's views on TFP, as well as whether there are differences based on the features of the respondents as well as the restaurant facility. In order to obtain data that would provide additional guidelines for acting on the hospitality and tourism market, the procurement and consumption of TFP was also examined. In order to determine set differences the non-parametric Kruskal-Wallis test was applied. In order to establish statistically significant differences between the observed groups, the Dunn's *post hoc* test was applied. In the second part of the research, a binary logistic regression model was applied in order to determine which of the observed variables has a significant impact on the respondents' decision to acquire TFP from their field. The research showed that the level of education and the field of management education significantly influence the attitudes about the offer of TFP in the hospitality and tourism market, as well as the type of restaurant offer and the development of the field of business.

KEYWORDS

traditional food, consumption, opinion, gastronomy, restaurant, local market, tourism, hospitality

1. Introduction

Traditional food products (TFPs) are gradually becoming the main topic of research in terms of sustainability of gastronomic heritage as a part of cultural identity and market placement in hospitality and tourism (Guerrero et al., 2009; Vanhonacker et al., 2010; Cantarero et al., 2013; Almerico, 2014; Barska and Wojciechowska-Solis, 2018; Zocchi and Fontefrancesco, 2020; Kalenjuk Pivarski et al., 2022). These products are a reflection of the culture and life of the people of a particular area that has managed to be preserved throughout history (Trichopoulou et al., 2007). They are special due to their production methods which are associated with certain ingredients, combined with specific production processes that are being preserved through generations (Kocman, 2018; Petrescu-Mag et al., 2020). The principal advantage of these products is the contrast they pose to food products from mass production (Moscatelli et al., 2017). As such, these products represent an important cultural phenomenon that is being given special attention by leading national and international bodies (Cantarero et al., 2013; Almerico, 2014; Brulotte and Di Giovine, 2016).

Globalization has significantly encouraged traditional tastes and production, highlighting their value (Pieniak et al., 2009) and importance of preservation (Rocillo-Aquino et al., 2021). An increase in consumers' demand, especially touristic consumption, influenced the revival of these products (Wang et al., 2015; Roselli et al., 2018; Török et al., 2022) which was recognized by different commercial facilities (Vanhonacker et al., 2010). Traditionality of these products is associated with production methods and labels that mark their special quality (Barska and Wojciechowska-Solis, 2018; Caputo et al., 2018), synonymous to traditional cuisine and traditionally prepared meals (Petrescu-Mag et al., 2020) on hospitality and touristic market.

The subject of this study TFP on the local catering-tourism market perceived in terms of restaurant workers on the territory of AP Vojvodina (northern region of the Republic of Serbia), as important subjects in deciding the implementation of exactly such goods in restaurant facilities' offer.

This research aims is to examine the attitudes of the restaurant facilities management staff towards the offer of TFPs that are available on the hospitality touristic market, as well as if socio-demographic characteristics of the respondents and characteristics of restaurant facilities have different attitudes towards TFPs. In order to get more valuable data which would provide additional guidelines for activities on the hospitality and touristic market the procurement of TFPs was examined, focusing on local market products (i.e., administrative areas of the facility) and regional disparities.

The objectives of the research are the following (Scheme 1).

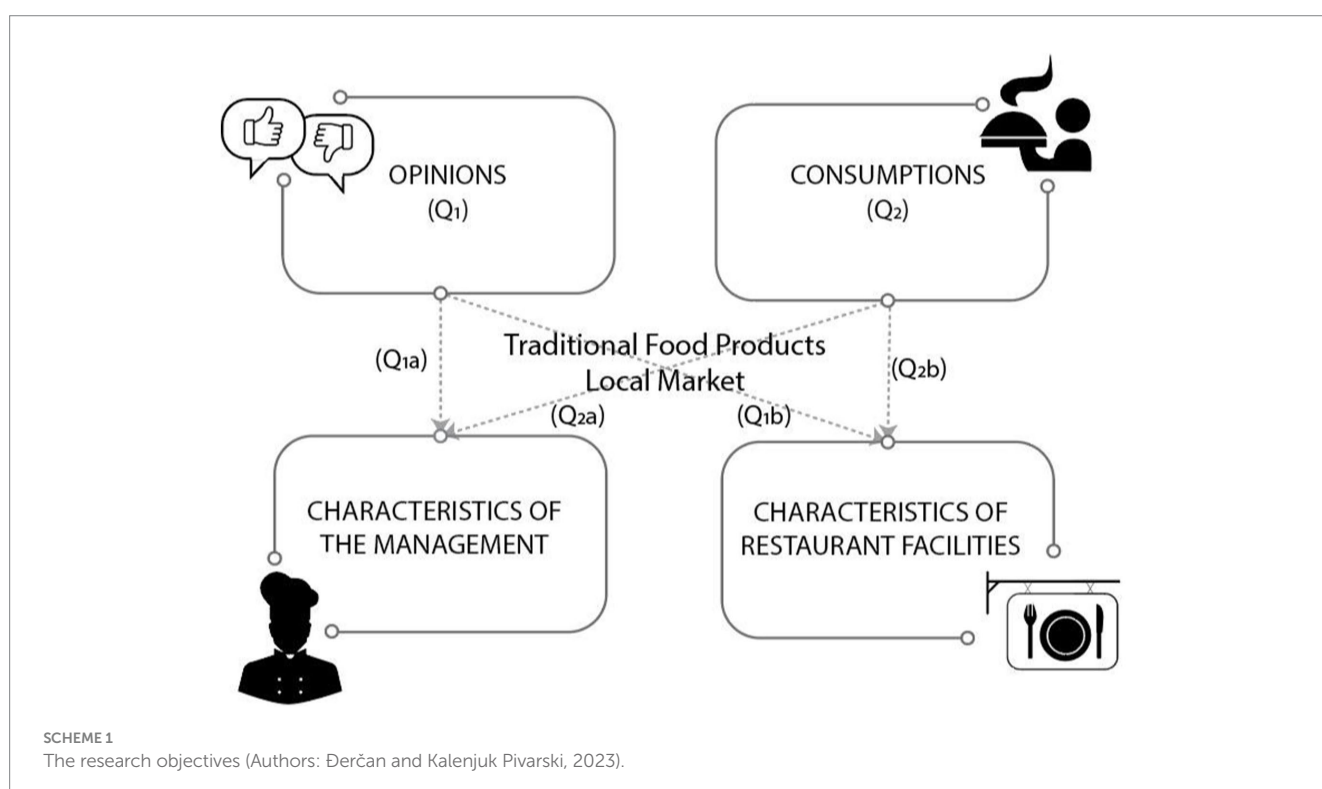
- to determine the existence of differences in the opinion of restaurant management about TFP in the hospitality and tourism market depending on the socio-demographic characteristics and characteristics of the restaurant facilities and
- to determine the consumption of local TFP depending on the socio-demographic characteristics and characteristics of restaurant facilities in the region.

The key questions that our research will seek to answer are:

Q₁: What is the opinion of the restaurant's management staff about TFP in the hospitality and tourism market?

Q_{1a}: Are there any differences in opinions depending on the socio-demographic characteristics of the management staff?

Q_{1b}: Are there any differences in opinions depending on the characteristics of a restaurant facility?



Q₂: Do restaurant establishments obtain TFPs from the local market?

Q_{2a}: Are there any differences in consumption depending on the socio-demographic characteristics of the management's staff?

Q_{2b}: Are there any differences in consumption depending on the type of a restaurant facility?

2. Literature review

2.1. Traditional food in researches

TFPs are a subject of many researches in recent decades (Dogan et al., 2017; Barska and Wojciechowska-Solis, 2018; Kocman, 2018; Silvestri et al., 2020; García-Barrón et al., 2021). However, the research approaches are different (quality, perception, consumption, distribution, impacts, innovations and other) (Guerrero et al., 2010; Mohamed Shaffril et al., 2015; Nguyen et al., 2018; Kovács et al., 2022). The focus is mainly on producers and consumers, including tourists, and the least focus is on the caterers (Grubor et al., 2022; Kalenjuk Pivarski et al., 2023b) as the main consumers and officers on the touristic market. Researches mainly deal with the general attitudes of caterers, but insufficient number of studies included the socio-demographic characteristics of caterers as important in the analysis of the current situation (Kocman, 2018).

The researchers showed that TFPs significantly influences the satisfaction of consumers, through loyalty and this is one of the reasons they return to certain destination (Mohamed Shaffril et al., 2015). Consumers' decision-making about TFP consumption is influenced by familiarity of the product, source, detected worth, consumer's life duration and purchasing power (Cacciolatti et al., 2015). Equally important characteristics are added to these decisions, namely retail price, quality certification, retail channel, specific taste, quality, appearance, nutritional value, healthiness and safety (Almli et al., 2011; Balogh et al., 2016).

The researches have shown that the characteristics differentiating TFP from customary food are associated mainly to tradition, as well as to the receptive and health features they have. There being also: natural taste perception, quality of a product, sales in the source region and labeling, but also determinants of choice of these products, such as: traditional recipe, sensory quality of food - taste and uniqueness of these types of products (Bryła, 2015).

2.2. Traditional food - influencing selection and consumption

The development of TFPs is important for the local community and local producers and companies, because they encourage the diversification of agriculture and the sustainable (Barska and Wojciechowska-Solis, 2018). TFPs on the hospitality and tourism market influence the preservation and nurturing of traditional manufacture, society, personality and inheritance, which are the focus of tourists' interest as significant factors in the improvement of local agriculture and craftsmanship, which indirectly influence the development and conservation of gastronomic culture and tradition (Bessiere and Tibere, 2013; Ivanović et al., 2022). TFPs in tourism represent the part of local activities, which affect the sustainability of gastronomy and economy (Niedbała et al., 2020).

Researches have proven that the use of TFP affects the increase in demand for traditional restaurants, which has a positive economic effect (Lopes et al., 2022) with a significant impact on the economic development of rural areas (Śmiechowska, 2014), agriculture and craft production, with significant reduction of regional economic gaps and significant growth of the local economy (Guerrero et al., 2010; Todericiu, 2012; Duda-Seifert et al., 2016).

As already mentioned, there is a shortage of studies on the effects of sociodemographic characteristics on the attitudes of caterers towards local food (Ćirić et al., 2021; Liu et al., 2021). Studies of this type are significant because based on them, a base of local community behavior is created, on the basis of which it is easier to establish a development plan (Liu et al., 2021).

The researches have shown that approaches to TFP preferences between the sexes are of equal interest for men and women observed on the European market (Vanhonacker et al., 2010; Serrano-Cruz et al., 2018). However, there is no in-depth information on the subject.

2.3. Traditional food in Vojvodini

TFPs represent one of the key attractions in tourism industry (Mohamed Shaffril et al., 2015), whose potentials tend to be used in the area of AP Vojvodina as well (Northern region of Serbia). Vojvodina is a multicultural region with a large number of ethnic groups that have created a specific mix of gastronomic influences and authenticity. Large movements of the population in these areas throughout history have brought different mixes of tastes and products that have become indigenous and today form an integral part of traditional production and gastronomy. Traditional gastronomy is characterized by a lot of meat, different meat products such as salted and smoked meat, a lot of cheese and milk products, various types of dough and different fruit and vegetable products (Kalenjuk Pivarski et al., 2023a).

In the context of TFP in Vojvodina, certified products with the TASQ label, i.e., Traditional and Standard Quality ([htTFPs://tasq.rs/sr/](https://tasq.rs/sr/); TASQ, 2023), attract the most attention. 156 products from 40 small producers have this label. Their label guarantees that these are products of precisely defined sensory or nutritional quality, combined with additional quality indicators. They have a label that confirms these are products of organic origin, with geographical label, whether they are made of domestic or non-domestic sorts, kinds or species (depending on the type of products), whether are traditionally produced and if they possess HACCP production certificate (Ikonić et al., 2021; Ivanović et al., 2022; Stošić et al., 2022). One of the most important items of production process, that highlights their authenticity and traditionality, is that they are produced exclusively in family households (Ikonić et al., 2021; Kalenjuk Pivarski et al., 2022, 2023b). These products influence the creation of general perception of the touristic destination that is aimed at further development (Florek and Gazda, 2021).

3. Methodology of the study

3.1. Research site

The research was conducted on the territory of Autonomne Province Vojvodina, which is the northern region of the Republic of Serbia, located in the southeastern part of Europe. The research covers

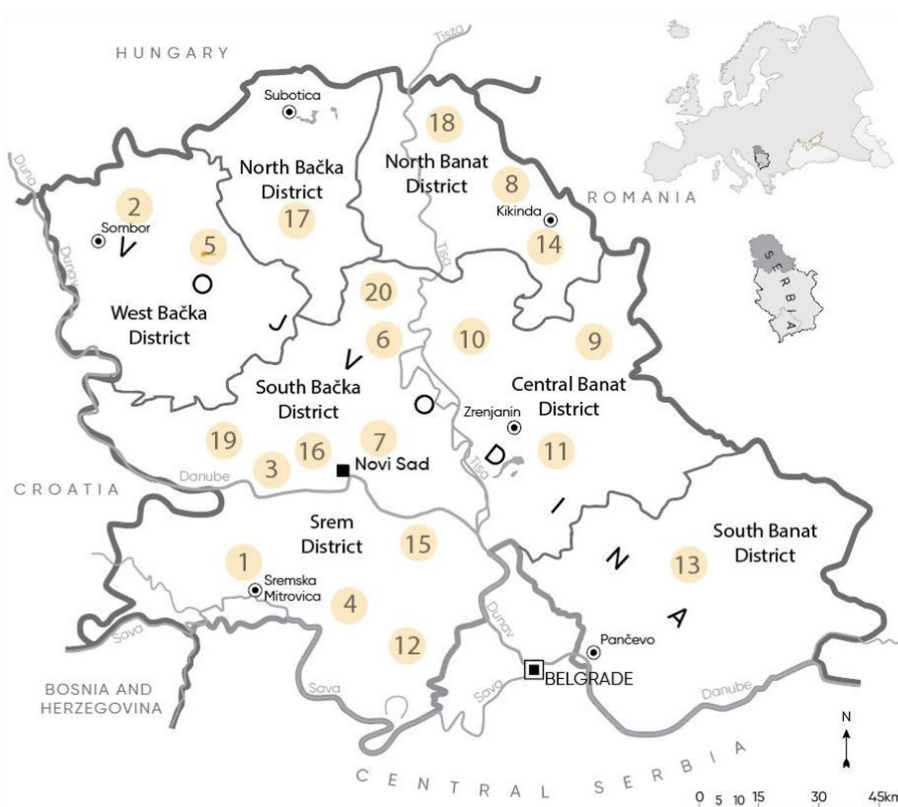


FIGURE 1

Traditional products in Vojvodina: 1. Spicy Slovak sausage from Srem - Sremski kuleni; 2. Spicy Slovak sausage from Svetozar Miletić - Lemesh kuleni; 3. Spicy Slovak sausage from Bački Petrovac - Petrovac kuleni; 4. Homemade sausage from Srem; 5. Homemade bacon; 6. Smoked meat; 7. Meat product made from pork ears, tongues, legs, skins, and pieces of meat from the pork's head - Shvargla; 8. Rolled cheese; 9. Homemade cheese; 10. Sliced cheese in brine; 11. Swabian (cottage) cheese; 12. Linden honey from Fruška Gora Mountain; 13. Flower honey from Deliblatska sandstone; 14. Cold pressed pumpkin oil; 15. Apricot and plum jam; 16. Fresh and pickled cabbage from Futog; 17. Product made from roasted peppers - Homemade ajvar; 18. Ground paprika - sweet and hot; 19. Homemade raspberry, apple and cherry juices; 20. Elderberry, mint and lemon balm homemade syrup (Author: Derčan, 2023).

seven administrative areas: Southern Backa, Western Bačka, Southern Banat, Northern Banat, Central Banat, Northern Bačka, and Srem, which are shown in Figure 1. The areas are differently economically developed and territorially populated (Kalenjuk, 2017).

3.2. Creating a survey questionnaire

The presented sample of respondents, in this study, was part of a large research of TFPs. The survey questionnaire consisted of seven parts, which were specially processed and created according to the model of similar research (Nguyen et al., 2018; Grubor et al., 2022; Kalenjuk Pivarski et al., 2023a,b), with certain modifications for the purpose of quality. This study presents the results of set issues, i.e., only three parts of the created survey questionnaire:

- The first part are data related to issues about respondents' social and demographic features and the features of the facilities where the respondents are employed.
- The following part of the survey is associated with examination of general opinions about TFPs on the market (8 claims whose opinions are measured in Likert scale of 1 to 5).

- The third part is about obtaining data about TFPs procurement from area they work in, and which are characteristic for that part of the market. The survey questionnaire included a list of 20 TFP products that have the TASQ label.¹ Their selection was made by special expertise with a focus on products that, as such, were among the first to appear on the market with this label. The regional distribution of covered TFP is different and is not conditioned by regional development, nor proportional distribution. Many products can be found throughout Vojvodina, but they do not have a quality guarantee. For these products, in the case of procurement, respondents declared themselves in terms of frequency of consumption on a Likert scale from 1 to 5. For the purposes of this research, answers about the use of the mentioned TFPs were generated with yes/no. The production location of the included TFPs is shown in Figure 1.

¹ <https://task.rs/sr/>

3.3. Data collecting

The research was carried out from February to June 2022 and included collecting of 300 survey questionnaires from different restaurant facilities, with compliance with all ethical principles for this type of quantitative research. The selection of restaurant establishments was carried out by free sampling, focusing on forming a sample that is relative to the number of people employed in the catering industry in administrative areas of Vojvodina that are in agreement with the records of the [Republic Institute of Statistics - Registered Employment \(2022\)](#).² The proportional number of respondents by administrative area is shown in sample description. The focus was on questioning the management staff as the key factors in TFPs procurement in the hospitality and tourism market.

3.4. Statistical data processing

The data obtained are processed using the R version 4.1.2 software. Descriptive statistical analysis was applied first. In order to determine if there are variations between the socio-demographic features of the respondents and the features of the facilities where the respondents are employed in terms of general attitudes about TFP on the market, a non-parametric Kruskal-Wallis test was applied. [Kruskal and Wallis \(1952\)](#) is a non-parametric statistical test that assesses differences among three or more independently sampled groups at a single, non-normally distributed continuous variable. The Kruskal-Wallis test is an alternative to ANOVA, with the exception that, unlike analysis of variance, it does not assume the normality of the distribution of the observed data. The initial hypothesis of the Kruskal-Wallis test implies that the medians of the observed groups are equal, while the alternative hypothesis assumes that there is a statistically significant difference at least between the two medians of the observed groups ([Ostertagová et al., 2014](#)). In the case of establishing statistically significant varieties between the determined groups, the Dunn post-hoc test was used for determining between which groups there is a statistically significant difference.

In the second part of the research, a binary logistic regression model was applied in order to determine which of the observed variables have a significant impact on the respondents' decision to procure TFP from their area. Binary logistic regression is a type of regression analysis where the dependent variable is dichotomous, and the independent variables are continuous, categorical, or both ([Midi et al., 2010](#)). In the case when the dependent variable Y is dichotomous then $0 \leq E(Y|x) \leq 1$ applies, the dependent variable takes the value 1 or 0 depending on the outcome of the experiment. In logistic regression, the probability π is modeled as:

$$\pi = P(Y = 1 | X_1 = x_1, \dots, X_k = x_k).$$

If π represents the probability that something will not happen, then the odds ratio is $\pi/(1-\pi)$. That is:

$$\pi/(1-\pi) = e^{(\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k)}.$$

If both sides of the above equation are logarithmized, the following expression is obtained:

$$\ln\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k.$$

The obtained function is called logit and it is linear with parameters $\beta_i, i=1 \dots k$. π belongs to the interval $[0,1]$, while the value of the logit ranges from $(-\infty, +\infty)$, so it can be said that the logit function is the best choice for displaying this function ([Samprit and Ali, 2006](#)).

3.5. Sample description

The analysis of the results of the survey began with a descriptive statistical analysis of the observed socio-demographic characteristics of restaurant workers employed in managerial positions, the following parameters were included: gender, age, then the education degree, work experience in hospitality, as well as the characteristics of the facilities where the respondents were employed (type of hospitality facility, type of offer, ownership and area within the region) ([Table 1](#)).

The largest percentage of the respondents is employed as deputy chefs (35%), followed by owners of facilities who work in managerial positions (29%), chefs (21%), while the smallest number belongs to those who work as food and drinks managers (15%).

Based on the observed characteristics of the facilities where the respondents are employed, it can be seen that as many as 50% of the respondents work in a la cart restaurants, while the smallest percentage of respondents (2.7%) are employed in mass restaurant restaurants, namely workers, hospital, school and other canteens.

Observing the structure of the food offer, it is important to note that more than half of the responder are employees of restaurants with a joint food offering - home-made, local, international (51%), followed by restaurants with an international offer (21.7%), home-made food restaurants (17.7%) and restaurants with national food offerings (9.7%). Respondents were also asked about the type of ownership of the restaurant in which they are employed, and the majority of respondents (90.3%) work in restaurants that are private ownership, while only 9.7% of respondents work in restaurants that are franchised or corporately owned. The gender structure in facilities ownership is interesting, considering that there are 70% male owned facilities. Moreover, male dominance in terms of power and decision making is also reflected in men being chefs (65%), while women are mainly employed as deputy chefs (54%).

Observing the areas of AP Vojvodina in which the respondents work, the largest percentage of respondents work in Southern Bačka region (42.3%), which is also the most developed area of AP Vojvodina with the capital of this area, but as already stated in the methodology of the work, the number of respondents is proportionate to the number of employees in processed regions of Vojvodina.

² <https://www.stat.gov.rs/oblasti/trziste-rada/registrovana-zaposlenost/>

TABLE 1 The characteristics of the respondents and facilities.

Variables	Categories	<i>n</i>	Percentage
Socio-demographic characteristics of the respondents			
Gender	Male	180	60.0
	Female	120	40.0
Age	Up to 30 years old	96	32.0
	31–40 years old	94	31.3
	41 and higher	110	36.7
Level of education	Tertiary associate degree	210	70.0
	Bachelor university degree	47	15.7
	Academic study program	41	13.7
	Master/PhD	2	0.7
Area of education	Hospitality, industry, tourism	152	50.7
	Economy, low, management	65	21.7
	Food technology, agriculture, chemistry	25	8.3
	Other areas	58	19.3
Work experience	0–5 years	81	27.0
	6–10 years	78	26.0
	11–15 years	53	17.7
	16 and more	88	29.3
Characteristics of restaurant facilities			
Type of a facility	Mass catering restaurant	8	2.7
	A la cart restaurant	150	50.0
	Fast food restaurant	74	24.7
	Other types of restaurants	68	22.7
Type of offer	International food offer	65	21.7
	National food offer	29	9.7
	Domestic food offer	53	17.7
	Combined food offer	153	51.0
Type of ownership	Franchise/corporate ownership	29	9.7
	Individual ownership	271	90.3
Area where a catering facility is located in Vojvodina	Area of Southern Bačka	127	42.3
	Area of Western Bačka	25	8.3
	Area of Southern Banat	38	12.7
	Area of Northern Banat	15	5.0
	Area of Central Banat	17	5.7
	Area of Northern Bačka	36	12.0
	Area of Srem	42	14.0

Source: Author's interpretation.

4. Study results

4.1. Analysis general opinions on TFP on the market

Considering the results of the general opinions about TFPs on the market (Table 2), it can be seen that the respondents mostly agreed

with the statement that the TFPs offer affects the gastronomic offer in a restaurant facility (mean = 4.07), as well as with the statement that greater diversity is needed in the offer of TFPs (mean = 4.05). Respondents showed the minimal agreement with statements related to contentment with the ease of purchasing TFP (mean = 3.45) and the statement that the price of TFP is justified by their overall quality (mean = 3.46). The highest level of variability was observed in the

TABLE 2 Descriptive statistical analysis of general opinion on TFPs on the market.

Statement		Mean	Standard deviation
S1	I am satisfied with the TFP offer on local market	3.91	1.069
S2	I am satisfied with overall quality of TFPs	3.86	1.023
S3	I think greater diversity of TFP offer is needed	4.05	1.040
S4	I think that the price of TFP is justified by their overall quality	3.46	1.104
S5	The offer of TFPs influences the gastronomic offer of a restaurant facility	4.07	0.96
S6	Guests ask for meals prepared from TFPs	3.96	1.077
S7	Certain legal regulations complicate the procurement of TFPs	3.70	1.175
S8	I am satisfied with the ease of procurement of TFPs	3.45	1.105

Source: Author's calculation.

TABLE 3 The Kruskal-Wallis test of differences in levels of education of the respondents and general opinions about TFPs on the market.

Statement	Mean				p-value
	Secondary	Tertiary	High	Master's/PhD degree	
S1	4.02	3.72	3.54	4.00	0.031
S3	3.94	4.00	4.46	4.00	0.039
S7	3.75	3.81	3.24	5.00	0.006

Source: Author's calculation.

claim related to legal norms that make it difficult to procure TFP (SD = 1.175), i.e., it can be seen that the respondents had different opinions about this claim.

4.2. Analysis of the respondents' level of education influence on general opinions about TFP on the market

Using the Kruskal-Wallis test, an analysis was performed with the task of establishing whether there are differences between the respondents' education degree in terms of their general opinions about TFP in the market (Table 3).

Using the test, it was determined that a statistically significant variety in the education degree of the respondents and their contentment with the TFP offer on the domestic market (S1) exists, and the outcome of the post-hoc test showed a statistically significant variety between respondents with a secondary school diploma and respondents with higher education ($p = 0.034$). Based on the arithmetic mean of the responses, it can be deduced that the respondents who finished high school expressed the highest level of satisfaction with the TFP offer on the market, and the respondents who are highly educated showed the lowest level of satisfaction.

A statistically important difference between respondents of different levels of education was also observed in the opinions about the need for greater diversity in the TFP offer (S3). Even in the case of this claim, the post-hoc test established that statistically important differences between respondents with secondary education and highly educated respondents ($p = 0.043$) exist. Respondents with higher education believed that it is more necessary to improve the diversity of the TFP offer, compared to respondents of other levels of education.

Based on the outcomes, a statistically important difference can be seen in the level of education of the respondents and their opinion that certain legal norms make it difficult to acquire TFP (S7). The outcomes of the post-hoc test presented a statistically important variety between respondents with master's or doctorate degree ($p = 0.021$), as well as between those with higher education and respondents with master's and doctorate degree ($p = 0.018$) in terms of their opinions about legal norms complicating the procurement of TFP.

4.3. Analysis of differences in respondents' fields of education on general opinions about TFP on the market

Using the Kruskal-Wallis test it was conducted an analysis on differences between field of education of the respondent in terms of their general opinions on TFPs on the market (Table 4). The outcomes of the test affirmed that a statistically important difference in the field of education of the respondents and their attitude that the price of TFP is justified with their overall quality (S4) exists. Based on the arithmetic mean of the responses, it can be observed that respondents whose field of education is hospitality or tourism showed more agreement with the statement that TFP prices are justified by their overall quality, while respondents whose field of education is food technology, agriculture and chemistry and respondents from other fields of education showed the least agreement with this statement. The post-hoc test affirmed that there are statistically important differences between these groups of respondents ($p = 0.040$; $p = 0.015$).

A statistically important variety between respondents of various fields of education was also observed in the statement related to

satisfaction with the ease of acquiring TFP (S8). The outcomes of post-hoc test confirmed that there is a statistically important difference only between respondents whose field of education is hospitality or tourism and those whose field of education is food technology, agriculture or chemistry ($p=0.045$), whereby respondents who are from the field of hospitality or tourism show a higher degree of satisfaction.

4.4. Analysis of differences between the type of restaurant offer of the restaurant where the respondent is employed and general opinions about TFP on the market

In the following, using the Kruskal–Wallis test, an analysis of the difference between the type of restaurant offer of the restaurant where the respondent is employed was performed in terms of their general opinions about TFPs on the market (Table 5). Based on the results of the Kruskal–Wallis test it can be seen there is a statistically significant difference between the respondents who work in a restaurants of different gastronomic offer and their opinions about the claim that guests ask for meals made of TFPs (S6). From the presented results, it can be seen that respondents employed in restaurants offering domestic food and national food show the highest level of agreement with S6, while respondents who are employed in restaurants with domestic food offer show the highest level of agreement with the statement related to legal norms (S7). The outcomes of the post-hoc test presented that there is a statistically important difference between respondents who work in international food restaurants and those

who work in national food restaurants, national food restaurants and combined food offer ($p=0.000$; $p=0.002$; $p=0.037$), as well as between the respondents employed in restaurants with domestic food offer and combined food offer ($p=0.024$).

A statistically important difference was observed between respondents employed in establishments with a mixed gastronomic offer and the claim that certain legal norms make it difficult to obtain TFP (S7). Based on the average values of the respondents' answers, it can be seen that respondents working in restaurants offering domestic food agree the most with the previously mentioned statement, and respondents working in restaurants offering international food the least. A post-hoc test revealed a statistically significant difference between these two groups of respondents ($p=0.015$). The S6 claim referred to guests' demand for meals made of TFPs and it was noticed that the highest demand for such dishes is precisely in restaurants with local food offer.

4.5. Analysis of differences in the restaurant region the respondent is employed in on general opinions about TFP on the market

In the following, also by applying the Kruskal–Wallis test, an analysis of the existence of differences between the geographical areas of the restaurant business where the respondent is employed in terms of their general attitudes about TFP on the market was performed (Table 6). The test found that a statistically important difference between the field of respondents' work and their opinions on the claim that certain legal norms make it difficult to procure TFP (S7) exists. A post-hoc analysis

TABLE 4 The Kruskal–Wallis test of differences between the field of education of the respondents and their general opinions on TFPs on the market.

Statement	Mean				p-value
	Hospitality, Tourism	Economy, law, management	Food technology, agriculture, chemistry	Other	
S4	3.66	3.40	3.04	3.05	0.002
S8	3.59	3.40	3.12	3.23	0.039

Source: Author's calculation.

TABLE 5 The Kruskal–Wallis test of differences between the type of gastronomic offer and general opinions on TFPs on the market.

Statement	Mean				p-value
	International food offer	National food offer	Domestic food offer	Combined food offer	
S6	3.46	4.34	4.40	3.95	0.000
S7	3.42	3.90	4.06	3.66	0.020

Source: Author's calculation.

TABLE 6 The Kruskal–Wallis test of differences between the restaurant region and general opinions about TFPs on the market.

Statement	Mean							p-value
	Southern Bačka	Western Bačka	Southern Banat	Northern Banat	Central Banat	Northern Bačka	Srem	
S7	3.36	3.13	4.37	3.53	4.53	4.25	3.71	0.000
S8	3.34	3.54	3.39	3.27	3.47	4.26	3.19	0.000

Source: Author's calculations.

revealed the existence of a statistically important difference between the respondents from the Western Bačka region and the respondents from the South Banat region, the Central Banat region, and the North Banat region ($p=0.000$; $p=0.000$; $p=0.002$), as well as between the respondents from the Southern Bačka region and the respondents from the Southern Banat region, Central Banat and North Bačka regions ($p=0.000$; $p=0.002$; $p=0.003$). The lowest level of satisfaction with the S7 statement was shown by employees in West Bačka and South Bačka regions, and the highest level of satisfaction was shown by employees in the Central Banat region. A statistically important difference between the working areas of the respondents was also observed in the statement related to the degree of satisfaction with the ease of procurement of TFP (S8). Respondents employed in North Bačka agree most with the S8 statement, and the respondents employed in Srem least agree. The outcomes of the post-hoc test presented a statistically important difference in respondents' level of contentment with the ease of procurement of TFPs between respondents employed in Northern Bačka and the respondents employed in Srem, Northern Banat, Southern Bačka and Southern Banat ($p=0.040$; $p=0.000$; $p=0.017$).

4.6. Logistic regression to determine the impact of different variables on the decision to purchase TFP from one's region

In order to determine the influence of the observed variables on this decision of the respondent, a logistic regression model was applied, where the dependent variable was dichotomous (0- does not acquire TFP characteristic of the area in which it operates, 1- acquires TFP characteristic of the area in which it operates). Analyzing respondents' answers, it was observed that 118 respondents do not purchase TFP from their area, and 182 respondents purchase TFP from their area (distribution of researched products by area, Figure 1). The results of the Omnibus test of coefficients showed that the model was well adapted to the data [$\chi^2(17) = 102.162$, $p=0.000$]. This result was also confirmed by the results of the Hosmer Lemeshow test [$\chi^2(8) = 9.446$, $p=0.306$] (Table 7).

Considering the results of the logistic regression that is presented in Table 7, it can be deduced that the socio-demographic features of the respondents are important variables ($p < 0.05$) influencing the decision whether to acquire TFP from their field are age and working experience in the hospitality industry. Based on the calculated probabilities from the table below, it can be deduced that the chance that respondents up to 30 years of age acquire TFP from their area is 23.95%, and for respondents from 31 to 41 years old it is 22.72%. Observing the working experience of the respondents, the lowest probability of acquiring TFP in their field occurs among respondents with an experience of 11–15 years (60.72%).

The type of restaurant and the area where the restaurant is located stood out as significant among restaurant's characteristics ($p < 0.05$). Looking at the type of restaurant facility, the lowest probability (39.06%) for the procurement of TFP in the area in which they work occurs at fast food restaurants. And statistically, the highest probability of purchasing TFP is at a la carte restaurants (86.20%). Observing the results of the probability for the area in which the restaurants work (Figure 2), it can be seen that there is the highest probability of acquiring TFP from their area for restaurants from North Bačka with 81.44% and South Bačka region with 75%. The research of TFP

produced in households in the North Bačka region includes domestic ajvar. Ajvar is one of the most represented and representative traditional products of Serbia (Popović et al., 2014). Traditional products from the South Bačka district were included in the research and were among the first to receive the TASQ label. Some can be found in other areas throughout the region. The research included: Kulen sausage from Bački Petrovac, smoked meat, shvargla, fresh and pickled cabbage, homemade raspberry, apple, and cherry juices, and elderberry, mint, and lemon balm homemade syrup. While the lowest probability is (1.77%) that respondents from Western Bačka region will procure TFP.

4.7. Analysis of regional disparities

The previous results within the region conditioned the implementation of further analysis, which attempted to see the possible connection of the obtained data on the consumption of TFPs by region with the structure of the examined management and the characteristics of restaurant facilities. Using descriptive analysis does not realize significant differences in management structure as the primary influence on the results. The characteristics of the researched restaurant facilities also showed no differences, which could affect the obtained results on consumption by region.

From the obtained data shown in Table 8, it is impossible to determine the significant impact of the management structure and the characteristics of restaurant establishments on the consumption of TFPs from the local market.

5. Discussion

5.1. Opinions of the management of restaurant facilities about TFP on the catering-tourism market

The first study question was aimed at obtaining data (Q₁) about the opinion of the management of restaurant facilities about TFPs on the catering-tourism market. It resulted in two subsidiary research questions to which answers were obtained by applying appropriate analyses. The first subsidiary question (Q_{1a}) referred to analysis of differences in management staff's opinions depending on their socio-demographic characteristics. The research showed that education significantly affects the level of satisfaction of TFP supply on the market. Employees in management positions with a high school diploma have higher level of satisfaction compared to respondents with higher education. This may be related to the perception of the offer itself, where the highly educated could be characterized as much more demanding in terms of the offer composition of these products.

This part is followed by the results that show that precisely the highly educated respondents are of the opinion that there is a need for greater diversity in the TFP offer. Reason for this could be that there is a larger number of highly educated managers in South Bačka's restaurant facilities, which, due to its nature of business and the large fluctuation of different visitor profiles, require a much wider and more diverse offer, so this response is to a certain extent expected (Brunori et al., 2016).

The same group of respondents stands out in terms of their opinions on legal norms that affect the procurement of TFP. These

TABLE 7 Logit model results.

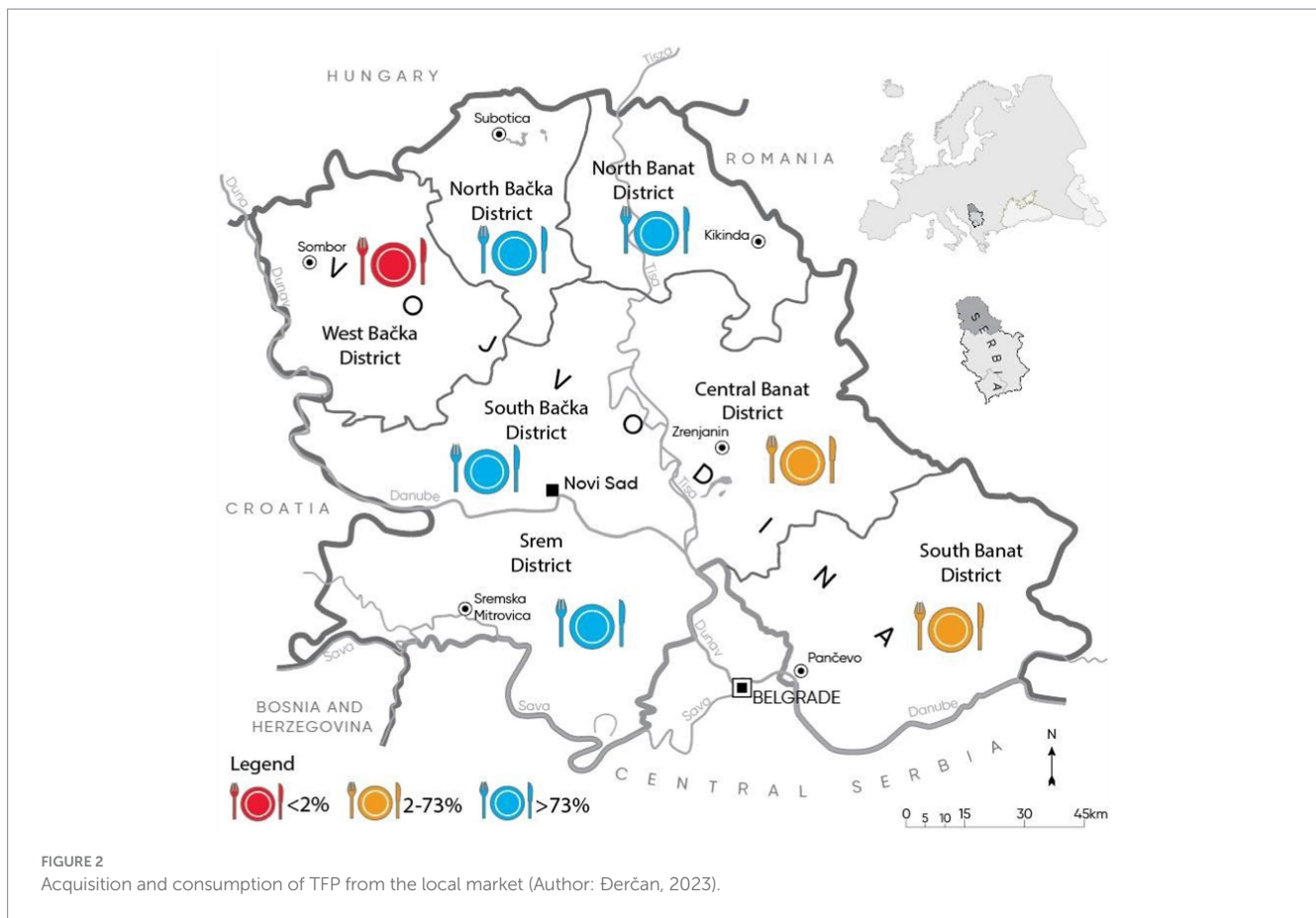
Variables (%)	B	S.E.	Wald	df	Sig.	Exp(B)	Probability
Age			7.456	2	0.024		
Up to 30	-1.156	0.566	4.163	1	0.041	0.315	23,954
31–40 years old	-1.223	0.451	7.336	1	0.007	0.294	22,720
Level of education			1.505	3	0.681		
Secondary	-22.125	25440.536	0.000	1	0.999	0.000	0,000
Tertiary	-21.865	25440.536	0.000	1	0.999	0.000	0,000
High	-22.590	25440.536	0.000	1	0.999	0.000	0,000
Field of education			2.506	3	0.474		
Hospitality, tourism	-0.472	0.495	0.909	1	0.340	0.624	38,424
Economy, law, management	-0.254	0.551	0.213	1	0.644	0.775	43,019
Food technology, agriculture, chemistry	0.440	0.705	0.390	1	0.532	1.553	60,830
Working experience in hospitality industry			5.151	3	0.002		
0–5 years	1.093	0.588	3.457	1	0.063	2.983	74,893
6–10 years	1.071	0.494	4.703	1	0.030	2.920	74,489
11–15 years	0.436	0.501	0.758	1	0.384	1.546	60,723
Current employment			1.561	3	0.668		
Chef	-0.213	0.480	0.196	1	0.658	0.808	44,690
Deputy chef	-0.378	0.417	0.822	1	0.365	0.685	40,653
Food and drinks manager	0.179	0.558	0.103	1	0.749	1.196	54,463
Type of a restaurant facility			12.729	3	0.005		
Mass food restaurants	0.776	0.389	3.988	1	0.046	2.173	68,484
A la cart restaurants	1.832	1.108	2.734	1	0.098	6.247	86,201
Fast food restaurants	-0.444	0.430	1.066	1	0.302	0.641	39,062
Type of gastronomic offer			3.909	3	0.271		
International food offer	-0.660	0.388	2.891	1	0.089	0.517	34,080
National food offer	-0.630	0.540	1.362	1	0.243	0.532	34,726
Domestic food offer	0.016	0.467	0.001	1	0.973	1.016	50,397
Type of ownership	-0.784	0.511	2.357	1	0.125	0.457	31,366
Area			38.296	6	0.000		
Southern Bačka	1.099	0.468	5.521	1	0.019	3.000	75,000
Western Bačka	-3.994	1.141	12.251	1	0.000	0.018	1,768
Southern Banat	-0.445	0.515	0.747	1	0.388	0.641	39,062
Northern Banat	1.008	0.843	1.430	1	0.232	2.741	73,269
Central Banat	-1.811	0.773	5.493	1	0.019	0.163	14,015
Northern Bačka	1.479	0.595	6.168	1	0.013	4.388	81,444
Constant	22.858	25440.536	0.000	1	0.999	8454980067.114	

Source: Author's calculation.

respondents emphasize that the legal norms greatly complicate the procurement of TFPs. These results are unsurprising, considering that highly educated respondents have a better perception of regulations that TFPs have to pass before they get on the market. The government policies present a crucial role in placement of local products on the catering-touristic market. In Vojvodina, the situation is not like that at the moment, even though it is planned to improve the hospitality industry as one of the goals of the tourism development strategy currently in force in the Republic of Serbia (Government of

Republic of Serbia, 2016, 2023). In practice, the government's actions towards establishing decentralization of the region proved to be good, which could also be applied to the given example (Rinaldi et al., 2021).

Respondents whose field of education is catering or tourism are more in an agreement with the argument that TFP prices are justified by their overall quality, while respondents whose field of education is food technology, agriculture and chemistry and respondents of other fields of education agreed in a smaller percentage. Such results are a consequence of the fact that people



with an education degree in hospitality and tourism have had more contact with TFP, and are familiar with the quality of those products and that it has an acceptable correlation with their price (Vecchio and Annunziata, 2021). However, the respondents from education filed such as food technology, agriculture and chemistry perceive the quality of TFPs differently, starting from basic raw materials and production processes.

Respondents educated in the field of tourism are will pay more money for TFP because they see the importance of including them in their gastronomic offer from the perspective of business improvement. The offer of authentic, traditional gastronomic products is attractive to foreign tourists who want to try authentic national food and are ready to spend more money for it (Braghieri et al., 2014; Tran et al., 2022). Such claims are also confirmed by the research conducted in the countries of the Western Balkans, which includes, among other things, Serbia (Vukasović, 2014). Respondents who are more familiar with the methods of preparing TFP and the fact that they are made respecting authentic recipes but preparation methods, in a way that is different from production in the food industry, are aware that such products, due to their quality, usually cost more than commercial products (Hidayat et al., 2023). Similar results in his research were pointed out by Kocman (2018), who researched the mutual difference in the opinions of employees towards TFP prices in catering facilities in certain European countries such as Italy and the Czech Republic and in all countries obtained approximately the same, high results. The same group of respondents showed a greater level of satisfaction with ease of

procurement of TFPs, for which no real causal link could be found, compared to other managers educated in other fields. The market of TFPs is equally available to everyone, only the perception of procurement is different depending on the type and characteristics of the product.

The second subsidiary research question (Q_{1b}) referred to the differences in management's opinions on TFPs on the catering-tourism market. The management of domestic and national food restaurants significantly agrees that the guests demand meals made of TFPs. Looking at the demand of guests for meals prepared from TFP, it was observed that the highest demand for such meals is in restaurants with a domestic food offer whose basic offer is formed from local and TFP, and it is also expected that respondents employed in these restaurants consider legal norms as a limiting factor for the procurement of TFP to a significantly greater extent compared to respondents from restaurants with an international offer who have very little need for such products that can be very easily satisfied with the current offer on the market (Millán Vázquez de la Torre et al., 2016).

Significant varieties were detected between the administrative area in which the restaurant facility is located and their opinions that legal norms make it difficult to procure TFP. The lowest level of satisfaction was shown by the employees in Western Bačka and Southern Bačka, and the highest level of satisfaction was expressed by the ones in Central Banat. The difference between the areas of business in which restaurant facilities operate was also observed in the statement related to the degree of satisfaction with the ease of

TABLE 8 Regional disparities of samplings.

		Southern Bačka	Western Bačka	Southern Banat	Northern Banat	Central Banat	Northern Bačka	Srem
Acquisition and consumption of TFP from the local market		>73%	<2%	2–73%	>73%	2–73%	>73%	>73%
Socio-demographic characteristics of the respondents (%)								
Gender	Male	65.6	45.8	42.1	66.7	82.4	61.1	54.8
	Female	34.4	54.2	57.9	33.3	17.6	38.9	45.2
Age	Up to 30 years old	38.3	25.0	34.2	26.7	17.6	30.6	23.8
	31–40 years old	34.4	20.8	15.8	60.0	35.3	30.6	31.0
	41 and higher	27.3	54.2	50.0	13.3	47.1	38.9	45.2
Level of education	Tertiary associate degree	65.6	70.8	84.2	40.0	70.6	83.3	69.0
	Bachelor university degree	13.3	12.5	10.5	26.7	23.5	8.3	28.6
	Academic study program	21.1	16.7	5.3	26.7	0.0	8.3	2.4
	Master/PhD	0.0	0.0	0.0	6.7	5.9	0.0	0.0
Area of education	Hospitality, industry, tourism	55.6	37.5	47.4	26.7	76.5	55.6	57.1
	Economy, low, management	16.7	29.2	23.7	60.0	23.5	33.3	26.2
	Food technology, agriculture, chemistry	7.9	25.0	10.5	0.0	0.0	2.8	11.9
	Other areas	19.8	8.3	18.4	13.3	0.0	8.3	4.8
Work experience	0–5 years	25.8	33.3	34.2	40.0	11.8	36.1	14.3
	6–10 years	31.3	12.5	31.6	20.0	11.8	22.2	23.8
	11–15 years	19.5	12.5	5.3	33.3	23.5	19.4	16.7
	16 and more	23.4	41.7	28.9	6.7	52.9	22.2	45.2
Characteristics of restaurant facilities (%)								
Type of a facility	Mass catering restaurant	2.3	4.2	2.6	6.7	0.0	2.8	2.4
	A la cart restaurant	50.0	41.7	60.5	73.3	58.8	44.4	38.2
	Fast food restaurant	28.9	29.2	13.2	6.7	29.4	27.8	21.4
	Other types of restaurants	18.8	25.0	23.7	13.3	11.8	25.0	38.0
Type of offer	International food offer	25.0	33.3	23.7	6.7	17.6	22.2	9.5
	National food offer	12.5	8.3	15.8	20.0	0.0	0.0	4.8
	Domestic food offer	23.4	8.3	13.2	26.7	23.5	5.6	14.3
	Combined food offer	39.1	50.0	47.4	46.7	58.8	72.2	71.4
Type of ownership	Franchise/corporate ownership	12.5	0.0	5.3	6.7	23.5	13.9	2.4
	Individual ownership	87.5	100	94.7	93.3	76.5	86.1	97.6

Source: Author's calculation.

procurement of TFP, respondents employed in the Northern Bačka region agreed the most, and respondents employed in the Srem region the least. Differences in responses between administrative areas are mainly related to the offer and number of dishes for which TFPs are used as well as the availability of those products on the local market, which has been confirmed by other research (Đurić and Prodanović, 2017).

5.2. Procurement TFPs from the business market of restaurant facilities

This part researched (Q_2) whether the restaurant facilities obtain TFPs from their own areas, regions, i.e., local market. The research

showed that only 61% of restaurant facilities obtains TFPs from their own region-area. For this part of the research, two subsidiary research questions were created, to which answers were obtained by applying appropriate analyses. The first auxiliary question (Q_{2a}) had the task of investigating varieties in intake depending on the features of the respondents. The research showed that age and working experience in the hospitality industry are the most important factors in the decision to acquire TFP from one's area. Respondents up to 30 years of age and from 31 to 41 years of age were singled out here. Observing the working experience of the respondents, the lowest probability of obtaining TFP is among respondents with an experience of 11–15 years (with as much as 60.72%). Younger respondents, with less working experience, perceive TFP as more attractive for business, while older and more experienced respondents stick to well-tested,

lighter and more reliable products, with which they have fewer difficulties in procurement and distribution (Grunert and Aachmann, 2016).

The following supportive question (Q_{2b}) was aimed to investigate the differences in consumption relying on the sort of a restaurant facility. Here, the type of restaurant facility and the region where the restaurant is located were distinguished. Looking at the sort of restaurant facility, the lowest probability of acquiring TFP in the area in which they operate occurs at fast food restaurants, which is expected, given that this type of restaurant uses industrial products that are cheaper and more accessible (Souki et al., 2020). On the other hand, the highest probability for TFPs procurement occurs at a la cart restaurants (86.20%). These results can be explained with probable ease of procurement of these products, i.e., there is a good relation between restaurants and domestic producers who enable easier, faster and safer procurement of TFPs.

Observing the results of the probabilities for the regions-districts in which the restaurants operate, it was concluded that the highest probability for procurement of TFP from their region is with restaurant facilities from Northern Bačka and Southern Bačka, while the lowest probability is in Western Bačka. The study carried out by Stošić et al. (2022), shows that employees in the Northern Bačka highly value all the features of TFP and understand how important their characteristics are, and it is to some extent expected that in that region there will be a high probability of purchasing TFP from their locality. It is important to mention the significant demand of TFP South Bačka as the main administrative area of Vojvodina (Ivanović et al., 2022). This area is economically, economically, and touristically the most developed and has many protected products that can be found on the local market. The following products stand out here: Kulen sausage from Bački Petrovac, smoked meat, shvarga, fresh and pickled cabbage, homemade raspberry, apple, and cherry juices, and elderberry, mint, and lemon balm homemade syrup. These products are significant representatives of traditional cuisine, and as such, they are important in the hospitality and tourism market. The research did not show the influence of the management and the facilities' characteristics on the obtained data on the consumption of TFH from the local market.

6. Conclusion

Based on the set and conducted research on the subject of TFP in the local catering and touristic market realized in the territory of AP Vojvodina, significant conclusions were reached that are related to the influence of social and demographic features of administration staff and features of restaurant facilities as consumers of this type of food, as well as regional disparities. The results showed there is a fluctuation in education level in terms of satisfaction with the TFP offer on the market and that persons employed in managerial positions with only a high school diploma are much more satisfied with the offer compared to other respondents with higher education. Highly educated respondents have diverse opinions about the need for greater diversity in the TFP offer. While the respondents with a completed master's or doctorate degree stood out in terms of attitudes that legal norms make it difficult for them to purchase these products, which is also significantly reflected in the offer in restaurant establishments.

Management whose field of education is catering or tourism pointed out that the prices of TFP are justified by their overall quality, and they are more willing to pay a higher price for these products, but also more satisfied with the ease of purchasing TFP. Employees in local food and national food restaurants have confirmed that guests are looking for dishes prepared from TFP. Employees in restaurants with domestic food offer emphasize that legal norms make it difficult for them to procure and directly offer such products, precisely these restaurants have the highest demand for dishes prepared from these foods. Employees in restaurant facilities in the North Bačka region are most satisfied with the ease of procuring these products, which is conditioned by the development of the area.

The research confirmed that the decision to purchase TFP from their region-area is influenced the most by age and working experience in the hospitality industry, i.e., younger respondents recognize these products as adequate and purchase them. Respondents with longer working experience in the hospitality industry show the least interest in acquiring TFP. Fast food restaurants are the least likely to acquire TFP in the area in which they operate. And the highest probability of purchasing TFP from a la cart restaurants, which is reasonable considering the type of consumers they are intended for. By looking at the structure of the examined management and the characteristics of restaurant facilities in terms of consumption of TFH, no significant regional disparities were noted, except that it is seen that the economic development of the region conditions the number of important protected TFH and their consumption from the local market.

6.1. Practical implications and indication of future research

The obtained data can help in defining gastronomic resources that can be used as a very important touristic resource and contribute to the rural development of the area. By better placement of TFP, responsible planning of the gastronomic offer based on the authentic and traditional offer can be carried out, which can significantly improve the local economy.

The obtained data provides a better insight into the structure and thinking of the holder of the gastronomic offer in a certain locality. Everything mentioned presents a good basis for setting different strategies for the development of the gastronomic and overall touristic offer. The collected data can be used as a resource in the positioning of TFP on the market and the achievement of goals aimed at economic, social, cultural and ecological advantages while improving the principles of sustainability at the local level (Almli et al., 2011; Vanhonacker et al., 2013).

This research will improve the enlargement of opportunities of studies that already exist. Further research should be focused on concrete examples of TFP consumption, as well as on research that is focused on consumers, that is, useful services (residents and tourists), as well as producers on which the placement of TFP on the hospitality and tourism market depends. Associating the three main subjects, TFP producers, restaurants that include them in their offer and guests that consume them, represents the main goal of many projects, and finding a way to implement it could be the subject of some subsequent research, which is supported by various national and international bodies.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

BKP: Conceptualization, Methodology, Supervision, Writing – original draft, Writing – review and editing. DTek: Methodology, Resources, Software, Writing – original draft, Writing – review and editing. SŠ: Conceptualization, Data curation, Investigation, Writing – original draft. AN: Conceptualization, Investigation, Writing – original draft. VI: Investigation, Writing – original draft. MP: Formal Analysis, Investigation, Writing – original draft. MB: Investigation, Methodology, Writing – original draft. BĐ: Investigation, Visualization, Writing – original draft. DTeš: Investigation, Writing – original draft. MČ: Investigation, Writing – original draft. IČa: Investigation, Writing – original draft. IČir: Investigation, Validation, Writing – original draft. VŠ: Formal Analysis, Investigation, Writing – original draft. NM: Investigation, Writing – original draft.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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