

Green Restaurants: A Strategy for Promoting Eco-Gastronomy Tourism in Cities of Vojvodina (Serbia)

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Abstract

The concept of green restaurants has a significant impact on the promotion of eco-gastronomy tourism. This research investigates the potential of green restaurants as a sustainable tourism strategy with the objective of enhancing the appeal of urban tourist destinations in Vojvodina (Serbia). The survey was carried out between February and November 2024 in restaurants located in four urban destinations within the Autonomous Province of Vojvodina (Novi Sad, Subotica, Sombor, and Zrenjanin), with a total of 287 respondents participating. The research findings showed a connection between attitudes towards gastronomy tourism and green restaurants, as well as between the importance of green practices and attitudes towards these types of restaurants. In addition, knowledge and interest in gastronomy significantly influence their desire to visit destinations with green restaurants. The results suggest that promoting green restaurant initiatives could position the cities of Vojvodina as competitive destinations for eco-gastronomy tourism.

Keywords: Green restaurants, Eco-gastronomy tourism, Sustainability, Vojvodina (Serbia)

Introduction

The concept of green business emerged in the late 20th century in response to growing concerns over environmental degradation and the unsustainable use of natural resources (Čekavičius et al., 2014). With the global rise of environmental concerns, the adoption of green practices in food service establishments has become increasingly essential (Abdou et al., 2023). Green tourism is gaining prominence within the hospitality and restaurant sectors, mirroring a global trend toward sustainability and increased environmental awareness (Baloch et al., 2023). The restaurant industry has a considerable environmental footprint, characterized by high levels of food and plastic waste, significant greenhouse gas emissions, and intensive consumption of water and energy (Madanaguli et al., 2022). A study in restaurant management classifies green practices into two types: food-focused and environment-focused. While food is

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the primary factor influencing customer choice, environmental efforts (e.g., water and energy conservation) serve as supplementary elements that address consumers' ecological concerns and psychological needs (Xu, Jeong, 2019). Among the numerous initiatives aimed at fostering sustainability, green restaurants have gained significant attention (Güneş, 2019). The concept of eco-gastronomy tourism, which blends ecological responsibility with culinary experiences, presents a unique opportunity for regions seeking to enhance their appeal as tourist destinations. Vojvodina, a region renowned for its cultural diversity, agricultural abundance, and rich gastronomic traditions, is particularly well-suited to embrace this approach. By incorporating green restaurant practices into its urban tourism strategy, Vojvodina's cities can distinguish themselves as destinations that prioritize both cultural heritage and environmental sustainability. Despite the global expansion of green restaurants, their integration within Vojvodina's urban tourism framework is still limited. Furthermore, there is a scarcity of comprehensive studies into the relationship between consumer attitudes toward gastronomy tourism and perceptions of green restaurants in this setting. Understanding this connection is critical for creating effective strategies that link local tourism activities to global environmental trends. The growing interest in sustainable practices among travelers worldwide suggests that there is potential to capitalize on this shift in consumer behavior by incorporating green restaurant practices into Vojvodina's tourism offerings. With increasing global awareness of environmental issues and a growing emphasis on responsible consumption, the role of green restaurants in shaping tourists' perceptions and experiences is becoming more significant. Exploring how these practices can be integrated into local tourism strategies may provide valuable insights for policymakers, businesses, and communities looking to enhance their sustainability efforts and attract eco-conscious visitors. The aim of this study is to investigate the role of green restaurants in fostering eco-gastronomy tourism within the urban centers of Vojvodina. Specifically, it examines the interrelationships between consumer attitudes toward gastronomy tourism, the perceived significance of green practices, knowledge and interest in gastronomy, and their influence on attitudes toward green restaurants and the intention to visit such establishments. The findings aim to contribute to sustainable tourism development strategies and enhance the positioning of Vojvodina's cities as appealing destinations for eco-conscious travelers.

Literature review

Research on green restaurants and eco-gastronomy tourism reveals positive consumer attitudes and intentions towards these environmentally-friendly dining options. Studies show that consumers' knowledge of green restaurants significantly influences their environmental concerns and attitudes (Wu et al., 2013). Perceptions of green restaurant attributes positively influence attitudes, which in turn affect visit intentions, with altruism moderating this relationship (Shen, 2017). Green restaurants are seen as tools for developing eco-gastronomy tourism, offering visitors authentic cultural experiences through local food and products (Elsehely, Elsayed, 2024). These studies highlight the importance of environmental awareness, personal values, and attitudes in shaping consumer behavior towards green restaurants, suggesting potential strategies for promoting sustainable dining and eco-gastronomy tourism. Research on green practices in restaurants reveals that customers generally have positive attitudes towards environmentally friendly initiatives, though willingness to pay more varies. Upscale casual restaurant patrons tend to be more knowledgeable and supportive of green practices compared to

fast-food customers (DiPietro et al., 2013). A study conducted by Franzidis et al. (2022) found respondents are increasingly aware of sustainable dining practices on campus and are more likely to have positive attitudes toward restaurants that implement green initiatives. Awareness of sustainability in dining correlates with a higher likelihood of supporting sustainable restaurant practices, as highlighted by Yoon et al. (2023), emphasizing the influence of education on sustainable dining choices. Increased environmental awareness motivates consumers to opt for more sustainable food options, such as vegetarian or eco-friendly meals (Aguirre Sánchez et al., 2021). Green restaurants are seen as a tool to develop eco-gastronomy tourism, which attracts visitors to participate in the cultural reality of a destination through local food and products. A positive experience with green restaurants can enhance tourists' intentions to recommend and revisit a destination (Elsehly, Elsayed, 2024). These findings suggest that promoting green restaurants and sustainable practices can contribute to the development of eco-gastronomy tourism and increase visitor engagement with local culinary traditions. Authors formulate the following hypotheses in light of these considerations:

Hypothesis 1 (H1). Attitudes toward gastronomy tourism positively affect the intention to visit destinations with green restaurants.

Hypothesis 2 (H2). Attitudes towards gastronomy tourism positively affect attitudes towards green restaurants.

Hypothesis 3 (H3). The importance of green practices positively affects the intention to visit destinations with green restaurants.

Hypothesis 4 (H4). The importance of green practices positively affects attitudes toward green restaurants.

Hypothesis 5 (H5). Knowledge and interest in gastronomy positively affect their intention to visit destinations with green restaurants.

Hypothesis 6 (H6). Knowledge and interest in gastronomy positively affect attitudes toward green restaurants.

Methodology

The questionnaire employed in this study was designed based on previously validated scales, ensuring the reliability and robustness of the assessment framework. The analysis of respondent characteristics encompassed multiple dimensions. Knowledge and interest in gastronomy were measured using three items (Perez-Priego et al., 2019), while attitudes toward gastronomy were assessed through six items (Cordova-Buiza et al., 2021). The importance of green practices was evaluated using five items (Schubert et al., 2010), whereas attitudes toward green restaurants were captured through seven items (Hui et al., 2018). Lastly, the intention to visit green restaurants was measured using five items (Hui et al., 2018). A 5-point Likert scale (1–strongly disagree to 5–strongly agree) was used to measure agreement.

The data were collected using a standard paper and pen survey, applying a convenience sampling method. The research took place between February 2024 and November 2024, with participation being anonymous and voluntary. The survey was conducted in restaurants across four urban destinations of Autonomous Province of Vojvodina (Novi Sad, Subotica, Sombor and Zrenjanin). Initially, restaurant managers were contacted to obtain permission to conduct the survey with their guests. After agreeing to participate, guests completed the questionnaire while waiting for their meals to be prepared. On average, filling out the survey took approxi-

mately 10 minutes. The study was carried out in a total of 16 restaurants, resulting in 287 validly completed questionnaires.

Results

Study Sample

A total of 287 individuals participated in the study. The gender distribution was relatively balanced, with a slight predominance of female respondents. Educational attainment was notably high, with the majority of participants holding undergraduate degrees, indicating a well-educated sample. The age distribution covered a broad range, with a substantial proportion of younger and middle-aged individuals. Dining frequency data suggest that most respondents engage in regular restaurant visits, reflecting established dining habits. Income levels were predominantly within the middle-to-upper range, suggesting financial capacity to support frequent restaurant patronage. The research was conducted in multiple urban centres in Serbia, with the largest representation from Novi Sad, followed by Subotica, Sombor, and Zrenjanin. The composition of the sample, characterised by a balanced demographic and economic profile, enhances the validity of the study's findings and provides valuable insights into consumer behavior (Table 1).

Table 1. *Characteristics of respondents (N = 287)*

Gender (%)		Education (%)	
Male	47.8	Secondary/High school	29.3
Female	52.2	Undergraduate	40.5
		Graduate/M.Sc. degree	21.8
		Graduate/Ph.D. degree	8.4
Age		Frequency of eating in restaurants (%)	
20-30	26.1	Rarely	4.3
31-40	18.1	Occasionally	42.5
41-50	24,7	Often	29.8
51-60	16,3	Very often	20.8
61-70	9,1	Always	2.6
Above 70	5,7		
Monthly income (in Serbian dinars-RSD) (%)		Research location (%)	
Bellow 50 000	5.4	Novi Sad	
50 001- 80 000	15.1	Subotica	41.0
80 001- 110 000	26.3	Sombor	25.7
110 001- 140 000	28.8	Zrenjanin	17.5
Above 140 000	24.4		15.8

Measurement Model Validity—Confirmatory Factorial Analysis

Prior to evaluating the structural model and testing hypotheses, the measurement model was checked for innate construct validity and reliability using confirmation factor analysis (CFA). Table 3 shows the results of the measurement model estimation. According to the results, all fit indices (TLI = 0.947; CFI = 0.939; RMSEA = 0.067; SRMR = 0.061) revealed a satisfactory fit.

Table 2. CFA results

Factors	Items	β	t Value	α	AVE	CR
Knowledge and interest in gastronomy	I have good knowledge of food and cuisine in general.	0.814	*	0.915	0.813	0.950
	I am interested in food and cuisine in general.	0.774	26.157			
	I am interested in food and cuisine in general.	0.817	31.125			
Attitudes towards gastronomy tourism	It is important for me to involve gastronomy in my motivation to travel.	0.847	*	0.887	0.787	0.907
	It is important for me to search for gastronomy experiences when choosing a destination to visit.	0.761	14.572			
	It is important for me that gastronomy experience leads to the satisfaction of my trip.	0.844	15.188			
	A positive gastronomy experience is able to encourage me to travel back to that particular destination.	0.837	17.156			
	A bad gastronomy experience puts me off from travelling back to this destination.	0.878	26.314			
	Gastronomy experience is one of the most remarkable cultural aspects for me when choosing a destination.	0.866	27.102			
Green practice	It is important for restaurants to reduce energy usage and waste.	0.814	*	0.869	0.687	0.892
	It is important for restaurants to use biodegradable or recycled products.	0.835	28.705			
	It is important for restaurants to serve locally grown food.	0.747	17.194			
	It is important for restaurants to donate to environmental projects.	0.75	18.920			
	It is important for restaurants to pay fees to reduce their ecological footprint.	0.767	15.277			
Attitudes towards green restaurants	Dining at green restaurants will help protect the environment.	0.850	*	0.951	0.878	0.908
	Dining at green restaurants will be healthier for me.	0.842	22.855			
	I have a favorable attitude towards dining at green restaurants.	0.830	23.899			
	I believe I have resources and time to dine at green restaurants.	0.870	30.577			
	If it were entirely up to me, I would select green restaurants for a meal, compared to a non-green restaurant.	0.905	28.511			
	I am willing to pay more for dining in a green restaurant.	0.864	30.617			
	I feel joyful and peaceful if I am visiting green restaurants.	0.871	21.955			
Visit intention	I will consider green restaurant for a meal because they are less polluting in coming times.	0.817	*	0.911	0.833	0.947
	I will consider switching to a green restaurant for a meal as I am concerned about the environment.	0.755	25.642			
	I plan to select a green restaurant rather than conventional restaurant.	0.811	30.554			
	I expect to select green restaurant for a meal in the future because of its positive environmental contribution.	0.874	31.589			
	I definitely want to select green restaurant for a meal in near future.	0.882	33.228			

Notes: * Items fixed to 1 in CFA; β —Std. regression weights; α —Cronbach's alpha; CR—composite reliability; AVE = average variance expected.

The composite reliability values for the latent factors demonstrated satisfactory levels, exceeding the recommended threshold of 0.7 (Kline, 2016; Hair et al., 2017). Convergent validity is considered established when all item-to-factor loadings are statistically significant and the Average Variance Extracted (AVE) exceeds 0.50 for each construct (Fornell, Larcker, 1981). The findings revealed that all dimensions had an AVE greater than 0.50 and a composite reliability (CR) above 0.70, confirming strong convergent validity (Fornell, Larcker, 1981). Furthermore, the Cronbach's α values for each factor were greater than 0.70, with the alpha coefficients for the nine factors ranging from 0.869 to 0.951, demonstrating substantial reliability of the questionnaire scales (Nunnally, 1978) (Table 2).

Results of the Path Model

Model fit was satisfactory (CFI = 0.921; TLI = 0.919; RMSEA = 0.048; SRMR = 0.072), supporting the hypothesized relationships among latent constructs.

Table 3. *The results of model (standardized regression weights).*

Hypothesis	β	S.E.	z-Value	p-Value	Supported/ Not supported
H ₁	0.474	0.068	8.054	0.000	Supported
H ₂	0.448	0.060	7.206	0.000	Supported
H ₃	0.007	0.057	0.176	0.763	Not supported
H ₄	0.589	0.068	8.837	0.000	Supported
H ₅	0.564	0.073	7.305	0.000	Supported
H ₆	0.079	0.075	1.114	0.198	Not supported

Table 3 presents the results of the hypothesized interactions within the proposed model. The positive impact of attitudes towards gastronomy tourism on the visit intention (H₁) is confirmed ($\beta = 0.474$, $p < 0.000$). Attitudes towards gastronomy tourism had a significant positive effect on attitudes towards green restaurants ($\beta = 0.448$, $p < 0.000$), thus supporting H₂. The importance of green practices was not found to positively affect the visit intention (H₃) ($\beta = 0.007$, $p = 0.763$). H₄ was supported, indicating that the importance of green practices had a significant positive impact on attitudes toward green restaurants ($\beta = 0.589$, $p < 0.000$). Knowledge and interest in gastronomy had a significant positive effect on the visit intention ($\beta = 0.564$, $p < 0.000$), so H₅ can be confirmed. Knowledge and interest in gastronomy didn't have a significant effect on attitudes toward green restaurants ($\beta = 0.079$, $p = 0.198$) thus, H₆ is rejected. Figure 1 displays the results of the path model.

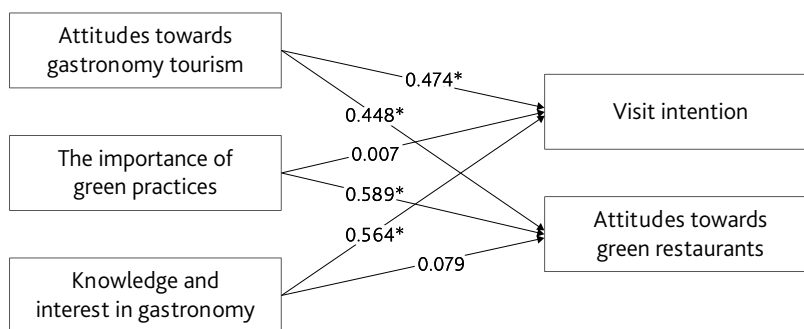


Figure1. Standardized estimates from the path model

Discussion

This study highlights the growing significance of eco-gastronomy tourism and the pivotal role that green restaurants play in promoting sustainable tourism practices. The findings contribute to the expanding literature on eco-gastronomy tourism, particularly by emphasizing the impact of green restaurants on consumer behavior and sustainable tourism strategies. The results validate the positive influence of attitudes toward gastronomy tourism on visit intentions (H1) and perceptions of green restaurants (H2). This suggests that individuals with a strong appreciation for gastronomy tourism are more likely to support sustainable dining practices, positioning culinary tourism as an effective platform to encourage environmentally conscious dining behaviors. A noteworthy result is the significant influence of the perceived importance of green practices on attitudes toward green restaurants (H4), highlighting that environmental awareness and sustainable values are crucial drivers in shaping positive perceptions of green dining establishments. However, the lack of a direct influence of green practices on visit intention (H3) suggests that, while consumers may acknowledge sustainability, this recognition does not always translate into choosing destinations based on green restaurant offerings. This points to the complexity of consumer decision-making, where factors such as convenience, price, and personal preferences might outweigh sustainability considerations. This finding is consistent with previous research, which indicates that while green initiatives are appreciated, they may not always be decisive in consumer choices if they do not align with other important factors such as dining experience and affordability (DiPietro et al., 2013). Moreover, the study shows that knowledge and interest in gastronomy positively influence visit intention (H5), supporting the idea that informed consumers are more likely to explore culinary destinations. This aligns with research by Yoon et al. (2023), which found that education on sustainability positively influences consumer dining preferences. However, the lack of a significant relationship between gastronomy knowledge and attitudes toward green restaurants (H6) indicates that culinary enthusiasts may prioritize gastronomy tourism but do not necessarily associate their passion for food with a preference for sustainable dining options. This finding suggests a need for targeted marketing and education to bridge the gap between gastronomic interests and sustainable consumption behaviors. This points to the potential for tourism providers to integrate sustainability messaging into gastronomic experiences, encouraging consumers to connect the two (Shen, 2017). Additionally, the lack of direct correlation between consumer knowledge of gastronomy and green restaurant preferences might imply that while gastronomic knowledge enhances interest in food-related travel, it does not nec-

essarily equate to greater awareness or preference for eco-conscious dining. This indicates an opportunity for future research to delve deeper into how gastronomy-focused education could be paired with sustainability initiatives to foster greater alignment between food lovers and green dining options.

Conclusion

This study underscores the growing importance of green restaurants as drivers of sustainable tourism development. By leveraging the synergy between gastronomy tourism and environmental responsibility, urban destinations in Vojvodina have the opportunity to enhance their competitive edge while contributing to global sustainability goals. The integration of green practices into the culinary tourism landscape offers significant potential for both economic growth and environmental stewardship, paving the way for a more sustainable and responsible tourism industry. Promoting green restaurants within Vojvodina's cities could also stimulate local economies by attracting eco-conscious tourists who prioritize sustainability in their travel choices. This could simultaneously benefit the agricultural sector by increasing demand for locally sourced products, thus fostering a more sustainable and circular food economy. Furthermore, the findings suggest that while green practices are valued, the decision to visit green restaurants is influenced by a combination of factors, including attitudes toward gastronomy tourism and consumer knowledge. Consequently, a more comprehensive approach involving both gastronomic promotion and environmental awareness is recommended for maximizing the impact of green restaurants on tourism in Vojvodina.

Limitations and Future Research

Despite the valuable insights, certain limitations must be acknowledged. Convenience sampling may limit generalizability, which is why future studies should use larger, more representative samples to better capture consumer attitudes toward green restaurants. Additionally, exploring cross-cultural perspectives on eco-gastronomy tourism could provide comparative insights and uncover best practices from regions with well-established sustainable dining movements. Future studies could also examine the long-term effects of eco-gastronomy initiatives on consumer loyalty and behavior to understand the sustained impact of green restaurants on tourism dynamics.

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