Sustainable Culinary Practices and Their Impact on Tourist Food Experience and Destination Loyalty: A Study of Bihar's Gastronomic Tourism

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Abstract. The development of eco-friendly practices in the hospitality and tourism industry is one of the globally rising trends that are gaining popularity worldwide, particularly in culinary tourism. Incorporating locally produced foods into meals and using sustainable food production processes greatly enhances a tourist's culinary experience. Because of the distinct cuisine and culture, Bihar serves as perfect case study for analyzing the problems of sustainable cooking and the loyalty of the tourist to the destination. This study is aimed at analyzing the effect of sustainable cooking practices on visitor dining experiences and its impact on destination loyalty. It analyzes the satisfaction of visitors based on the traditional methods of food preservation, the farm-to-table model of dining, and the green sourcing of food materials, and how these methods incentivize the visitors to return. The study also examines how tourists perceive sustainability in Bihar's culinary sector and how it aligns with their desire for authentic, eco-friendly travel experiences. The purpose of this study is to offer crucial insights on the increasing role of sustainability in gourmet tourism by employing a mixed-method research methodology that incorporates surveys and interviews with travelers and hospitality specialists. The findings will draw attention to crucial components that enhance tourists' overall satisfaction with their culinary adventures and, ultimately, enhance Bihar's appeal as a sustainable culinary destination. The study also aims to provide practical recommendations for lawmakers and hospitality businesses on how to integrate sustainability into the region's food tourism sector in order to encourage long-term growth and environmental responsibility.

Keywords: Sustainable Gastronomy, Local Cuisine, Destination, Culinary Techniques, Hospitality.

1 Introduction

Culinary tourism has emerged as a dynamic field that connects food with cultural identity, local development, and tourist satisfaction. It is more than simply a gastronomic experience; it offers an immersive cultural journey that combines heritage, authenticity, and sustainability [1,2]. Studies emphasize that food-related travel experiences significantly impact tourist behavior, destination loyalty, and economic growth [1,3,4]. Gastronomy acts as a medium for storytelling, social bonding, and sensory discovery, which enriches tourists' understanding of the places they visit [5,6]. With increasing global interest in sustainability and ethical consumption, there is a paradigm shift toward sustainable food tourism practices, such as organic farming, waste reduction, and farm-to-table models [7–9]. Researchers have shown that sustainable culinary tourism not only improves guest satisfaction but also enhances the destination's competitiveness and reputation [10–13]. Platforms like Instagram and TikTok are increasingly influencing food travelers by showcasing authentic and eco-friendly local cuisines, shaping destination choices [14,15]. In this context, Bihar's traditional foods like Litti Chokha, Sattu-based meals, and Thekua present untapped potential for positioning the state as a sustainable culinary tourism destination [16,17].

M. Sharma et al. (eds.), *Proceedings of the 2nd International Conference on Innovation and Regenerative Trends in Tourism and Hospitality Industry (IRTTHI 2025)*, Advances in Economics, Business and Management Research 343,
https://doi.org/10.2991/978-94-6463-799-1_28

2 Literature Review

The impact of sustainable culinary practices as part of gourmet tourism affects place loyalty and the overall experience of guests and their dining. There seems to be an increasing concern regarding sustainability, the sourcing of food, and cultures, which fundamentally changes how food tourism is viewed and practiced around the world. The primary factor regarding the appeal of a particular destination is culinary tourism which involves sampling the local cuisine and traditional preparation methods as well as the regional delicacies. As scholars have emphasized time and again, food is more than food; food is also an element of culture as it serves as a construct to understand a place's geography, and polity, and socialize [1,2]. One of the many satisfactions regarding visitations and repeat visits is greatly influenced by culinary tourism [1,2]. Food is an integral part of the travel experience, it develops impressions and associations that are hard to forget [3]. According to Smith and Costello, the loyalty of travelers to a destination is affected by the authenticity, originality, and standards of the dishes offered [4]. Moreover, Gyimóthy and Mykletun discovered that the emotional bond that travelers make through food will likely enhance word-of-mouth marketing and promote repeat visits [5].

Mak et al. and Horng & Tsai discuss ethical labor practices, waste minimization, sourcing of materials in an eco-friendly manner, and the preservation of traditional cooking as forms of sustainablity in culinary tourism [6,7]. Some of the studies focus on eating organically produced foods, practicing organic food production, and practicing minimal food waste as essential components for the sustainable development of gastronomy tourism [8,9]. In the words of UNWTO, sustainable food tourism not only enhances a region's economic standing, but also increases tourism to the region by eco-minded consumers concerned with "good" spending and authenticity [10]. Some more recent studies show that incorporating sustainability in a culinary tourism plan can help attract ethically-minded tourists and gain a competitive edge [11,12]. Noting the increase in eco-minded consumers, recent studies highlight the role of regenerative agriculture and circular gastronomy in sustainable food tourism [13]. This methodology strongly promotes the preservation of biodiversity, local food systems, and absolute waste policies, which are now common in leading food tourism countries such as Italy and Japan [12,14]. Research carried out by Chen et al. shows that tourists are interested in visiting destinations with minimal carbon footprint dining, which reveals concern about sustainability in food travel [15].

The impact of cuisine on cultural identity has been extensively covered in the literature on tourism [16,17]. Preserving traditional foodways promotes cultural visitor experiences, as local cuisine is commonly considered a sign of a destination's legacy [18]. Studies by Jolliffe and Stone et al. highlight how important it is to include traditional culinary methods in vacation experiences to ensure authenticity [19,20]. Bihar's historically significant dishes, like Litti Chokha, Thekua, and Sattu-based meals, offer cultural touchpoints to both domestic and international visitors [21,22]. The impact of dining experiences on tourists' attitudes and behavior has been the subject of numerous scholarly investigations. Travelers choose destinations that offer immersive and engaging culinary experiences, such as cooking classes, farm visits, and food festivals, claim Kim et al. [3]. Sims found that tourists are more likely to have positive perceptions of a region when local cuisine is actively marketed [23]. A study by Everett found that tourists' emotional attachment to local food influences their likelihood of returning and recommending a location [24]. Furthermore, recent studies demonstrate the growing impact of social media and culinary influencers on gastronomic tourism trends [14,25]. Tourists are now using social media storytelling and user-generated content as a primary source of information when choosing culinary destinations. This shift has turned Instagram and TikTok into powerful engines for promoting food tourism [14,26]. This is particularly notable for Bihar. The Internet's marketing of native delicacies has the potential to lure food-loving tourists. While the benefits of sustainable food tourism are plenty, regions often struggle with insufficient marketing, inconsistent food standards, inadequate tourism infrastructure, and general concerns regarding food hygiene [9,27]. The culinary tourism industry in Bihar still has a long way to go, and there is a need for a collective response from community members, government bodies, and hospitality businesses to these issues [28]. Recent research indicates that collaborations with local food producers, enhanced food and hospitality training programs, and targeted advertising could strengthen food tourism in Bihar [22,7]. Based on recent advancements in culinary tourism, plant-based, organic, and zero-waste dining experiences are gaining traction [12,11]. The rise of

eco-friendly diets, agritourism, and ethical eating demonstrates a shift in consumer focus toward sustainable measures [26].Given the increasing popularity of vegan and farm-to-table eating, Bihar can position itself as a sustainable food tourism destination by leveraging its agricultural resources and traditional millet-based meals [29]. Recent research suggests that by ensuring food safety, authenticity, and sourcing transparency, blockchain-based food traceability could enhance sustainable gastronomy tourism [30].

3 Statement of the Problem

Many traditional food items, such litti-chokha, sattu-based meals, and other elements of Bihari cuisine, are still underrepresented in commercial menus and mainstream hospitality education, despite the rich culinary legacy and cultural significance of regional Indian cuisines. There is a significant knowledge vacuum on how Bihari food contributes to culinary tourism and influences travelers' plans to return.

Although Indian cuisine is enjoyed all over the world, certain regional cuisines, such as Bihar's, are frequently overlooked in studies on hospitality and tourism promotion. This makes it necessary to investigate whether Bihari food has the ability to encourage travelers to return to the area. Additionally, there is a dearth of empirical study assessing how tourists view Bihari cuisine, its authenticity, and its effect on overall trip satisfaction. Opportunities to incorporate local cuisine into tourism initiatives are still neglected in the absence of such knowledge.

4 Research Objectives

The main objectives of the study is:

- To assess how sustainable culinary practices in Bihar influence tourists' food experiences and destination loyalty.

5 Hypothesis

- Sustainable culinary practices in Bihar have a positive impact on tourists' food experiences and destination loyalty.

6 Research Methodology

Tourists' food experiences and destination loyalty are greatly influenced by Bihar's distinctive gastronomic identity, which is founded on traditional and sustainable food practices like using locally sourced ingredients, growing crops organically, minimizing food waste, and using eco-friendly cooking methods. Bihar's rich culinary heritage is well known. Through a structured survey, this study evaluates 162 visitors' experiences with local cuisine, traditional cooking methods, hygiene, and sustainability activities to see how these sustainable practices affect visitors' views, satisfaction, and plans to return. The findings are in line with other research on visitors' culinary experiences in Bihar, which discovered that 13 key food attributes with a mean score of 3.38 overall significantly impacted the selection of food while traveling, emphasizing the value of flavor, fresh ingredients, authenticity, and cleanliness. The cultural appeal of Bihar's cuisine is influenced by traditional cooking techniques like earthen pot cooking and the use of seasonal ingredients, according to statistical analysis conducted with SPSS, which includes multiple regression analysis, descriptive statistics, and Spearman's Rank Correlation Coefficient. Food delight and place loyalty are directly correlated, as travelers who select authentic and sustainable

dining experiences are more likely to return.

7 Findings of the Study

The findings of this study are presented by addressing the research questions developed:

7.1 Impact of Authentic Local Cuisine on Tourist Experience

According to the survey, visitors' culinary experiences are significantly influenced by the availability of real Bihari food. Foods like as Sattu-based products, Khaja, Thekua, and Litti Chokha were valued for their taste and cultural diversity. Travelers' overall enjoyment was greatly enhanced by their associations of these foods with local identity, tradition, and uniqueness. According to the study, real food not only improves the destination's sensory appeal but also fosters stronger emotional ties between visitors and the place. Positive perceptions of Bihar among tourists were highly connected with the availability of authentic indigenous cuisine. The statement "The availability of authentic local food enhanced my travel experience" was a strong predictor of overall happiness, according to regression analysis results. This suggests that local cuisine is a vital source of inspiration and a way to create memories, not only an addition to travel. Based on their culinary experiences, visitors were more likely to suggest the location or return. As a result, authenticity became a crucial component in using gastronomy to foster destination loyalty.

7.2 Affordability and Accessibility of Cuisine

The study's other key conclusion was that visitors' pleasure and contentment are directly impacted by how reasonably priced local cuisine is. Travelers said that Bihari cuisine was not only authentic and tasty, but also affordable, which raised the perceived worth of their trip. Affordability was found to be the third most important predictor in the regression model, indicating that affordable dining options greatly enhance visitors' favorable opinions of the location. Food that is both excellent and reasonably priced offers both domestic and foreign travelers a compelling value proposition. This is particularly crucial for drawing in tourists on a tight budget, who make up a sizable portion of the travel industry. It was also valued that local foods were easily accessible in a variety of settings, including traditional restaurants, local markets, and street food. The larger objectives of inclusive tourism, which allow visitors from all socioeconomic levels to savor local delights, are further supported by affordability. In the case of Bihar, this affordability contributes to the state's reputation as a friendly and profitable culinary tourism destination.

7.3 Influence of Sustainable Culinary Practices

According to the report, sustainable culinary practices including using organic foods, seasonal produce, ethical sourcing, and minimizing food waste are becoming more and more valued by tourists. Bihar offers a naturally sustainable culinary environment thanks to its robust agricultural foundation and ancient cooking methods like mitti ke bartan (earthen pots). Travelers expressed a desire for environmentally conscious dining that supports regional farmers and reduces carbon emissions, among other environmental ideals. Traditional food preparation techniques and farm to table sourcing were viewed as markers of ecological responsibility and cultural diversity. By improving happiness and raising the possibility of destination loyalty, these measures improved the overall traveler experience. Additionally, the study discovered that tourists are more sensitive to the origins and preparation methods of the food they eat. Their emotional bond with the location is strengthened when they witness sincere sustainability initiatives. This research lends credence

to the notion that culinary tourism is expanding beyond taste to include sustainability, ethics, and legacy.

7.4 Statistical Validation and Predictive Power

Multiple regression analysis was used in the study to examine how different cuisine characteristics affected travelers' overall happiness. The final model was statistically robust and highly predictive, explaining 82% of the variation in satisfaction ratings. Linearity, homoscedasticity, independence of errors, normalcy, and the lack of multicollinearity were all satisfied. This attests to the trustworthiness and validity of the study's statistical methodology. Affordability, authenticity, and the value of regional cuisine were all significant predictors at $p < 0.001$. The model's strength was further confirmed by residual analysis, Cook's Distance values, and Durbin Watson statistics (1.511). The high R2 values for all models indicate that the overall Bihar trip experience is dominated by the gastronomic experience. Additionally, the analysis discovered no noteworthy outliers, suggesting that visitor answers were reliable and consistent. The significance of food related elements in influencing traveler pleasure and loyalty is amply supported by these statistical findings.

7.5 Strategic Recommendations for Tourism Development

The study suggests that Bihar strategically incorporate sustainable culinary practices into its tourism development policies in light of the findings. This entails promoting street food festivals, local food trails, traditional cooking classes, and culinary storytelling. The study emphasizes that in order to establish a strong foundation for culinary tourism, cooperation between local communities, hospitality enterprises, and governmental organizations is crucial. Better infrastructure, higher standards of hygiene, and efficient digital marketing particularly on sites like YouTube and Instagram are all advised. Using social media to promote authenticity and sustainability could draw in eco-aware and adventure seeking tourists.The study highlights how using regional goods and classic recipes helps rural economies while also preserving cultural identity. Bihar has the potential to become one of India's top destinations for sustainable food tourism with careful branding. Policymakers, chefs, tour operators, and hoteliers may all benefit from these results, which go beyond mere theory.

8 Analysis and Discussion

8.1 Descriptive Statistics on Overall Food Experience During Travel at Bihar as a Gastronomic Tourism Destination

Table 1 : Descriptive Statistics				
	N	Mean	Std. Deviation	Variance
Method of cooking	162	3.33	1.499	2.246
Odor and Aroma of food	162	3.14	1.552	2.408
Garnish and color	162	3.36	1.426	2.034
Use of Spices	162	3.47	1.419	2.015
Palatability and taste	162	3.51	1.467	2.152
Use of accompaniments	162	3.32	1.465	2.145
Rich and thick gravy	162	3.38	1.374	1.888
Freshness	162	3.59	1.421	2.020
Uniqueness	162	3.49	1.467	2.152
Use of local ingredients	162	3.33	1.427	2.037
Use of Equipment	162	3.28	1.428	2.040
Style of serving and presentation	162	3.22	1.388	1.925
Value of Nutrients	162	3.52	1.420	2.015
Valid N (listwise)	162			

Assumption of Multiple Regression Analysis

A stepwise forward multiple linear regression analysis was conducted in order to evaluate the hypothesis that food experience influences overall holiday destination experience in Bihar's gourmet tourism. Before using this method, a number of assumptions were evaluated, including non-zero variance, linearity of data, homoscedasticity, multicollinearity, independence of errors, linearity of data, random normal distribution of errors, and outlier detection. First, the outlier-related first regression application assumption was examined. To look for outliers, standard residuals were examined. At a 99% confidence level, if the minimum value of the standard residual is less than or equal to -2.58 and the maximum value is equal to or greater than 2.58, then the data is considered to have outliers. Based on the analysis of this study, the values for standard residuals were as follows: (Std. Residuals Minimum = -2.214, Std. Residuals Maximum = 2.476), suggesting that there were no significant outliers in the data.

Residual Statistics

Table 2 Residuals Statistics[a]					
	Minimum	**Maximum**	**Mean**	**Std. Deviation**	**N**
Predicted Value	**1.27**	**5.01**	**3.77**	**1.107**	**162**
Std. Predicted Value	**-2.263**	**1.123**	**.000**	**1.000**	**162**
Residual	**-1.838**	**1.397**	**.000**	**.519**	**162**
Std. Residual	**-3.511**	**2.669**	**.000**	**.991**	**162**

The statistical validity and reliability of the regression model predicting overall satisfaction with Bihar's culinary experience are confirmed by the residuals statistics analysis. A stable model is indicated by the adjusted projected values, which exhibit little volatility and range from 1.27 to 5.01 with a mean of 3.77. With a mean of 0.000 and a range of -1.838 to 1.397, the residuals show no discernible bias in the predictions. With very few possible outliers, the standardized residuals primarily fall within the permissible range of -3 to +3. The robustness of the model is further supported by the studentized and deleted residuals, whose values stay within reasonable bounds. No data point has an undue impact on the model, according to the multivariate influence metrics,

which include Cook's Distance (max 0.586), Mahalanobis Distance (max 32.541, mean 2.981), and Centered Leverage Value (max 0.202). The model successfully describes how Bihar's cuisine affects visitors' total dining experience and satisfaction because the residual analysis generally supports the assumptions of normalcy, homoscedasticity, and linearity.

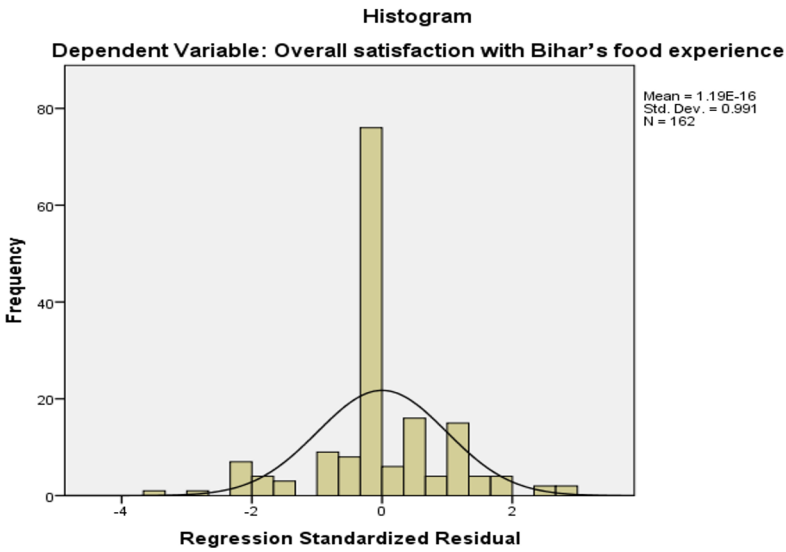

Fig.1 Histogram of Normally Distributed Residual

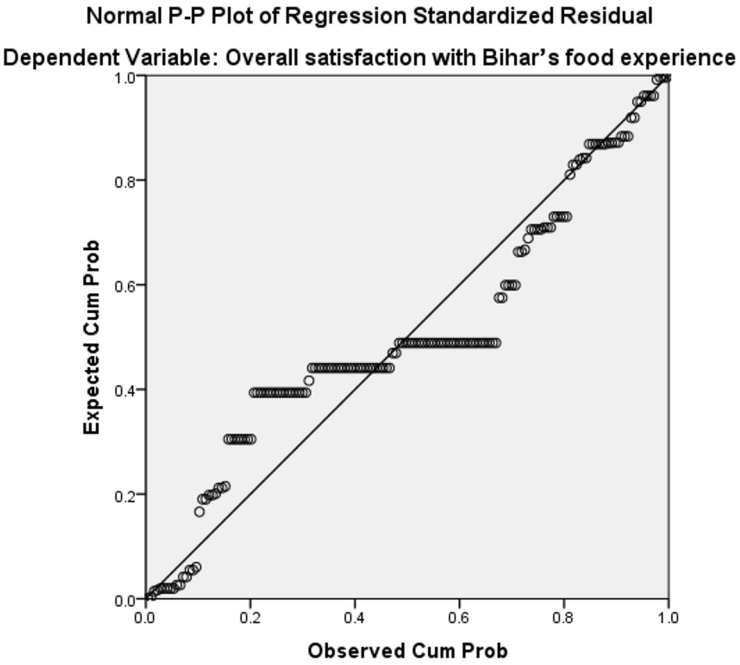

Fig. 2: Normal P- P Plot of Regression Standardized Residuals

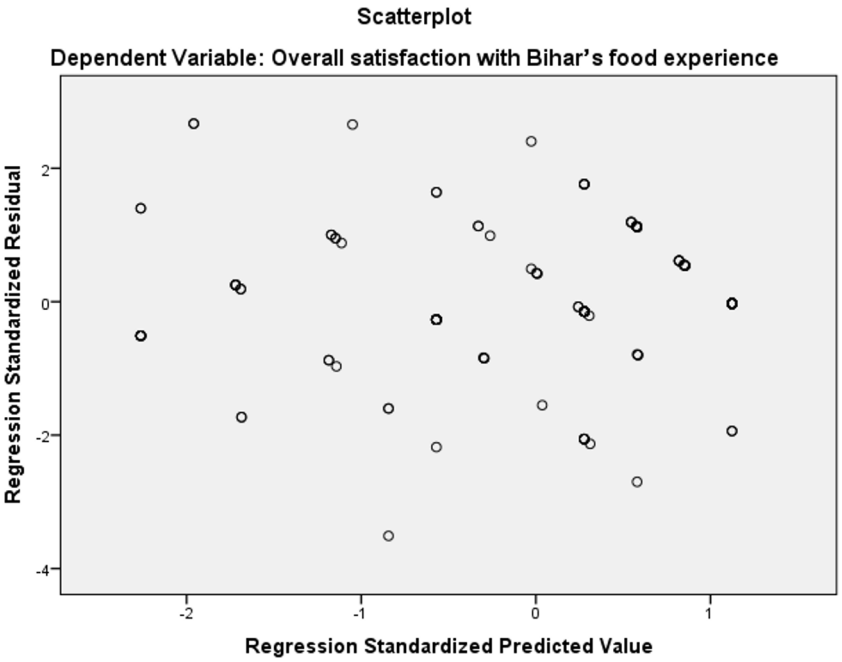

Fig. 3: Scatterplot of Standardized Predicted Values against Standardized Residual

A histogram and a normal probability plot (P-P plot) of regression standardized residuals were analyzed to evaluate the normal distribution of residuals. The data was further examined for homoscedasticity, linearity assumptions, and normality of residuals. In this study, the histogram of standardized residuals looked symmetrical and well-shaped, suggesting that the residuals followed a normal distribution (See Fig. 1). To confirm the assumptions of homoscedasticity and linearity, a scatter plot of standardized residuals against standardized predicted values was analyzed; the scatter plot displayed a random array of dots evenly distributed around the line of confidence level, indicating that the data met the assumptions of homoscedasticity and linearity (See Fig. 3). The P-P plot of standardized residuals also revealed that the data points closely followed the diagonal line, indicating that the residuals were normally distributed (See Fig. 2).

Additionally, the data was examined to verify the collinearity assumption. No contributing dietary qualities were discovered to have a strong association with one another when a correlation matrix was analyzed. The correlation coefficient (r) was less than 0.9 for all contributing food aspects influencing the total eating experience in Bihar's gourmet tourism.

To evaluate multicollinearity, the Variance Inflation Factor (VIF) and tolerance statistics were also examined. When tolerance values are more than 0.2 and VIF values are fewer than 10, the multicollinearity assumption is upheld. All contributing food qualities in this study satisfied these requirements, indicating that multicollinearity was not an issue. Because the predictors' variance was not zero, the data also met the requirement of non-zero variance.

Additionally, the modified residuals were tested for correlation and error independence using the Durbin-Watson test. The assumption of no autocorrelation is evaluated by this test. The premise of independent mistakes is met when the residuals are uncorrelated, as shown by a Durbin-Watson statistic (d) value near 2. The premise of independent errors was satisfied in this study, as evidenced by the Durbin-Watson statistic of 1.511. As a result, the study's data met all the requirements, demonstrating its dependability for multiple regression analysis.

Table 3 Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.853[a]	.728	.726	.639	.728	428.241	1	160	.000	
2	.890[b]	.793	.790	.560	.065	49.553	1	159	.000	
3	.906[c]	.820	.817	.523	.027	24.065	1	158	.000	1.511

The study also aims to provide practical recommendations for lawmakers and hospitality businesses on how to integrate sustainability into the region's food tourism sector in order to encourage long-term growth and environmental responsibility.

Analysis of the Model Summary

The effect of meal experience on overall satisfaction with Bihar's food experience was investigated using regression analysis. Key statistical metrics are provided in the model summary to assess the model's prediction power and strength.

Model Fit and Predictive Power

Model 1: This model accounts for 72.8% of the variation (R2 = 0.728) in overall satisfaction and has only one predictor: "The availability of authentic local food enhanced my travel experience." This suggests that visitors' dining experiences in Bihar are significantly impacted by the availability of genuine regional cuisine.

Model 2: The F-change value (49.553, $p < 0.001$) indicates that the addition of the variable "Local food played a major role in my satisfaction with my visit to Bihar" significantly improves the model, and the R2 rises to 0.793, meaning that 79.3% of the variation in overall satisfaction is now explained.

Model 3: With an R2 of 0.820 (82.0% variance explained), the final model includes the statement, "The affordability of Bihari cuisine made my visit more enjoyable." This indicates that the contentment of tourists can be strongly predicted by the three variables taken together. This addition results in a statistically significant improvement, as indicated by the F-change value (24.065, $p < 0.001$).

Durbin-Watson Statistic

The Durbin-Watson value (1.511) implies that there is no severe issue of autocorrelation in the leftovers, indicating that the model parameters hold true.

The findings indicate that tourists' overall satisfaction with their culinary experience in Bihar is greatly influenced by the availability, quality, and affordability of local Bihari food; the high R2 values validate that these food-related factors are important in influencing visitor perceptions and boosting destination loyalty.

8.2 ANOVA for Stepwise Forward Regression Analysis between Determinants of Food Attributes and Over all Tour Experience

Table 4 ANOVA Result

Model	Regression (SSM)	Residual (SSR)	df	F	Significance
1	175.121	65.429	1,160	428.241	.000b
2	190.667	49.883	2,159	303.874	.000c
3	197.260	43.289	3,158	239.991	.000d

The regression model's significance in forecasting general satisfaction with Bihar's culinary experience is assessed in the ANOVA table. Only one predictor was included in Model 1: the provision of real Bihari food improved my trip. The residual sum of squares (SSR) was 65.429, and the regression sum of squares (SSM) was 175.121. The statistical significance of the model was supported by the F-statistic of 428.241 and the p-value of.000. The addition of the predictor "Local food played a major role in my satisfaction with my visit to Bihar" to Model 2 caused the SSM to rise to 190.667 and the SSR to fall to 49.883. The statistical significance of the model was further supported by the p-value of.000 and the F-value of 303.874. Finally, to increase the model's explanatory power, a third predictor. The affordability of Bihari cuisine made my visit more enjoyable was included to Model 3. With an F-statistic of 239.991 and a p-value of.000, the SSM increased to 197.260 and the SSR further decreased to 43.289, demonstrating significant model significance. Each extra predictor improves the model's capacity to explain variances in overall happiness with Bihar's culinary experience, as evidenced by the constantly high F-values and the steady decline in residual sum of squares. Because it explains the largest percentage of the variation in satisfaction levels, the last model (Model 3) is the most robust.

Table 3's regression analysis looks at the main factors that influence vacationers' food experiences, particularly in the setting of Bihar. When no predictor factors are taken into account, the constant value of 0.330, t-value of 2.440, and p-value of 0.016 indicate a substantial baseline impact. One of the factors that had a positive and substantial impact on my trip was the availability of real local food ($\beta = 0.310$, $t = 4.472$, $p = 0.000$). This suggests that the availability of original Bihari cuisine has a considerable impact on passengers' satisfaction. Likewise, the component that contributed most to my pleasure with my trip to Bihar was local food, which had the greatest standardized coefficient ($\beta = 0.360$, $t = 5.831$, $p = 0.000$), indicating that local cuisine is an important determinant of the overall culinary experience. Finally, the fact that Bihari food was affordable made my trip more pleasurable was also a significant predictor ($\beta = 0.302$, $t = 4.906$, $p = 0.000$), demonstrating that tourists' food pleasure is improved by economic accessibility. Travelers' overall pleasure with Bihar's culinary experience is greatly influenced by the availability, function, and cost of local food, as confirmed by the significance of all variables ($p < 0.05$).

Table 5 Predicators of Food Experience at Holiday Destination in Significant Regression Model

Model	Unstandardized β Coefficient	Std. Error	Standardized Coefficient	t	Sig.
Constant	0.330	0.135		2.440	0.016
The availability of authentic local food enhanced my travel experience.	0.303	0.068	0.310	4.472	0.000
Local food played a major role in my satisfaction with my visit to Bihar.	0.336	0.058	0.360	5.831	0.000
Local food played a major role in my satisfaction with my visit to Bihar.	0.336	0.058	0.360	5.831	0.000

9 Conclusion

The availability, affordability, and authenticity of Bihari cuisine greatly improve tourists' travel experiences, highlighting the need for sustainable food practices that preserve culinary heritage while guaranteeing economic and environmental benefits. This study thoroughly investigated the impact of food attributes on tourists' overall satisfaction with Bihar's gastronomic tourism, highlighting the role of sustainable culinary practices in shaping food experiences and destination loyalty. The multiple regression analysis's findings demonstrated that key meal characteristics, such as presentation, flavor, and serving temperature, had a big impact on how customers see a restaurant. In addition to their degree of enjoyment, these features influence tourists' propensity to return and recommend Bihar as a culinary destination. According to the study, sustainable culinary practices like using locally sourced goods, cooking in traditional methods, and cutting waste—improve overall eating experiences and promote traveler loyalty. The statistical studies, which confirmed that the dataset met the conditions for regression analysis, guaranteed the validity of the findings. The results of the ANOVA demonstrated a good model fit, and the coefficient analysis indicated that the cost and sustainability of the local food supply are significant determinants of visitor satisfaction. Demographic research revealed a diverse group of respondents, underscoring the importance of integrating sustainable eating practices into Bihar's tourism industry and suggesting that a broad range of tourists are drawn to genuine and sustainable culinary experiences. This study demonstrates the strategic importance of sustainable culinary practices in shaping guest dining experiences and destination loyalty. The results imply that by supporting real local cuisine, ethical sourcing, and ecologically friendly dining methods, tourism marketers, legislators, and hotel sector professionals should give sustainability first priority. By integrating sustainability into its gastronomic tourism strategy, Bihar may enhance its appeal, create a unique culinary character, and promote long-term tourism growth. Future research might look at additional aspects including farm-to-table initiatives, cultural storytelling, and sustainable restaurant practices to further establish Bihar as a sustainable culinary destination.

The authors have no competing interests to declare that are relevant to the content of this article.

References

1. Kivela J, Crotts JC. Gastronomy tourism: A meaningful travel experience. *J Hosp Tour Res*. 2006.
2. Björk P, Kauppinen-Räisänen H. Destination foodscape: A stage for travelers' food experience. *Tour Manag*. 2014.
3. Kim YG, Eves A, Scarles C. Sustainable food tourism: Towards a coherent research agenda. *J Sustain Tour*. 2019.
4. Sims R. Food, place and authenticity: Local food and the sustainable tourism experience. *J Sustain Tour*. 2009.
5. Smith SLJ, Costello C. Culinary tourism: Satisfaction with a culinary event utilizing importance-performance grid analysis. *J Vacat Mark*. 2009.
6. Gyimóthy S, Mykletun RJ. Scary food: Commodifying culinary heritage as meal adventures in tourism. *J Vacat Mark*. 2009.
7. Everett S. Food and tourism: An effective partnership?. *Routledge*, 2012.
8. Mak AHN, Lumbers M, Eves A, Chang RCY. Factors influencing tourist food consumption. *Int J Hosp Manag*. 2012.
9. Horng JS, Tsai CY. Culinary tourism strategic development: An Asia-Pacific perspective. *Int J Tour Res*. 2012.
10. Everett S, Aitchison C. The role of food tourism in sustaining regional identity: A case study of Cornwall, South West England. *J Sustain Tour*. 2008.
11. Mitchell R, Hall CM. Consuming tourists: Food tourism consumer behaviour. *Food Tourism Around the World*. 2003.
12. UNWTO. *Guidelines for the Development of Gastronomy Tourism*. 2019.
13. Gössling S, Hall CM. Sustainable culinary tourism and circular gastronomy: Conceptual foundations. *J Sustain Tour*. 2022.
14. Scholz P, Steiner A, Gössling S. Regenerative tourism in practice: Global food destinations' response to climate change. *J Tour Futur*. 2023.
15. Chen Y, Li X, Wang X. Tourists' preferences for sustainable dining experiences: Evidence from low-carbon destinations. *Sustain*. 2023.
16. Hjalager AM, Richards G. *Tourism and Gastronomy*. Routledge; 2002.
17. Cohen E, Avieli N. Food in tourism: Attraction and impediment. *Ann Tour Res*. 2004.
18. Henderson JC. Food tourism reviewed. *Br Food J*. 2009.
19. Mason R, O'Mahony GB. On the trail of food and wine: The tourist search for meaningful experience. *Int J Cult Tour Hosp Res*. 2007.
20. Tsai CY, Wang YC. Enhancing destination loyalty through sustainable culinary tourism: The role of authenticity and satisfaction. *J Hosp Tour Manag*. 2020.
21. Choe JY, Kim S. Development of a scale to measure authentic food tourism experiences. *Int J Hosp Manag*. 2018.
22. Kim YG, Eves A, Scarles C. Empirical study on motivations of food tourists. *Int J Hosp Manag*. 2019.
23. Gretzel U, Hardy A. Influencers and digital storytelling in tourism. *Tour Manag Perspect*. 2023.
24. Choe JY, Kim J, Lee J. Culinary influencers and sustainable food experiences: Impact on travel behavior. *J Tour Mark*. 2023.
25. Okumus F, Okumus B, McKercher B. Incorporating local and international cuisines in the marketing of tourism destinations. *Tour Manag*. 2007.
26. du Rand GE, Heath E. Towards a framework for food tourism as an element of destination marketing. *Curr Issues Tour*. 2006.Tsai CY, Wang YC. Strategic branding in culinary tourism: A destination marketing approach. *J Hosp Tour Res*. 2017.Scholz P, Gössling S, Hall CM. The rise of vegan gastronomy and its implications for sustainable tourism. *J Tour Futur*. 2020.
27. Lin YH, et al. Promoting ethical and organic food consumption in gastronomy tourism. *Int J Environ Res Public Health*. 2022.

28. Hsu SY, Scott N. Food tourism development and the role of local ingredients: The case of millet in rural India. *J Culin Sci Technol*. 2020.

29. Kuhn T, Legner C. Blockchain and food traceability: Implications for sustainable tourism. *Tour Hosp Res*. 2023.