

Original scientific article

# THE INFLUENCE OF GEOGRAPHICAL CHARACTERISTICS ON THE GASTRONOMY OF MONTENEGRO: THE ROLE OF EDUCATION AND SECTOR POSITIONS IN THE PERCEPTION OF TOURIST POTENTIAL

Bojana Kalenjuk Pivarski<sup>1</sup>, Zlatibor Milić<sup>3</sup>, Anita Mitrović Milić<sup>3</sup>, Dragana Novaković<sup>2</sup>, Danica Radević<sup>3\*</sup>

Received: September 3, 2025 | Accepted: November 22, 2025

DOI: 10.5937/ZbDght2502128K

## ABSTRACT

*The influence of geographical features on gastronomy is one of the key elements in shaping the identity of tourist destinations, because space and natural resources directly influence the development of culinary practices and authentic offers. For this reason, this work aims to investigate the influence of geographical characteristics on the formation of the gastronomy of Montenegro through the analysis of the perception of employees in tourism. The research was conducted on the territory of Montenegro during the summer tourist season of 2025 and included 344 respondents employed in various activities of the tourism and hospitality sector. Special emphasis was placed on the connection of their perception with the level and field of education, as well as the place of work and work position. The results of the research show that the employees, to a significant extent, recognize the role of geographical specificities—climate, relief, natural resources, and traditions—in shaping the authentic gastronomy of Montenegro, which is important for the development of tourism. However, differences in the degree of recognition of these connections were observed depending on the educational structure and position of the employees. Higher levels of education and interdisciplinary fields of education are associated with a more expressed awareness of the importance of geography for gastronomy, while employees in operational positions showed a more limited perception of spatial-cultural dimensions. The findings of the research indicate the need for additional educational programs and an integrated approach to ensure a coherent strategy for the development of the authentic gastronomic offer of Montenegro, which represents an important potential for differentiation and competitiveness on the international tourism market.*

**Key words:** gastronomy, geographical characteristics, tourism, Montenegro, perception, employees in tourism, education, job position

## INTRODUCTION

Contemporary tourism increasingly tends towards authentic and locally rooted experiences, whereby gastronomy becomes a key element of differentiation of the destination offer (Anton, 2019; Pavlidis Markantonatou, 2020; Dixit Prayag et al., 2022; Kalenjuk Pivarski et al., 2024). The connection between geography and gastronomy is reflected in the way in which the natural and cultural characteristics of a space—including climate, relief,

<sup>1</sup> Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad, 21000 Novi Sad, Serbia  
Faculty of Economics Pale, University of East Sarajevo, 71420 Pale, Bosnia and Herzegovina

<sup>2</sup> Department of Agricultural Economics and Rural Sociology, Faculty of Agriculture, University of Novi Sad, 21000 Novi Sad, Serbia

<sup>3</sup> HEC Faculty of International Management in Tourism and Hospitality, Miločer, Montenegro, corresponding author: [danicaradevic@gmail.com](mailto:danicaradevic@gmail.com)

soil, biodiversity, historical heritage, and local practices—shape the food habits and culinary identity of a certain region (Mora et al., 2021; Pérez-Priego et al., 2023; Kovalenko et al., 2023). Food thus becomes more than just a mere means of nutrition; it represents a means of cultural communication, interpretation of space, and preservation of local identity (Cordova-Buiza, 2024; Lequeux-Dincă et al., 2024). By recognizing these connections, employees in tourism have the opportunity to actively contribute to the preservation of heritage and the improvement of the destination's competitiveness (Basle, 2023; Dina, et al., 2025). However, previous research shows that the perception of geographical influences on gastronomy among employees differs depending on education, job position, and sector affiliation. While some personnel intuitively use local geographical elements as part of the offer, others recognize them exclusively through a marketing or logistics framework (Vuksanović, 2017; Stone et al., 2021; Kalenjuk Pivarski et al., 2023; Solano-Sánchez, 2024; Kalenjuk Pivarski et al., 2024).

In the context of the development of sustainable and culturally responsible tourism, understanding these differences becomes crucial for the formulation of effective educational strategies and the creation of integrated tourism products that reflect the specificities of the area (Stone et al., 2021; Solano-Sánchez, 2024; Kalenjuk Pivarski et al., 2023; Kalenjuk Pivarski et al., 2024; Paunić et al., 2024). All mentioned recognized the need to set up research, the subject of which is the analysis of the perception of employees in tourism about the influence of geographical characteristics on the formation and recognition of the gastronomy of Montenegro. The focus is on how employees perceive the role of geographical location, climatic conditions, natural resources, and cultural diversity in shaping gastronomic specialties, as well as whether there are differences in perception depending on the education and sector position of the respondents.

**The task of this research** is to:

- identify and systematize the perception of tourism employees about the role of geographical characteristics in the development of gastronomy;
- quantitatively analyze the level of agreement of tourism employees with key statements related to the influence of geography on gastronomy;
- determine the existence of potential differences in perception depending on the educational structure and sectoral position.

**The aim of the research** is to determine, through the examination of the degree of agreement of tourism employees with carefully formulated claims, how the influence of geographical characteristics on the gastronomy of Montenegro in tourism is perceived. One particular objective is to determine whether and how the perception of employees is influenced by their level of education and sectoral role. This will facilitate the integration of local resources in the creation of an authentic tourism offer.

The following research questions were developed for this study:

- To what extent do tourism employees recognize the influence of geographical characteristics on the formation of the gastronomy of Montenegro?
- Are there significant differences in employees' perception of the influence of geographical factors on gastronomy depending on the level of education?
- Does the field of education influence the perception of employees about the importance of local geography in the creation of gastronomy?
- Does the perception of the role of geographical characteristics in shaping gastronomy differ depending on the place of work in tourism?
- How does the sectoral position of employees in tourism affect their assessment of the influence of geographical specificities in the development of authentic gastronomy?

## LITERATURE REVIEW

The connection between geography and gastronomy forms an essential part of the identity of each destination, because space determines not only the available resources but also the culinary practices that develop from them. By recognizing these connections, tourism employees can contribute to the preservation of cultural heritage and improve the destination's competitiveness through an authentic gastronomic offer (Anton et al., 2019; Pavlidis Markantonatou, 2020; Dixit, Prayag, 2022). Food in modern tourism becomes a means of cultural com-

munication and development of the local community (Kalenjuk Pivarski et al., 2023; Šmugović et al., 2024). Research has shown that employees who understand the importance of geographic specificities have the potential to improve the overall experience of visitors, which is of particular importance in an era of increasing demand for sustainable and locally rooted practices (Paunić et al., 2024).

The literature in the field of gastronomy and tourism points out that geographical context is crucial for understanding the development of an authentic gastronomic offer (Kalenjuk Pivarski et al., 2024). Authors like Paunić et al. (2024) emphasize how natural features—such as climate, topography, soil fertility, and biodiversity—directly shape available foods and ways of preparing them. However, there is little research focused on tourism employees' perceptions of these factors.

Recent research indicates that employees in hospitality and tourism often unconsciously use local geographic elements as a competitive advantage, although they do not fully articulate their importance (Vuksanović et al., 2017; Bondzi-Simpson, Ayeh, 2019; Kalenjuk Pivarski et al., 2024). This insight into the situation opens up space for a more in-depth understanding of the extent to which these influences are recognized in professional practice.

The difference in educational level is often reflected in the capacity of employees to recognize and interpret the complex interdependencies between geography and gastronomy. According to research in the field of education in tourism (Stone et al., 2021), highly educated personnel more often develop a critical awareness of the importance of local identity in the creation of a gastronomic offer. According to research conducted by Solano-Sánchez et al. (2024), highly educated employees are more inclined to connect authentic cuisine with the sustainable development of the destination, while those with a lower level of education perceive this connection more through the lens of tradition or routine (Bakr et al., 2025; Macêdo et al., 2025). These differences may indicate the need for targeted educational interventions in the tourism sector.

Research in the field of interdisciplinary approaches in gastronomy shows that the academic background of employees significantly shapes their attitudes towards the role of geography in tourism (Paunić et al., 2024). For example, employees with an education in geography, ecology, or tourism are more likely to recognize the importance of local landscape features and their connection to food compared to those with economics or management (Yılmaz et al., 2020). This difference can be explained by the focus of certain areas on the spatial, ecological, and cultural aspects of the destination, which enriches the understanding of how local geography can contribute to the differentiation of the offer. This further underlines the importance of interdisciplinary education in tourism (Stone et al., 2021; Macêdo et al., 2025; Bakr, 2025).

Various tourism jobs ranging from operational staff to management imply different levels of involvement and exposure to the process of shaping the gastronomic offer (Paunić et al., 2024; Kovalenko et al., 2023). According to research, chefs and culinary staff, who are directly involved in the creation of dishes, more often recognize the importance of local geographical resources, while marketing or administrative workers tend to observe gastronomy through the lens of market trends (Mora et al., 2021; Pérez-Priego et al., 2023). These disparities suggest the presence of a “vertical distance” in the perception of local identity through gastronomy within the sector, because the involvement of all levels of employees in educational and promotional activities can contribute to a more uniform recognition of the importance of geographical characteristics (Basle, 2023).

The position of employees within different sectors of tourism (hospitality industry, tour operators, guides, hotel industry) significantly influences the way in which the importance of geographical specificities is assessed (Paunić et al., 2024). For example, research shows that tour guides and educators more often use the narrative of local geography to create an authentic experience, while hoteliers and restaurant managers mostly view geography through a logistics or marketing framework (Yılmaz et al., 2020; Kovalenko et al., 2023). These differences reveal a fragmented approach to the development of the gastronomic offer, which can reduce the coherence of the destination identity. In this context, it is essential to understand sectoral perceptions to integrate the planning of a gastronomic-tourism strategy (Basle, 2023; Mora et al., 2021).

## METHODOLOGY

### *Research site*

The research was conducted on the territory of Montenegro, a destination characterized by extremely rich and diverse geographical features, which makes it a suitable area for analyzing the relationship between geography and gastronomy. Montenegro is known for the evident contrasts between the coastal, mountainous, and continental areas (Djurović, Djurović, 2016; Cimbaljević et al., 2019), whereby each of these entities contributes to the specific shaping of the local cuisine and the creation of an authentic gastronomic offer (Vujačić et al., 2024). Employees in the tourism sector were included as respondents in the research, including various activities such as hospitality, hotel management, travel agencies, and educational institutions related to tourism. This approach made it possible to see a wide range of attitudes and experiences, both those employed in operational positions and those in management and education.

### *Creating a survey questionnaire*

For the purposes of research, a questionnaire was specially designed, which is structured into several thematic units related to the importance and functions of gastronomy in the tourism of Montenegro, examined from the point of view of employees in tourism. The questionnaire was previously validated through a process of testing and expert verification, which ensured its reliability and relevance for the subject of the research. This paper presents the results of the segment that focuses on the employees' perception of the influence of geographical characteristics on the design of the gastronomic offer.

In addition to sociodemographic characteristics and the characteristics of the respondents' education and work environment, the part of the questionnaire dedicated to this topic contained five statements, which the respondents evaluated using a Likert scale from 1 (completely disagree) to 5 (completely agree). The claims included views on the role of geographical location, climatic conditions, natural resources, and traditional methods of food preparation in shaping the authentic cuisine of Montenegro, as well as on their importance for the development of the tourism offer. The statements were based on the findings of previous relevant studies in the field of gastronomy and geographic determinism (Anton et al., 2019; Pavlidis and Markantonatou, 2020; Kalenjuk Pivarski et al., 2023; Cordova-Buiza et al., 2024; Paunić et al., 2024), which enabled the instrument to be based on theoretical foundations and adapted to the specific research context.

### *Research implementation and sample size*

The research was conducted in the period from the beginning of June to the middle of September 2025, during the summer tourist season, when the largest number of employees in the tourism and hospitality industry are engaged. A total of 344 valid questionnaires were processed, which represents a reliable basis for analyzing the perception of tourism employees about the connection between geographic specificities and gastronomy.

### *Statistical analysis*

The data collected in the research were first processed using descriptive statistics to obtain an overview of the socio-demographic characteristics of the respondents and the characteristics of the facilities where they are employed. Before applying further statistical procedures, assumptions of normality and homogeneity of variance were checked by the Kolmogorov-Smirnov and Levene's tests. The results indicated that the data distribution deviates from the normal distribution and that the variances are not homogeneous. Therefore, non-parametric tests were used to compare differences between groups. The Kruskal-Wallis test (Kruskal & Wallis, 1952) was used to analyze differences in respondents' perception of geographic characteristics. When statistically signifi-

cant differences ( $p < 0.05$ ) were found, post-hoc Dunn's analysis with Bonferroni correction was performed to identify pairs of groups with significant differences. The internal consistency of the Likert scale was assessed using the Cronbach  $\alpha$  coefficient ( $\alpha = 0.858$ ), which indicates high measurement reliability. All analyses were performed in R 4.3.2 software.

## RESEARCH RESULTS

### *Analysis of socio-demographic and employment characteristics of respondents*

The first part of the analysis includes descriptive statistics of socio-demographic characteristics of the respondents, among which data on education and work environment are important for this research. The structure of the sample and the main characteristics of the respondents are shown in tables 1, 2, and 3.

As already mentioned in the methodology, a total of 344 respondents participated in the sample. Women made up 51.7% of respondents, while men represented 48.3%. Looking at the age structure, the group of respondents under 29 years of age (32.3%) had the largest participation, followed by the group of 40 to 49 years (28.8%), while the group of 50 and over was the least represented (18.6%) (Table 1).

**Table 1.** Descriptive statistics of socio-demographic characteristics of respondents

Variable	Category	No.	%
Sex	Male	166	48.3
	Female	178	51.7
Age	Up to 29	111	32.3
	30–39	70	20.3
	40–49	99	28.8
	50 and more	64	18.6

Source: Processed by the author

When it comes to the level of education, 36% of the respondents have completed college or university, 28.2% master's or doctoral studies, 20.9% high school, and 14.8% college. According to the field of education, the largest percentage of respondents comes from the field of food technology, agriculture, and chemistry (43%), followed by tourism and catering (20.6%), while the least number of respondents comes from economics, law, and management (8.1%) (Table 2).

**Table 2.** Descriptive statistics on the level and field of education of the respondents

Variable	Category	No.	%
Highest level of education	High school	72	20.9
	College	51	14.8
	University/Bachelor	124	36.0
	Master's / Doctoral studies	97	28.2
Education area	Tourism and hospitality	71	20.6
	Economics, law, management	28	8.1
	Food technology, agriculture, chemistry	148	43.0
	Other	97	28.2

Source: Processed by the author

The majority of respondents are employed in hospitality establishments for providing accommodation services (32.6%) and in hospitality establishments for providing food and beverage services (29.4%), while 12.8% work in travel agencies and organizations and 25.3% in educational institutions in the field of tourism and hospitality (secondary vocational schools, colleges, and universities). When looking at the job position, 30.8% of participants perform operational tasks, 24.7% work in senior management, and 25.3% in education, while 19.2% work in operational management positions (Table 3).

**Table 3.** Descriptive statistics of the place and position of the respondent's work

Variable	Category	No.	%
Job organization	Travel agency / Tourism organization	44	12.8
	Accommodation facility	112	32.6
	Food and beverage service facility	101	29.4
	Tourism and hospitality educational institution	87	25.3
Job position	Operational jobs (receptionist, tour guide, hostess, cook, waiter, sommelier, bartender, etc.)	106	30.8
	Middle management (front office manager, restaurant manager, executive chef, etc.)	66	19.2
	Senior management (director, owner, etc.)	85	24.7
	Education (teacher, professor, practitioner, etc.)	87	25.3

Source: Processed by the author

#### *Analysis of the perception of tourism employees on the relationship between geographical features and gastronomy*

The results of a descriptive statistical analysis of the perception of tourism employees on the relationship between geographic characteristics and gastronomy are presented in Table 4. It is evident from the results that the respondents largely agree with the statement that the specifics of the geographical area play a key role in creating distinctive gastronomy (AS=4.03). Respondents showed the lowest degree of agreement with the statement that traditional ways of preparing food in the region are adapted to specific natural conditions (AS=4.05).

**Table 4.** Descriptive statistics of the perception of employees in tourism about the relationship between geographical characteristics and gastronomy

Statement	Arithmetic mean	Standard deviation
1. The geographical location of the area shapes the characteristic food products.	3.82	0.948
2. The specificities of the geographical area play a key role in creating a distinctive gastronomic offer.	3.83	1.043
3. The climatic conditions of the region have a direct impact on the availability and quality of local foods.	4.03	0.924
4. Traditional ways of preparing food in the region are adapted to specific natural conditions.	3.53	1.153
5. The diversity of cultures in the region is reflected in the wide range of gastronomic specialties.	3.84	1.032

Source: Processed by the author

## ***Analysis of differences in the level of education of tourism employees and their perception of the connection between geographic characteristics and gastronomy***

Using the Kruskal–Wallis test, an analysis was performed to determine whether there are differences between the respondents' level of education in terms of their perception of the connection between geographic characteristics and gastronomy (Table 5).

After the test, it was determined that there is a statistically significant difference in the level of education of the respondents and their perception that the geographic location of the area shapes characteristic food products ( $p<0.05$ ). The results of the post-hoc analysis determined that there are statistically significant differences between respondents with completed secondary school and respondents with higher education ( $p=0.023$ ), as well as between respondents with completed master's or doctoral studies and respondents with completed secondary school or higher education ( $p=0.000$ ;  $p=0.000$ ). Respondents with completed master's or doctoral studies expressed the highest degree of agreement with this statement compared to all other groups of respondents.

Statistically significant differences ( $p<0.05$ ) in the level of education of the respondents were also observed in the claim that the specifics of the geographical area play a key role in creating a distinctive gastronomic offer. The results of post-hoc tests revealed significant differences between respondents with a high school diploma and respondents with higher education or master's/doctoral studies ( $p=0.000$ ;  $p=0.023$ ). The results of post-hoc tests also showed significant differences between respondents with a college degree and respondents with a higher education ( $p=0.006$ ), with the respondents with a higher education showing the highest degree of agreement with this statement.

Based on the results shown in the table, it can be seen that there are statistically significant differences ( $p<0.05$ ) in the level of education of the respondents in the statement that the climatic conditions of the region have a direct impact on the availability and quality of local foods, and the post-hoc analysis determined that there are differences between respondents with a higher education and respondents with a secondary school or higher education ( $p=0.001$ ;  $p=0.004$ ). Respondents with completed higher education expressed the highest degree of agreement with the statement that the climatic conditions of the region have a direct impact on the availability and quality of local foods.

The results also revealed statistically significant differences in the level of education of respondents in the claim that the traditional ways of preparing food in the region are adapted to specific natural conditions. Post-hoc testing revealed that there are significant differences between respondents who completed high school and respondents who have higher education or completed master's/doctoral studies ( $p=0.002$ ;  $p=0.000$ ), respondents who completed high school expressed the lowest degree of agreement with this statement.

**Table 5.** Kruskal–Wallis test of differences in the level of education of employees in tourism and their perception of the connection between geographical characteristics and gastronomy

Statement	Arithmetic mean				p-value
	High school	College	University	Master's/Doctoral	
The geographical location of the area shapes the characteristic food products.	3.47	3.65	3.89	4.09	0.000
The specificities of the geographical area play a key role in creating a distinctive gastronomic offer.	3.40	3.71	4.03	3.95	0.000
The climatic conditions of the region have a direct impact on the availability and quality of local foods.	3.76	4.39	4.02	4.04	0.008
Traditional ways of preparing food in the region are adapted to specific natural conditions.	3.03	3.37	3.69	3.78	0.002
The diversity of cultures in the region is reflected in the wide range of gastronomic specialties.	3.57	3.84	3.85	4.03	0.081

Source: Processed by the author

## ***Analysis of differences in the field of education of tourism employees and their perception of the connection between geographical characteristics and gastronomy***

In the following part of the research, using the Kruskal-Wallis test, an analysis was performed to see if there are differences between the respondents' fields of education regarding their perception of the connection between the geographic characteristics of gastronomy (Table 6).

**Table 6.** Kruskal-Wallis test of differences in the field of education of employees in tourism and their perception of the connection between geographical characteristics and gastronomy

Statement	Arithmetic mean				p-value
	Tourism and hospitality	Economy, law, management	Food technology, agriculture, chemistry	Other	
The geographical location of the area shapes the characteristic food products.	3.58	3.57	3.93	3.92	0.179
The specificities of the geographical area play a key role in creating a distinctive gastronomic offer.	3.45	4.11	3.99	3.78	0.000
The climatic conditions of the region have a direct impact on the availability and quality of local foods.	3.75	4.29	4.09	4.05	0.190
Traditional ways of preparing food in the region are adapted to specific natural conditions.	3.08	3.11	3.82	3.55	0.000
The diversity of cultures in the region is reflected in the wide range of gastronomic specialties.	3.77	3.86	3.84	3.89	0.464

Source: Processed by the author

The results of the test revealed that there is a statistically significant difference in the field of education of the respondents in the claim that the specifics of the geographical area play a key role in creating a distinctive gastronomic offer ( $p<0.05$ ). Based on the results of the post-hoc test, it was determined that statistically significant differences exist between respondents whose field of education is tourism or catering and respondents whose field of education is economics, law, management, technology, agriculture or chemistry ( $p=0.000$ ;  $p=0.000$ ). Post-hoc tests also indicated that there are significant differences between respondents who indicated something else as their field of education and respondents whose field of education is economics, law, management, food technology, agriculture or chemistry ( $p=0.002$ ;  $p=0.035$ ), whereby respondents whose field of education is economics, law or management expressed the highest degree of agreement with this statement.

Regarding the respondents field of education, statistically significant differences ( $p<0.05$ ) were also found regarding the claim that the traditional ways of food preparation in the region are adapted to specific natural conditions, and a post-hoc test found that there are differences between the respondents whose field of education is catering or tourism and those whose field of education is economics, law or management. In addition, the differences were also found between the respondents whose field of education is food technology, agriculture or chemistry and the respondents whose field of education is tourism and hospitality ( $p=0.001$ ;  $p=0.011$ ), as well as between the respondents who have an education in economics, law or management and the respondents who have an education in food technology, agriculture or chemistry ( $p=0.002$ ). Respondents whose field of education is food technology, agriculture or chemistry expressed the highest degree of agreement with this statement, while respondents who have education in tourism or hospitality showed the lowest degree of agreement with this statement.

## ***Analysis of differences in the place of work of tourism employees and their perception of the connection between geographical characteristics and gastronomy***

Using the Kruskal–Wallis test, an analysis was performed to determine whether there are differences between the respondents' workplaces regarding their peer perception of the relationship between geographic characteristics and gastronomy (Table 7).

**Table 7.** Kruskal–Wallis test of differences in the place of work of tourism employees and their perception of the connection between geographical characteristics and gastronomy

Statement	Arithmetic mean				p-value
	Travel agency / Tourism organization	Accommodation facility	Food and beverage service facility	Tourism and hospitality educational institution	
The geographical location of the area shapes the characteristic food products.	4.02	3.70	3.64	4.09	0.001
The specificities of the geographical area play a key role in creating a distinctive gastronomic offer.	3.76	3.79	3.66	4.16	0.006
The climatic conditions of the region have a direct impact on the availability and quality of local foods.	3.98	4.00	4.15	3.94	0.864
Traditional ways of preparing food in the region are adapted to specific natural conditions.	3.66	3.38	3.25	3.99	0.001
The diversity of cultures in the region is reflected in the wide range of gastronomic specialties.	3.57	3.96	3.60	4.10	0.001

Source: Processed by the author

The results of the test revealed that there is a statistically significant difference in the place of work of the examinee in the claim that the geographic location of the area shapes characteristic food products ( $p<0.05$ ). Based on the results of the post-hoc test, it was determined that statistically significant differences exist between respondents whose place of work is a hospitality establishment that provides food and beverage services and all other groups of respondents ( $p=0.000$ ;  $p=0.031$ ;  $p=0.000$ ). Respondents whose place of work is an educational institution in the field of tourism and hospitality showed the highest, and respondents whose place of work is a hospitality establishment that provides food and beverage services with the lowest degree of agreement with this statement. Based on the results shown in the previous table, it can be seen that statistically significant differences ( $p<0.05$ ) in the place of work of the respondents were also established for the claim that the specifics of the geographical area play a key role in creating a distinctive gastronomic offer. The results of the post-hoc analysis revealed that there are differences between respondents whose workplace is a hospitality establishment that provides food and beverage services and respondents whose workplace is a hospitality facility primarily providing accommodation services and an educational institution in the field of tourism and hospitality ( $p=0.024$ ;  $p=0.000$ ). Respondents whose workplace is an educational institution in the field of tourism and hospitality expressed the highest degree of agreement with this statement.

Statistically significant differences ( $p<0.05$ ) in the place of work of the respondents were also found in the claim that the traditional ways of preparing food in the region are adapted to specific natural conditions, and a post-hoc test found that there are differences between respondents whose place of work is a hospitality establishment that provides food and beverage services and respondents whose place of work is a travel agency or tourism organization or an educational institution in the field of tourism and hospitality ( $p=0.006$ ;  $p=0.000$ ), as well as between respondents whose place of work is a hospitality establishment for providing primarily accommodation services and educational institutions in the field of tourism and hospitality ( $p=0.001$ ). Respondents

whose place of work is an educational institution in the field of tourism and hospitality expressed the highest degree of agreement with this statement as well. Based on the results of the test, a statistically significant difference ( $p<0.05$ ) was observed in the place of work of the respondents and in the statement that the diversity of cultures in the region is reflected in a wide range of gastronomic specialties, and post-hoc analysis determined that there are differences between respondents whose workplace is an educational institution in the field of tourism and hospitality and respondents whose workplace is a travel agency or tourism organization, as well as respondents whose workplace is a hospitality establishment that provides food and beverage services ( $p=0.019$ ;  $p=0.019$ ), respondents whose place of work is an educational institution in the field of tourism and hospitality expressed the highest degree of agreement with this statement as well.

### ***Analysis of differences in the job position of employees in tourism and their perception of the connection between geographic characteristics and gastronomy***

In the last part of the research, using the Kruskal-Wallis test, an analysis was performed to see if there are differences between the respondents' work positions regarding their perception of the relationship between geographic characteristics and gastronomy (Table 8).

**Table 8.** Kruskal-Wallis test of differences in the job position of employees in tourism and their perception of the connection between geographical characteristics and gastronomy

Statement	Arithmetric mean				p-value
	Operational jobs	Middle management	Senior management	Education	
The geographical location of the area shapes the characteristic food products.	3.67	3.74	3.80	4.09	0.027
The specificities of the geographical area play a key role in creating a distinctive gastronomic offer.	3.77	3.62	3.72	4.16	0.015
The climatic conditions of the region have a direct impact on the availability and quality of local foods.	3.93	4.23	4.07	3.94	0.195
Traditional ways of preparing food in the region are adapted to specific natural conditions.	3.35	3.56	3.27	3.99	0.000
The diversity of cultures in the region is reflected in the wide range of gastronomic specialties.	3.87	3.67	3.68	4.10	0.116

Source: Processed by the author

The results of the test revealed that there is a statistically significant difference in the working position of the respondents in the claim that the geographical position of the area shapes characteristic food products ( $p<0.05$ ). Based on the results of the post-hoc test, it was determined that statistically significant differences exist between respondents whose job position is education and respondents in the position of operational affairs or operational management ( $p=0.011$ ;  $p=0.008$ ). Respondents in the position of operational management expressed the lowest degree of agreement with this statement.

Statistically significant differences ( $p<0.05$ ) in the job position of the respondents were also observed in the claim that the specifics of the geographical area play a key role in creating a distinctive gastronomic offer. The results of the post-hoc test indicated that there are differences between respondents engaged in education and respondents in operational or senior management positions ( $p=0.002$ ;  $p=0.019$ ); respondents engaged in education expressed the highest degree of agreement with this statement.

Based on the results shown in the previous table, it can be observed that there are statistically significant differences ( $p<0.05$ ) in the work position of the respondents and in the statement that the traditional ways of food preparation in the region are adapted to specific natural conditions, and post-hoc analysis found that there are differences between respondents engaged in education and all other groups of respondents ( $p=0.001$ ;  $p=0.014$ ;  $p=0.000$ ), respondents engaged in education expressed the highest degree of agreement with this statement.

## DISCUSSION OF RESULTS

Based on the results, it was noted that employees in tourism recognize to a significant extent that geographical specificities play a key role in shaping gastronomy and its offer. Which is confirmed by other research, emphasizing that space shapes not only the available resources but also the culinary practices that develop on them (Anton et al., 2019; Dixit, Prayag, 2022). Recognizing the importance of the geographic context for the creation of an authentic offer contributes to the preservation of cultural heritage and strengthening the competitiveness of destinations (Kalenjuk Pivarski et al., 2023; Šmugović et al., 2024). However, certain aspects, such as the connection between natural conditions and traditional ways of preparing food, are not equally strongly recognized among all employees in tourism in Montenegro. We find similar observations in earlier works, which indicate that employees in tourism and hospitality often use local geographical elements in the offer, but without a clear articulation of their full significance (Vukasanović et al., 2017; Bondzi-Simpson, Ayeh, 2019; Ivanović et al., 2022).

The results also indicate that the educational level of employees strongly influences the way in which the connection between geographical features and gastronomy is perceived. Employees with higher levels of education (master's and doctoral studies) show a greater ability to perceive and critically evaluate the importance of local geography for the development of authentic cuisine, while employees with lower education more often see this connection through the prism of routine or tradition. Such findings confirm earlier research according to which highly educated personnel more often develop a critical awareness of the importance of local identity and sustainable development of destinations (Stone et al., 2021; Solano-Sánchez et al., 2024). On the other hand, less educated employees may show a limited understanding of complex connections, which points to the need for additional educational programs in the tourism sector (Bakr et al., 2025; Macêdo et al., 2025).

It was observed that the field of education significantly affects the perception of geographical factors. Unexpectedly, respondents with an education in tourism and hospitality did not show the highest degree of agreement, while employees from the fields of economics, law, and management expressed a stronger awareness of the importance of geography for the gastronomic identity of the destination. On the other hand, respondents from the fields of agriculture, chemistry, and food technology mostly emphasize the connection between natural conditions and the way food is prepared. Such findings fit in with previous claims that the focus of certain disciplines (e.g., ecology, geography or agriculture) encourages a more developed understanding of spatial-cultural characteristics in gastronomy (Yilmaz et al., 2020). This confirms the importance of interdisciplinary education for the differentiation of the tourism offer and the creation of a comprehensive understanding of the importance of the geographical context (Stone et al., 2021; Bakr, 2025).

The results indicated that employees in educational institutions in the field of tourism and hospitality mostly recognize the importance of geographical characteristics for the creation of a gastronomic offer. In contrast, employees in hospitality establishments that provide food and beverage services express the lowest degree of agreement with these statements. This finding confirms earlier research that emphasizes that operational personnel often observe gastronomy primarily through the prism of practical tasks and market trends, while educational institutions develop a broader theoretical understanding of the spatial-cultural aspects of gastronomy (Mora et al., 2021; Pérez-Priego et al., 2023). Differences in the workplace thus become an important factor in the formation of attitudes, because they shape the experience of employees and their attitude towards local gastronomy.

The research showed that employees in positions in education have the most developed awareness of the role of geographical factors in the creation of a gastronomic offer, while operational and managerial personnel express a weaker degree of agreement. Similarly, chefs and culinary staff more often recognize the importance of local resources because they are directly involved in the food preparation process, while managers more often

view gastronomy through a logistics and marketing framework (Paunić et al., 2024). Such differences confirm the existence of “vertical distance” in the perception of geographic identity within the sector, which is already recognized in the literature (Yilmaz et al., 2020; Basle, 2023). In this sense, the inclusion of all levels of employees in the education and promotion processes can contribute to a more even understanding of the importance of geographical specificities and the creation of a more coherent gastronomic-tourism strategy (Paunić et al., 2024; Kovalenko et al., 2023).

## CONCLUSION

Based on the conducted research, it can be concluded that employees in Montenegro’s tourism sector largely recognize the importance of geographical characteristics in shaping gastronomy and its role in tourism, and that space and culture play a deeply rooted role in creating a destination’s identity. The authenticity and competitiveness of Montenegro’s gastronomic offer are primarily determined by its geographic specificities, which include climate, relief, local resources, and traditions.

### ***Significance and Implications of the Results***

The research showed that the level of education and professional position significantly influence the depth of understanding of the connection between geographical features and gastronomy. Higher levels of education and interdisciplinary knowledge enable a clearer and more in-depth understanding of geographical impacts, while employees with lower education levels and primarily operational experience demonstrated a more limited perception of the broader cultural-spatial context.

These differences indicate the need for strategic investment in the education of tourism and hospitality employees, with the aim of achieving a unified understanding and coordinated action in the promotion of local gastronomy. It is especially important to include all sectoral and hierarchical levels—from operational staff to management and educators—in the development of a sustainable and authentic gastronomic offer.

Only through the integration of geographical specificities into gastronomic-tourism strategies can Montenegro fully recognize and utilize its authentic potential, transforming gastronomy from a functional hospitality segment into a key symbol of cultural identity and international recognition.

### ***Research Limitations and Recommendations for Future Studies***

The research was exclusively focused on employees in the tourism and hospitality sectors, without including the broader public (local population) and tourists, who also play a significant role in shaping perceptions of gastronomy and the influence of geographical factors on the destination’s tourist identity. This limits the understanding of the broader social and cultural context in which gastronomy is perceived and valued as part of cultural heritage.

Additionally, the research primarily relied on quantitative data. Combining it with qualitative methods could have provided a deeper and more nuanced insight into the experiences and perceptions of both employees and consumers. Therefore, the following is critical for future research:

- Expanding the sample to include the local population and tourists;
- Applying mixed methods—both quantitative and qualitative—to provide a more comprehensive understanding of how the tourism identity is shaped by geographical and gastronomic characteristics.

Improvements to the practice:

- Strategic investment in education—development of training programs and professional courses that integrate geography, cultural studies, and gastronomy, accessible to all hierarchical levels of employees. Special emphasis should be placed on strengthening competencies among employees

in operational positions, who, according to the findings, demonstrated a narrower perception of spatial and cultural dimensions.

– Interdisciplinary approach—encouraging collaboration between professionals in tourism, geography, gastronomy, and hospitality to develop a coordinated strategy for the authentic gastronomic offer of Montenegro as a competitive element in the international tourism market.

## Acknowledgements

The authors gratefully acknowledge the support of the Ministry of Science, Technological Development, and Innovation of the Republic of Serbia (Grants No. 451-03-137/2025-03/ 200125 and 451-03-136/2025-03/200125).

## REFERENCES

Anton, C., Camarero, C., Laguna, M., Buhalis, D. (2019). Impacts of authenticity, degree of adaptation and cultural contrast on travellers' memorable gastronomy experiences. *Journal of Hospitality Marketing & Management*, 28, pp. 743 - 764. <https://doi.org/10.1080/19368623.2019.1564106>.

Bakr, A., Ali, E., Aljurayyad, S., Fathy, E., Fouad, A. (2025). From Authenticity to Sustainability: The Role of Authentic Cultural and Consumer Knowledge in Shaping Green Consumerism and Behavioral Intention to Gastronomy in Heritage Restaurants in Hail, Saudi Arabia. *Sustainability*, 17, 3530. <https://doi.org/10.3390/su17083530>.

Basle, N. (2023). Evaluating Gastronomic Destination Competitiveness through Upscale Gastronomy. *Sustainability*, 15(14):11157. <https://doi.org/10.3390/su151411157>.

Bondzi-Simpson, A., Ayeh, J. (2019). Assessing hotel readiness to offer local cuisines: a clustering approach. *International Journal of Contemporary Hospitality Management*, 31/2, 998-1020. <https://doi.org/10.1108/IJCHM-12-2017-0820>.

Cimbaljević, M., Demirović, D., Vuksanović, N., Milentijević, N., Yamashkin, A. (2019). A GIS-based analysis of tourist distribution in Montenegro. *Journal of the Geographical Institute Jovan Cvijić, SASA*, 69(2), 147–156. <https://doi.org/10.2298/ijgi1902147c>.

Cordova-Buiza, F., García-García, L., Castaño-Prieto, L., Valverde-Roda, J. (2024). Gastronomy's influence on choosing cultural tourism destinations: a study of Granada, spain. *GeoJournal of Tourism and Geosites*, 55(3), 1124-1133. <https://doi.org/10.30892/gtg.55313-1285>.

Dina, S., Hadiwijoyo, S., De Fretes, C. (2025). Collaborative Governance in the Development of Salatiga as a Creative City of Gastronomy. *Journal of Management and Administration Provision*, 5(1), 110-129. <https://doi.org/10.55885/jmap.v5i1.574>.

Dixit, S., Prayag, G. (2022). Gastronomic tourism experiences and experiential marketing. *Tourism Recreation Research*, 47, 217 - 220. <https://doi.org/10.1080/02508281.2022.2065089>.

Djurović, P., Djurović, M. (2016). Physical Geographic Characteristics and Sustainable Development of the Mountain Area in Montenegro. In: *Sustainable Development in Mountain Regions: Southeastern Europe*, Springer, 93-111. [https://doi.org/10.1007/978-3-319-20110-8\\_8](https://doi.org/10.1007/978-3-319-20110-8_8).

Ivanović, V., Kalenjuk Pivarski, B., Šmugović, S. (2022). Traditional gastronomy products: Usage and significance in tourism and hospitality of southern Bačka (AP Vojvodina). *Zbornik radova Departmana za geografiju, turizam i hotelijerstvo*, 51-1, 64-72. [10.5937/ZbDght22010641](https://doi.org/10.5937/ZbDght22010641)

Kalenjuk Pivarski, B., Grubor, B., Banjac, M., Đerčan, B., Tešanović, D., Šmugović, S., Radivojević, G., Ivanović, V., Vujsinović, V., & Stošić, T. (2023). The Sustainability of Gastronomic Heritage and Its Significance for Regional Tourism Development. *Heritage*, 6(4), 3402-341. <https://doi.org/10.3390/heritage6040180>.

Kalenjuk Pivarski, B., Tešanović, D., Šmugović, S., Ivanović, V., Paunić, M., Vojnović, D., Vujsinović, V., Jaraković, S. (2024). Gastronomy as a Predictor of Tourism Development—Defining Food-Related Factors from the Perspective of Hospitality and Tourism Employees in Srem (A.P. Vojvodina, R. Serbia). *Sustainability*, 16(24), 10834 <https://doi.org/10.3390/su162410834>.

Kovalenko, A., Dias, Á., Pereira, L., Simões, A. (2023). Gastronomic Experience and Consumer Behavior: Analyzing the Influence on Destination Image. *Foods*, 12(2), 315 <https://doi.org/10.3390/foods12020315>.

Kruskal, W. H., Wallis, W. A. (1952). Use of ranks in one-criterion variance analysis. *Journal of the American Statistical Association*, 47(260), 583–621. <https://doi.org/10.1080/01621459.1952.10483441>

Lequeux-Dincă, A., Preda, M., Vijulie, I. (2024). Authentic Romanian Gastronomy—A Landmark of Bucharest's City Center. *Tourism and Hospitality*, 5(2), 251-275. <https://doi.org/10.3390/tourhosp5020017>.

Macêdo, A., Soares, J., Solla, X. (2025). Cultural Aspects and Sustainability in Gastronomic Places: Analysis in Tourist Cities in Brazil and Europe. *Revista JRG de Estudos Acadêmicos*, 8, 18, e081933. <https://doi.org/10.55892/jrg.v8i18.1933>.

Mora, D., Solano-Sánchez, M., López-Guzmán, T., Moral-Cuadra, S. (2021). Gastronomic experiences as a key element in the development of a tourist destination. *International Journal of Gastronomy and Food Science*, 25, 100405. <https://doi.org/10.1016/J.IJGFS.2021.100405>.

Paunić, M., Pivarski, B., Tešanović, D., Novaković, D., Šmugović, S., Šarenac, N., Ivanović, V., Mlinarević, P., Marjanović, J. (2024). Gastronomic Identity Factors in the Function of Sustainable Gastronomy: A Case Study of Tourist Destinations in the Republic of Serbia and Bosnia and Herzegovina. *Sustainability*, 16(19), 8493. <https://doi.org/10.3390/su16198493>.

Pavlidis, G., Markantonatou, S. (2020). Gastronomic tourism in Greece and beyond: A thorough review. *International Journal of Gastronomy and Food Science*, 21, 100229. <https://doi.org/10.1016/j.ijgfs.2020.100229>

Pérez-Priego, M., García, M., Jara-Alba, C., Caro-Barrera, J. (2023). Local gastronomy as a destination tourist attraction: The case of the 'Chiringuitos' on the Costa del Sol (Spain). *International Journal of Gastronomy and Food Science*, 34, 100822. <https://doi.org/10.1016/j.ijgfs.2023.100822>.

Solano-Sánchez, M., Mora, D., Hidalgo-Fernández, A., Moral-Cuadra, S. (2024). Gastrotourists' profiles through their motivations, opinions, and perceptions: An artificial neural networks approach. *International Journal of Tourism Research*, 26/3. <https://doi.org/10.1002/jtr.2655>.

Stone, M., Migacz, S., Wolf, E. (2021). Learning through culinary tourism and developing a culinary tourism education strategy. *Journal of Tourism and Cultural Change*, 20, 177 - 195. <https://doi.org/10.1080/14766825.2021.1876078>.

Vujačić, V., Kukanja, M., Janinović, J. (2024). National Gastronomy and Gastronomic Tourism of Montenegro on its Way to the European Union. *EU agrarian Law*, 13, 17 - 24. <https://doi.org/10.2478/eual-2024-0008>.

Vuksanović, N., Tešanović, D., Kalenjuk, B., Portić, M., Knežević, M. (2017). Socio-demographic characteristics as determinants of differences in perception of local gastronomy. *Ekonomika Poljoprivrede*, 64, 359-373. <https://doi.org/10.5937/EKOPOLJ1701359V>.

Yılmaz, G., Kılıçarslan, D., Caber, M. (2020). How does a destination's food image serve the common targets of the UNESCO creative cities network?. *International Journal of Tourism Cities*, 6(4), 785-812.

Šmugović, S., Kalenjuk Pivarski, B., Ivanović, V., Tešanović, D., Novaković, D., Marić, A., ... Paunić, M. (2024). The Effects of the Characteristics of Catering Establishments and Their Managers on the Offering of Dishes Prepared with Traditional Food Products in Bačka Region, Serbia. *Sustainability*, 16(17), 7450.

**CONFLICTS OF INTEREST** The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. © 2025 by the authors. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

## ORCID

Bojana Kalenjuk Pivarski <https://orcid.org/0000-0003-0661-5359>  
 Zlatibor Milić <https://orcid.org/0009-0004-5289-1682>  
 Anita Mitrović Milić <https://orcid.org/0009-0008-0586-6686>  
 Dragana Novaković <https://orcid.org/0000-0002-1924-6196>  
 Danica Radević <https://orcid.org/0009-0006-2168-3690>