



Consumer Responses to the Development of Tourism Destinations through Molecular Gastronomy: An Analysis of Interest and Contributing Factors

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ABSTRACT

The development of tourism destinations through unique culinary experiences has become a key strategy in attracting tourists and boosting the tourism industry. Among these innovations, molecular gastronomy stands out as an emerging trend that blends science and cuisine to create novel and interactive dining experiences. This study aims to explore consumer responses to the development of tourism destinations through molecular gastronomy, with a particular focus on understanding the factors that drive interest and participation in such gastronomic experiences. Through a comprehensive analysis, this research examines consumer perceptions and preferences regarding molecular gastronomy as a potential attraction at tourist destinations. The study identifies key aspects that influence consumer interest, such as the novelty of the gastronomic experience, the perceived value of the experience, and the role of promotional efforts in enhancing awareness and attracting visitors. Additionally, the research highlights the importance of affordable pricing and high-quality tastes as critical factors in shaping consumer willingness to visit destinations offering molecular gastronomy experiences. Furthermore, the study delves into the expectations of consumers regarding the involvement of governmental and tourism authorities in promoting molecular gastronomy-based products to enhance the appeal of tourist destinations. It explores the desire for further development of these gastronomic offerings as part of broader tourism strategies aimed at diversifying the types of attractions available to travelers. Overall, the findings suggest that molecular gastronomy has significant potential to become a major culinary attraction in tourism, with consumer responses indicating a high level of interest in experiencing such innovations. The study provides valuable insights into the role of culinary experiences in tourism development and underscores the importance of targeted marketing strategies, quality control, and government support in fostering the growth of this unique tourism sector.

1. Introduction

The tourism industry has long been a significant driver of economic growth globally, contributing to the development of local economies and the enhancement of cultural exchange. Among the various factors that shape a destination's appeal, the culinary aspect of tourism has gained increasing importance. Gastronomy tourism, or food tourism, refers to the practice of traveling specifically to experience the food culture of a particular place. In recent years, one particularly innovative and emerging trend in culinary tourism is the incorporation of molecular gastronomy, a branch of food science that uses innovative techniques to alter the physical and chemical properties of ingredients. This new culinary movement is reshaping the way tourists perceive and experience food, making it a potential key factor in the development of tourism destinations (Türker & Süzer, 2022).

The application of molecular gastronomy at tourist destinations has garnered significant attention due to its ability to transform dining into an immersive, sensory experience. Molecular gastronomy allows chefs to manipulate food in ways that enhance both its aesthetic appeal and taste, often surprising diners with new textures, flavors, and presentations. This culinary innovation has the potential to be a major attraction for tourists seeking unique and novel experiences. As the demand for experiential tourism grows, destinations that integrate molecular gastronomy into their offerings are likely to attract food enthusiasts and curious travelers looking to explore the boundaries of traditional dining (Laeis et al., 2020).

In light of this, understanding consumer responses to the development of tourism destinations through molecular gastronomy is crucial for tourism planners, government bodies, and destination managers. The success of any tourism initiative, including those involving gastronomic innovations, hinges on consumer perception, interest, and willingness to participate in new experiences. The development of tourism destinations through molecular gastronomy relies not only on the novelty and appeal of the culinary experience itself but also on factors such as effective marketing, price sensitivity, and the overall experience provided to tourists (Kılıçhan et al., 2022).

Consumer interest in molecular gastronomy as a tourism attraction is influenced by several factors. The first key factor is the promotional efforts surrounding molecular gastronomy experiences. Consumers are more likely to show interest in a tourist destination that is effectively marketed, especially if the promotions emphasize the novelty and uniqueness of the culinary experience. Moreover, the affordability of the experience and the overall quality of the food play significant roles in determining whether consumers will visit a destination. As demonstrated in recent studies, factors such as competitive pricing and the promise of delicious, innovative food can greatly enhance a destination's appeal (Tresidder, 2015).

Additionally, consumer responses are shaped by the overall perceptions of value and the promise of a memorable experience. The integration of molecular gastronomy into a destination's tourism offerings should not only focus on the food itself but also the broader context in which it is presented. For example, the atmosphere, the storytelling aspect of the experience, and the educational value of molecular gastronomy can all contribute to the perceived worth of the experience. This brings us to the concept of "experiential tourism," where the engagement with food and its preparation forms a significant part of the overall experience (Pozzi, 2023).

The role of government and tourism managers is also critical in the development and promotion of molecular gastronomy as a tourist attraction. Research indicates that the majority of respondents in relevant studies believe that government support and initiatives to develop molecular gastronomy products could greatly enhance the appeal of a destination. This highlights the importance of public-private partnerships in fostering innovation and ensuring the sustainability of these culinary experiences as a significant part of tourism development (Pini, 2025).

Thus, this study aims to explore consumer responses to the development of tourism destinations through molecular gastronomy. Specifically, it seeks to analyze consumer interest, factors influencing their decision to visit molecular gastronomy-based destinations, and the role of promotions, pricing, and government support in shaping these responses. By understanding the factors that contribute to the success of molecular gastronomy as a tourism attraction, this research will provide valuable insights for tourism developers and policymakers aiming to harness the potential of innovative culinary experiences for sustainable tourism growth (Kalandropoulou, 2025).

In conclusion, molecular gastronomy represents a unique opportunity for tourism destinations to differentiate themselves in an increasingly competitive market. With its potential to enhance the overall tourism experience, it is important to examine consumer responses and the factors that drive interest in these types of attractions. This research will contribute to the growing body of literature on gastronomy tourism and offer practical recommendations for the effective development and promotion of molecular gastronomy in tourism destinations.

2. Methodology

This research will utilize a descriptive quantitative research design to analyze consumer responses to the development of tourism destinations through molecular gastronomy. The goal is to quantify consumer interest and identify contributing factors that influence their willingness to visit molecular gastronomy-based tourist destinations (Yoo et al., 2022). A survey will be conducted to collect data from a sample of potential tourists who have either experienced molecular gastronomy or have the potential interest in such experiences. The study will use statistical tools to analyze the relationship between consumer perceptions, factors influencing interest, and their behavioral intentions toward visiting destinations offering molecular gastronomy (Soltani et al., 2021).

3. Results and Discussion

The findings of this study offer valuable insights into consumer knowledge, preferences, and attitudes toward molecular gastronomy and its potential as a key element in the development of tourism destinations.

Knowledge of Molecular Gastronomy

As shown in Table 2, the majority of respondents (90.9%) are aware of molecular gastronomy. The primary sources of this knowledge are social media (48.5%), culinary events (36.4%), and the internet/articles (51.5%). This suggests that molecular gastronomy is widely recognized through modern channels like social media and online platforms. Notably, 57.6% of respondents find molecular gastronomy very interesting, indicating that it has captured consumer attention as an innovative and engaging culinary concept (Kovalenko et al., 2023).

Consumer Preferences for Molecular Gastronomy

The results in Table 3 highlight strong consumer interest in molecular gastronomy. 97% of respondents expressed interest in trying molecular gastronomy, with factors like innovation and creativity (90.9%), unique taste and texture (48.5%), and visual aesthetics (45.5%) significantly influencing their interest. These factors point to the appeal of molecular gastronomy as more than just food; it offers a sensory experience that aligns with contemporary culinary trends. The frequency of visits to culinary tourism attractions shows that 38.4% of consumers visit such attractions 2-3 times a month, and 15.2% visit 1 time a week, demonstrating that molecular gastronomy has the potential to drive frequent visits to culinary destinations. However, there is a portion (15.2%) who rarely or never visit culinary tourism attractions, indicating that while molecular gastronomy is appealing to many, it may not yet be universally enticing to all consumers (Sangkaew et al., 2025).

Consumer Attitudes Towards Molecular Gastronomy as a Tourism Attraction

Table 4 illustrates the consumer attitudes toward the development of tourism destinations using molecular gastronomy. 87.9% of respondents believe that molecular gastronomy can serve as a significant attraction for culinary tourism. Furthermore, 75.8% of consumers are willing to visit tourist destinations that offer molecular gastronomy experiences. This indicates that there is a strong market for molecular gastronomy as a tourism product, and it could be a powerful tool for attracting tourists to destinations offering such experiences.

Factors that could increase consumer interest in molecular gastronomy-based tourism destinations include attractive promotions and marketing (60.6%), affordable prices and delicious tastes (48.5%), as well as innovation and unique experiences (72.7%). These results highlight the importance of effective marketing strategies, competitive pricing, and delivering an exceptional, novel experience to entice tourists. Interestingly, 94% of respondents believe that it is necessary for governments or tourism managers to develop molecular gastronomy products to enhance tourism appeal. This finding emphasizes the demand for organized efforts and investment in promoting this unique culinary experience to enhance the attractiveness of tourism destinations (Di-Clemente et al., 2020).

Analysis and Connection

The data presented across Table 2, Table 3, and Table 4 reveal a growing consumer enthusiasm for molecular gastronomy as a tourism and culinary attraction. The widespread awareness and interest in molecular gastronomy, particularly through social media and events, demonstrate that it has become a prominent aspect of modern culinary tourism. This interest is reflected in the high willingness (75.8%) to visit destinations offering molecular gastronomy



experiences, which aligns with the findings that a significant portion of consumers are motivated by innovation and unique culinary experiences.

Moreover, the importance of promotions, pricing, and the uniqueness of the gastronomic experience underscores the necessity for strategic development in tourism destinations that offer molecular gastronomy. The role of affordable prices, delicious taste, and innovative presentations is central to attracting a broad consumer base, while effective marketing is key to turning interest into actual visits. The fact that 94% of respondents believe the government or tourism managers should develop molecular gastronomy products indicates a shared expectation that the public sector will play a crucial role in supporting this culinary innovation for tourism purposes.

The data confirms that molecular gastronomy holds considerable potential to shape the future of culinary tourism. To maximize this potential, tourism destinations must leverage the factors that drive consumer interest, such as innovation, visual appeal, and affordability, while also ensuring the development of engaging, marketing-driven initiatives. The results suggest that with the right infrastructure, molecular gastronomy can significantly contribute to the growth and diversification of tourism attractions, benefiting both consumers and tourism stakeholders.

Table 1. Respondent Profile

No	Aspect	Response
1	Gender	
	Man	54.5%
	Woman	45.5%
2	Age	
	< 20	3%
	20-30	45.5%
	31-40	9.1%
	41-50	15.2%
	>50	27.3%
3	last education	
	SD	-
	JUNIOR HIGH SCHOOL	-
	SENIOR HIGH SCHOOL	27.3%
	Diploma/Bachelor's Degree	42.4%
	Postgraduate	30.3%
4	Work	
	Student	30.3%
	Private employees	18.2%
	civil servant	33.3%
	Businessman	9.1%
	Educator/instructor	3%
	Employee	3%
	Lecturer	3%

Table 1 above provides a general description of the respondents in the study, that the majority were men aged 20-30 years, with a diploma/bachelor's degree educational background, and working as civil servants and students.

Table 2. Knowledge of Molecular Gastronomy

No.	Aspect	Response
1	Have you ever heard of Molecular Gastronomy?	
	Yes	90.9%
	No	9.1%
2	Where to find out information about molecular gastronomy	
	Social media	-
	Culinary event	48.5%
	Internet/articles	36.4%
	Restaurant	51.5%
	Discussion	12.1%
	Community	3%
	Lecturer on campus	3%
	Book	3%
	Other	3%
3	How interesting is the concept of molecular gastronomy?	
	Very interesting	57.6%
	Quite interesting	33.3%
	Just normal	6.1%
	Not attractive	3%

Table 2 provides information about knowledge about molecular gastronomy, where the majority of respondents (90.9%) have heard about Molecular Gastronomy. They get this knowledge from social media as much as 48.5%, and culinary events as much as 36.4%. They also get information about molecular gastronomy from the internet/articles (51.5%). Another important finding from this study shows that molecular gastronomy is very interesting for respondents (57.6%).

Table 3. Consumer Preferences Towards Molecular Gastronomy

No.	Aspect	Response
8	Interest in trying molecular gastronomy	
	Yes	97%
	No	3%
9	Factors that influence interest in gastronomic products	
	Innovation and creativity	90.9%
	Unique taste and texture	48.5%
	Visual aesthetics	45.5%
	Affordable prices	6.1%
	Culinary trends	30.3%
	Benefits for the body	3%
10	Frequency of visits to culinary tourist attractions	
	1 time a month	18.2%
	2-3 times a month	36.4%
	1 time a week	15.2%
	More than 1 time a week	15.2%
	Rarely/never	15.2%

Consumer preferences for molecular gastronomy are illustrated in table 3. From table 3, it can be seen that as many as 97% of consumers expressed their interest in molecular gastronomy. Where, the factors that influence interest in gastronomy products are mostly influenced by innovation and creativity. In addition, the unique taste and texture factors also quite influence their interest in gastronomy products. Their preferences for molecular gastronomy can also be seen from the frequency of visits to culinary tourism attractions, where as many as 38.4% of consumers visit culinary tourism attractions 2-3 times a month, even as many as 15.2% visit culinary tourism attractions 1 time a week. However, there are as many as 15.2% of consumers who rarely or never visit culinary tourism attractions.

Table 4. Tourism Destination Development Through Molecular Gastronomy

No	Aspect	Response
1	Gastronomy can be an attraction for culinary tourism	
	• Yes	87.9%
	• No	-
	• Don't know	12.1%
2	Willing to visit tourist destinations that offer molecular gastronomy experiences	
	• Yes	75.8%
	• No	-
	• Possible	21.2%
3	Factors that can increase tourist interest in molecular gastronomy-based tourist destinations	
	• Attractive promotions and marketing	60.6%
	• An affordable price	48.5%
	• Delicious taste	48.5%
	• Strategic location	30.3%
	• Innovation and unique experience	72.7%
4	The government or tourism managers need to develop GS products to increase tourism appeal.	
	• Very necessary	45.5%
	• Need	48.5%
	• No need	3%
	• Don't know	3%

Table 4 provides an overview of consumer responses to the Development of Tourism Destinations Through Molecular Gastronomy. As many as 87.9% of respondents have the view that gastronomy can be a culinary tourism attraction at a destination. One indicator that can show this is the fact that there are as many as 75.8% of consumers willing to visit tourist destinations that offer molecular gastronomy experiences. Factors that can increase tourist interest in molecular gastronomy-based tourist destinations Most are influenced by attractive promotions and marketing (60.6%), affordable prices and delicious tastes by 48.5%. For the development of tourist destinations through molecular gastronomy, the majority of respondents (94%) want the government or tourism managers to develop GS products to increase tourist attractions.

4. Conclusion

The consumer responses to the development of tourism destinations through molecular gastronomy highlight a growing interest in culinary tourism as a key attraction. Many respondents view gastronomy as a significant draw for tourists, with a strong inclination to visit destinations offering unique molecular gastronomy experiences. Factors that contribute to the increasing interest in these destinations include effective promotions and marketing, as well as affordable pricing and appealing tastes. Additionally, there is a clear demand for the government or tourism managers to actively develop molecular gastronomy products to enhance the attractiveness of these destinations. This suggests that molecular gastronomy not only has the potential to elevate the tourism experience but also plays a crucial role in shaping the future of culinary tourism.

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