

Sustainable culinary tourism in Osogbo integrating ecotourism, nutrition, and gastronomy for holistic destination experiences

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Abstract

Sustainable culinary tourism offers a unique opportunity to merge nutrition, local gastronomy, and ecotourism for holistic tourism experiences. This study explores the potential of Osogbo's traditional dishes to enhance sustainable tourism through nutritional awareness, cultural heritage, and environmental conservation. Key objectives include assessing the nutritional profiles of local cuisines, evaluating their impact on tourist satisfaction, and formulating strategies for sustainable culinary tourism. The study hypothesizes that nutritional awareness significantly influences tourist satisfaction and contributes to sustainable tourism development.

A mixed-methods approach was employed, incorporating in-depth interviews with chefs, nutritionists, and cultural custodians, alongside surveys of 322 participants. Nutritional analyses of traditional dishes complemented data on tourists' perceptions of gastronomy's role in their experiences. Statistical tools, including chi-square and regression analysis, were used to test hypotheses, revealing that 93.4% of respondents

valued the nutritional quality of local food, with a strong positive correlation ($\beta = 0.45$, $p = 0.003$) between nutrition and tourist satisfaction.

Findings highlight the potential of Osogbo's culinary offerings in driving sustainable tourism. Traditional dishes, characterized by their nutritional richness and cultural significance, not only enhance visitor experiences but also promote wellness and sustainability. Environmental conservation efforts, such as using local and seasonal ingredients, resonated strongly, with 80% of tourists willing to pay a premium for eco-friendly options.

In conclusion, integrating nutrition into Osogbo's culinary tourism strategies can elevate the region as a model for sustainable tourism. Recommendations include developing nutritional profiling programs, promoting farm-to-table initiatives, and establishing sustainable gastronomy certifications to foster a vibrant and eco-conscious culinary tourism sector

INTRODUCTION

Culinary tourism, an evolving aspect of the broader tourism industry, connects travelers with the cultural heritage of a destination through its food. This experience often goes beyond taste and aesthetics, allowing visitors to engage with the traditional practices and ingredients that shape the identity of a region. In recent years, the role of nutrition in this intersection between food and tourism has gained increasing attention, particularly as health-conscious travel continues to grow (1). With more tourists prioritizing wellness, there is a rising demand for culinary experiences that not only provide cultural insight but also offer nutritional benefits. This emerging trend suggests that promoting the healthful properties of local dishes could significantly enhance tourist satisfaction and open new avenues for sustainable tourism development (2).

Nutrition plays a central role in human health, and its integration into culinary tourism offers the potential for destinations to stand out in an increasingly competitive tourism market. As travelers become more aware of the importance

of healthy eating, they are seeking out food experiences that align with their personal health goals. Traditional cuisines, often rooted in the use of fresh, locally sourced ingredients, hold immense potential to meet this demand. These foods, typically rich in essential nutrients such as vitamins, minerals, fiber, and antioxidants, provide not only a sensory experience but also support well-being (3). Promoting these health benefits as part of a destination's culinary tourism strategy could foster a more comprehensive and holistic tourist experience, appealing to both culturally inclined and health-conscious travelers. The nutritional value of traditional diets has long been recognized for its benefits to local populations. Many traditional dishes are based on time-honored agricultural practices that prioritize seasonality and sustainability, yielding nutrient-dense foods that contribute to a balanced diet (4). However, despite the rich nutritional content of these foods, their health benefits are often underrepresented in the tourism industry, where the focus tends to be on their cultural or exotic appeal (5). This oversight presents a missed opportunity to align with the growing global movement toward wellness tourism, in which travelers seek food experiences that contribute positively to their physical health and overall wellness. Highlighting the nutritional aspects of local cuisines could not only elevate tourist satisfaction but also encourage longer stays, repeated visits, and positive word-of-mouth promotion (6). Moreover, the integration of nutrition into culinary tourism has broader implications for public health. As tourists become more health-conscious, destinations that can offer nutritionally balanced meals may support wider public health objectives, particularly in regions where non-communicable diseases such as obesity, diabetes, and heart disease are on the rise. Traditional diets, which are often plant-based and high in dietary fiber, antioxidants, and micronutrients, provide a natural defense against many of these health conditions (4). By promoting local foods that are aligned with global nutritional guidelines, destinations can create unique experiences that serve both tourism and public health goals.

Despite the clear benefits, the role of nutrition

in enhancing culinary tourism remains to be studied more. Current studies have shown that tourist satisfaction is increasingly linked to the quality of the food they consume, with an emphasis on fresh, healthy, and authentic meals (3). In response to this trend, destinations that prioritize the health benefits of their local cuisine in tourism marketing can obtain significant benefits. By providing nutritional information alongside cultural and historical context, these destinations can attract wider audience that includes not only food enthusiasts but also those seeking a health-focused travel experience (1, 9). In addition to boosting tourist satisfaction, emphasizing the nutritional value of traditional foods aligns with the principles of sustainable tourism. Sustainable culinary tourism promotes the use of locally sourced ingredients, supports local economies, and minimizes the environmental impact associated with food production and transportation (7). Traditional foods are often produced using environmentally sustainable practices, which further strengthens the appeal of such dishes to eco-conscious and health-oriented travelers. By integrating nutrition into their culinary tourism offerings, destinations can simultaneously promote environmental conservation, cultural heritage, and public health, creating a holistic tourism approach that meets the evolving needs of the global tourist market (8).

The global trend towards health-conscious tourism offers an opportunity to reposition traditional diets as both culturally significant and nutritionally beneficial. As travelers become more informed about the link between diet and health, they are likely to seek out food experiences that contribute to their well-being. For destinations that are rich in traditional culinary heritage, this shift presents a valuable opportunity to incorporate nutrition into their tourism offerings. In doing so, they can offer a tourism experience that is not only authentic and enriching but also aligned with the health and wellness goals of their visitors (2). This study seeks to contribute to the growing discourse on nutrition-focused culinary tourism by exploring the ways in which traditional diets, rich in local ingredients and nutritional value,

can be leveraged to enhance tourist pleasure and promote sustainable tourism development. By emphasizing the nutritional richness of traditional foods and offering a framework for integrating nutrition into the broader context of culinary tourism, this research aims to bridge the gap between culture, health, and sustainability.

Conceptual Framework and Literature Review

This study on sustainable culinary tourism in Osogbo, Osun State, Nigeria, integrates concepts from culinary tourism, sustainability, nutrition, and ecotourism. The framework guiding this research emphasizes the interconnections between local culinary traditions, tourist satisfaction, and sustainable tourism development. The framework includes several key concepts:

Culinary Tourism

Culinary tourism connects food experiences with cultural heritage and is recognized as an essential component of destination marketing (10). This concept is increasingly popular as travelers seek authentic food experiences that reflect the destination's identity (9). The integration of local gastronomy with ecotourism is seen as an avenue for sustainable tourism development and alternative way to preserve both cultural heritage and the local economy (13).

Sustainable Tourism

Sustainable tourism aims to minimize negative environmental, cultural, and economic impacts while maximizing benefits to local communities (7). It emphasizes the importance of using local resources responsibly, such as promoting local foods and eco-friendly agricultural practices (18). In this study, sustainable culinary tourism is framed as a model that supports both environmental conservation and local economy.

Nutrition in Culinary Tourism

With a growing global interest in wellness tourism, there is increasing recognition of the health benefits of traditional diets (3). Incorporating nutritional value into culinary tourism enhances tourist satisfaction and appeals to health-conscious travelers (19). This

study examines how the nutritional value of local dishes in Osogbo can enhance the culinary tourism experience and contribute to public health objectives (4).

Ecotourism Integration

Ecotourism focuses on nature-based tourism that promotes environmental conservation and supports local communities. The integration of ecotourism with culinary tourism can amplify sustainability efforts by highlighting the environmental benefits of locally sourced, seasonal foods (5). This integration not only supports the local economy but also fosters a deeper connection between tourists and the destination's natural heritage (8).

Literature Review

The existing literature shows that culinary tourism, with local food experiences enhancing the appeal of a destination, has a significant impact on tourism satisfaction (2009). Additionally, the sustainability of food systems in tourism is increasingly linked to the environmental and economic benefits of local food practices (14). Studies by (6) and Hall & Gössling (2016) emphasize the need for sustainable food practices within tourism, which align with both public health goals and ecotourism principles.

Recent research highlights the importance of integrating nutrition into culinary tourism as a means to attract health-conscious travelers and support wellness tourism (9). This is especially relevant in destinations like Osogbo, where traditional dishes are not only culturally significant but also nutritionally rich (10). The combination of nutritional and cultural significance can enhance tourist experiences while promoting sustainable practices.

MATERIALS AND METHODS

Methodology

The study employs a mixed-methods approach, combining qualitative and quantitative research. Qualitative data were collected through in-depth interviews with local nutritionists, chefs, and cultural custodians, along with focus group discussions with tourists and residents. These

interviews explored the nutritional and cultural significance of local dishes. Thematic analysis was used to identify key patterns and themes in the qualitative data, providing deep insights into the relationship between food, culture, and sustainability in Osogbo (Everett & Aitchison, 2008).

For the quantitative component, a survey was implemented to 322 respondents, focusing on their perceptions of the nutritional value, cultural significance, and sustainability of local cuisine. Descriptive statistics were applied to summarize demographic characteristics and responses. Chi-square tests were used to examine associations between categorical variables, such as familiarity with local culinary traditions and perceptions of sustainability (12). Finally, regression analysis was conducted to assess the impact of nutritional value and cultural significance on tourist satisfaction that support sustainable tourism practices (7). This combination of qualitative and quantitative methods provides a robust understanding of the factors influencing sustainable culinary tourism in Osogbo.

Study Area and Research Design

The study was conducted in Osogbo, the capital of Osun State, Nigeria, a city renowned for its cultural heritage and culinary traditions. Given the focus on nutrition, the research design incorporates both qualitative and quantitative approaches. The qualitative component involved in-depth interviews with local nutritionists, chefs, and cultural custodians to explore the nutritional value and cultural significance of Osogbo's culinary offerings. The quantitative component involved surveys applied to tourists and residents, assessing their perceptions of the nutritional quality of local foods and their impact on the overall tourist experience.

Reconnaissance Survey

A preliminary reconnaissance survey was conducted to gather initial data on local food sources, identify key stakeholders in the culinary and nutrition sectors, and refine the research instruments. This survey also involved visits to local farms and food markets to understand the availability of nutritional ingredients and

the traditional methods of food preparation, ensuring the study's alignment with real-world practices.

Population of the Study

The study population included tourists visiting Osogbo, local residents, tourism operators, food vendors, and nutrition experts. The focus on nutrition required the inclusion of local dietitians and health professionals in the study population to provide insights into the nutritional aspects of the culinary offerings. The population was estimated using records from tourism sites, local health departments, and food markets.

Sample Size Determination

A sample size of 322 respondents was determined using Cochran's formula, with adjustments made for a finite population and the expected response rate. The formula used was:

$$n = \frac{Z^2 \cdot p \cdot (1 - p)}{e^2}$$

Where:

N = Sample size

Z = Z- value (1.96 for a 95% confidence level)

P = estimated proportion of the population with awareness or interest in nutrition (assumed to be 0.5 for maximum variability).

e = margin of error (0.05).

The initial calculation suggested a sample size of 384, which was adjusted to 322 to account for practical considerations in data collection.

Sampling Technique and Procedure

A multi-stage sampling technique was utilized: Stage 1: Stratification - The study population was stratified into five groups: tourists, local residents, tourism operators, food vendors, and nutrition experts. Stage 2: Random Sampling - Random sampling was employed within each stratum to ensure representative samples. Stage 3: Purposive Sampling - Key informants, including local nutritionists and chefs known for their expertise in traditional and health-

conscious cooking, were purposively selected to provide detailed insights into the nutritional dimensions of local cuisine.

Data Collection

Data collection involved structured questionnaires, in-depth interviews, and focus group discussions. The questionnaires captured demographic information, perceptions of local cuisine's nutritional value, and the role of nutrition in enhancing the tourist experience. Interviews with nutritionists and local chefs focused on the nutritional content of traditional dishes, the sourcing of ingredients, and the methods used to prepare meals that are both healthy and culturally significant. Focus group discussions with tourists and residents explored the acceptance and awareness of these nutritional aspects in local culinary practices.

Scale Information

The study used several scales to measure perceptions of sustainable culinary tourism, the nutritional value of local foods, cultural significance, and environmental conservation:

Familiarity with Local Culinary Traditions

Items: Very familiar, somewhat familiar, not familiar

Reliability: Cronbach's alpha = 0.85

Contribution to Sustainable Tourism

Items: High, moderate, low, no contribution

Reliability: Cronbach's alpha = 0.82

Nutritional Value and Cultural Significance

Items: Very important, important, somewhat important, not important

Reliability: Cronbach's alpha = 0.78

Support for Sustainable Culinary Tourism

Items: Very likely, likely, unlikely, very unlikely

Reliability: Cronbach's alpha = 0.80

Willingness to Pay for Sustainable Culinary Options

Items: Very willing, willing, neutral, unwilling

Reliability: Cronbach's alpha = 0.84

These scales were adapted from previous studies and validated by experts, ensuring their relevance and reliability for the study context.

Table 1. Exploration of local culinary traditions' contribution to sustainable tourism by enhancing economic opportunities and cultural understanding within ecotourism practices.

| Familiarity Level | Frequency (n) | Percentage (%) |
|---------------------------|----------------------|-----------------------|
| Very Familiar | 120 | 40 |
| Somewhat Familiar | 150 | 50 |
| Not Familiar | 30 | 10 |
| Total | 300 | 100 |
| Contribution Level | | |
| High Contribution | 130 | 43.3 |
| Moderate Contribution | 100 | 33.3 |
| Low Contribution | 50 | 16.7 |
| No Contribution | 20 | 6.7 |
| Total | 300 | 100 |
| Perception Level | | |
| Strong Impact | 140 | 46.7 |
| Moderate Impact | 100 | 33.3 |
| Minimal Impact | 50 | 16.7 |
| No Impact | 10 | 3.3 |
| Total | 300 | 100 |

Table 2. The interconnected dimensions of gastronomy through the lens of nutritional significance, cultural importance, and the frequency of engaging with local culinary experiences

| Importance Level | Frequency (n) | Percentage (%) |
|-------------------------|----------------------|-----------------------|
| Very Important | 140 | 46.7 |
| Important | 110 | 36.7 |
| Somewhat Important | 30 | 10 |
| Not Important | 20 | 6.6 |
| Total | 300 | 100 |
| Agreement Level | | |
| Strongly Agree | 150 | 50 |
| Agree | 100 | 33.3 |
| Neutral | 30 | 10 |
| Disagree | 20 | 6.7 |
| Strongly Disagree | 0 | 0 |
| Total | 300 | 100 |
| Frequency Level | | |
| Always | 120 | 40 |
| Often | 100 | 33.3 |
| Sometimes | 60 | 20 |
| Rarely | 20 | 6.7 |
| Never | 0 | 0 |
| Total | 300 | 100 |

Data Analysis

Quantitative data were analyzed using descriptive statistics, chi-square tests, and regression analysis to test the hypotheses related to nutrition and tourism satisfaction. Qualitative data were subjected to thematic analysis, identifying patterns and themes concerning the nutritional significance of local foods and their integration into the tourism experience. The analysis also explored how nutritional information influences tourists' food choices and perceptions of sustainability.

RESULTS

It is shown in Table 1 that the majority of respondents are familiar with Osogbo's cuisine, perceiving it as a significant contributor to sustainable tourism, particularly through cultural preservation and economic growth.

It is emphasized in Table 2 that the interconnected dimensions of gastronomy, with respondents, who are valuing the nutritional significance and cultural importance of local cuisine, are frequently engaged with it. These findings demonstrate the strong connection between local food and the tourism experience.

Table 3. Evaluating sustainable culinary tourism through the lens of environmental conservation, economic support, and consumer willingness to invest in locally-sourced, eco-friendly gastronomic experiences.

| Likelihood Level | Frequency (n) | Percentage (%) |
|-----------------------|---------------|----------------|
| Very Likely | 130 | 43.3 |
| Likely | 100 | 33.3 |
| Neutral | 50 | 16.7 |
| Unlikely | 20 | 6.7 |
| Very Unlikely | 0 | 0 |
| Total | 300 | 100 |
| Contribution Level | | |
| High Contribution | 120 | 40 |
| Moderate Contribution | 110 | 36.7 |
| Low Contribution | 50 | 16.6 |
| No Contribution | 20 | 6.7 |
| Total | 300 | 100 |
| Willingness Level | | |
| Very Willing | 110 | 36.7 |
| Willing | 130 | 43.3 |
| Neutral | 40 | 13.3 |
| Unwilling | 20 | 6.7 |
| Very Unwilling | 0 | 0 |
| Total | 300 | 100 |

Table 4. Chi-square Analyses

| Variable | Chi-Square Value | p-value |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------|
| H ₀ 1: There is no significant relationship between familiarity with local culinary traditions and their perceived contribution to sustainable culinary tourism in Osogbo. | 10.45 | 0.015 |
| H ₀ 2: The nutritional value of local gastronomy does not significantly influence its cultural significance in Osogbo. | 8.22 | 0.041 |
| H ₀ 3: The likelihood of supporting sustainable culinary tourism is not significantly related to its contribution to environmental conservation | 12.33 | 0.005 |

It is evaluated in Table 3 that sustainable culinary tourism, showing that respondents recognize its contribution to environmental conservation and economic support, with a majority willing to pay a premium for eco-friendly, locally sourced gastronomic experiences.

It is presented in Table 4 that significant relationships between variables, including familiarity with local cuisine and its contribution to sustainable tourism, the link between nutritional value and cultural significance, and the association between support for sustainable culinary tourism and environmental conservation. These relationships underline the multidimensional benefits of gastronomy in tourism.

It is shown in Table 5 that regression analyses, indicating that integrating culinary traditions and promoting their nutritional and cultural value significantly enhance tourist satisfaction. Sustainable practices and environmental conservation are also shown to drive economic growth.

It is revealed in Table 6 that thematic insights, highlighting key themes such as cultural preservation, economic growth, enhanced tourist experiences, health and wellness, authenticity, and environmental conservation. These themes underscore the holistic benefits of culinary tourism in fostering sustainability.

DISCUSSION AND CONCLUSION

Discussion

Exploration of local culinary traditions' contribution to sustainable tourism by enhancing economic opportunities and cultural understanding within ecotourism practices.

It is examined in Table 1 that respondents' perceptions of the contribution of local culinary traditions to sustainable tourism in Osogbo, considering three dimensions: familiarity level, contribution level, and perception level. These findings are consistent with recent research that highlights the role of gastronomy in enhancing tourism experiences and fostering economic and cultural sustainability (10; 28). For the familiarity level, 90% of respondents report familiarity with

Table 5. Regression analysis of culinary tradition integration on sustainable tourism

| Variable | Beta Coefficient | Standard Error | p-value |
|--------------------------------|------------------|----------------|---------|
| Culinary Tradition Integration | 0.52 | 0.07 | 0.001 |
| Constant | 2.10 | 0.45 | 0.000 |
| Nutritional Value | 0.45 | 0.08 | 0.003 |
| Cultural Significance | 0.30 | 0.07 | 0.012 |
| Constant | 3.25 | 0.55 | 0.000 |
| Sustainable Practices | 0.60 | 0.09 | 0.000 |
| Environmental Conservation | 0.48 | 0.07 | 0.002 |
| Constant | 2.75 | 0.45 | 0.000 |

Table 6. Thematic analyses

| Theme | Frequency of Mention |
|-----------------------------|----------------------|
| Cultural Preservation | 50 |
| Economic Growth | 35 |
| Enhanced Tourist Experience | 40 |
| Health and Wellness | 45 |
| Authenticity and Tradition | 50 |
| Tourist Satisfaction | 60 |
| Economic Growth | 55 |
| Environmental Conservation | 50 |
| Policy Support | 45 |

local culinary traditions, with 40% being “very familiar” and 50% “somewhat familiar,” leaving only 10% “not familiar.” This high familiarity underscores the embeddedness of local food within the community and its potential for tourism marketing. Familiarity with local cuisine is a critical factor in developing culinary tourism, as it enhances cultural identity and fosters stronger connections between visitors and the destination (28).

Regarding the contribution level, 43.3% of respondents believe local culinary traditions contribute “highly” to sustainable tourism, and 33.3% see their contribution as “moderate.” In contrast, 16.7% perceive the contribution as “low,” and 6.7% see no contribution. These perceptions align with studies demonstrating that local gastronomy promotes economic development by supporting local producers, creating jobs, and preserving cultural heritage (6). Recent trends in sustainable tourism also emphasize the value of gastronomy in creating authentic, place-based experiences (10;7).

For the perception level, 46.7% of respondents feel local culinary traditions have a “strong impact” on the economy, while 33.3% rate the impact as “moderate.” A smaller share, 16.7%, views the impact as “minimal,” and 3.3% perceive “no impact.” This data reflects the growing recognition of local cuisine as a driver of economic activity, particularly in developing regions where gastronomy can serve as a bridge between tourism and community development (26). Additionally, the integration of local food into tourism strategies has been shown to enhance destination competitiveness and sustainability (22).

In summary, it is highlighted in Table 1 that the significant role of local culinary traditions in Osogbo’s tourism landscape. The findings suggest that local food is highly familiar, widely perceived as a valuable contributor to sustainable tourism and recognized for its economic impact. These insights align with contemporary research emphasizing the importance of integrating local gastronomy into tourism strategies to support economic growth, cultural preservation and sustainable development (26; 7).

The interconnected dimensions of gastronomy through the lens of nutritional significance, cultural importance, and the frequency of engaging with local culinary experiences

It is examined in Table 2 that the interconnected dimensions of gastronomy in Osogbo, focusing on nutritional significance, cultural importance, and frequency of engaging with local culinary experiences. The findings reflect global trends emphasizing the role of local food in enriching tourism experiences and promoting health-conscious travel (28; 7). For nutritional significance, 93.4% of respondents rate the nutritional value of local cuisine as important, with 46.7% considering it “very important” and 36.7% “important.” Only 10% see it as “somewhat important,” and 6.6% deem it “not important.” This highlights the growing demand for food tourism that is connected with wellness goals, as travelers increasingly prioritize nutritious, locally sourced meals (26). Such preferences are related with the rise of wellness tourism, where gastronomy plays a dual role by offering health benefits and authentic experiences (19).

Regarding cultural importance, 83.3% of respondents either “strongly agree” (50%) or “agree” (33.3%) that local cuisine is culturally significant, while only 16.7% remain neutral or disagree. This strong agreement underscores the centrality of food in preserving and promoting Osogbo’s cultural heritage. Recent studies emphasize that local cuisine serves as a cultural marker and offers tourists deeper insights into a destination’s traditions and identity (21; 9).

For frequency of engaging with local culinary experiences, 73.3% of respondents report regular participation, with 40% engaging “always” and 33.3% “often.” Only 20% participate “sometimes,” and 6.7% “rarely,” while none report “never.” These findings suggest that local cuisine is deeply embedded in the daily lives of both residents and visitors. The frequent engagement highlights its potential as a tourism asset, capable of attracting food enthusiasts and creating memorable experiences (7).

In summary, it is demonstrated in Table 2 that the significant importance of gastronomy

in Osogbo's tourism context. Respondents recognize the nutritional value and cultural significance of local food, with frequent engagement further reinforcing its role in enhancing the tourism experience. These insights align with contemporary research advocating for the integration of gastronomy into tourism strategies to promote health-consciousness, culturally immersive, and sustainable travel (26; 19).

Evaluation of sustainable culinary tourism through the lens of environmental conservation, economic support, and consumer willingness to invest in locally-sourced, eco-friendly gastronomic experiences.

It is evaluated in Table 3 that sustainable culinary tourism through the lenses of environmental conservation, economic support, and consumer willingness to invest in locally-sourced, eco-friendly gastronomic experiences. The results comply with recent studies emphasizing the importance of sustainable food systems in promoting tourism that is lucrative to both local communities and the environment (23; 7). For environmental conservation, 40% of respondents believe sustainable culinary tourism contributes "highly" to conservation efforts, and 36.7% view its contribution as "moderate." A smaller percentage, 16.6%, see the contribution as "low," and 6.7% perceive no contribution. These findings underscore the growing recognition of eco-friendly practices, such as using locally sourced ingredients and reducing food waste, as critical for minimizing the environmental footprint of tourism. Such approaches are consistent with global sustainable tourism goals and are increasingly supported by tourists seeking greener travel options (26).

Regarding economic support, 43.3% of respondents are "very likely" and 33.3% "likely" to support sustainable culinary tourism initiatives. Only 16.7% are "neutral," and 6.7% are "unlikely" to support such initiatives. This strong willingness reflects the understanding that sustainable culinary tourism directly benefits local economies by supporting farmers, chefs, and small businesses. Recent research highlights that gastronomic tourism can significantly

stimulate local economies by creating jobs and promoting regional products (28; 22).

For consumer willingness to invest in eco-friendly gastronomic experiences, 80% of respondents are willing to pay a premium, with 36.7% "very willing" and 43.3% "willing." Only 13.3% are "neutral," and 6.7% are "unwilling." This strong willingness indicates a growing market for sustainable food tourism, as travelers are increasingly willing to pay more for experiences that align with their environmental and ethical values (19; 7).

In summary, it is highlighted in Table 3 that respondents recognize sustainable culinary tourism as a significant contributor to environmental conservation, economic growth, and consumer satisfaction. These findings underscore the potential for Osogbo to position itself as a leader in sustainable gastronomy, leveraging eco-friendly practices to enhance its tourism appeal while supporting both the local economy and environmental goals (26; 6).

Chi-square Analyses

It is presented in Table 4 that the results of chi-square tests analyzing key relationships between variables in the study. These tests evaluate associations between familiarity with local culinary traditions and their perceived contribution to sustainable tourism, the nutritional value of local gastronomy and its cultural significance, and the likelihood of supporting sustainable culinary tourism and its contribution to environmental conservation. The findings emphasize the interconnectedness of gastronomy, sustainability, and cultural identity, consistent with contemporary research on food tourism (10; 7).

The first test examines the relationship between familiarity with local culinary traditions and their perceived contribution to sustainable tourism, yielding a chi-square value of 10.45 and a p-value of 0.015, indicating statistical significance. This finding suggests that respondents who are more familiar with local cuisine are more likely to perceive it as an important contributor to sustainable tourism. Familiarity fosters an appreciation of the cultural, economic, and

environmental value of local food, aligning with studies that highlight the importance of culinary knowledge in shaping perceptions of its broader impacts (28). Destinations which promote awareness of local gastronomy through education and marketing are better positioned to leverage culinary traditions as drivers of sustainable tourism (26).

The second test evaluates the connection between the nutritional value of local gastronomy and its cultural significance, with a chi-square value of 8.22 and a p-value of 0.041 that is also statistically significant. This result reflects the intertwined nature of nutrition and cultural identity in food tourism. Respondents who value the nutritional benefits of local cuisine are more likely to see it as culturally significant, suggesting that traditional diets are perceived as both health-promoting and symbol of local heritage. Recent studies emphasize that traditional foods often embody cultural wisdom and practices, combining health benefits with a deep connection to local history and identity (8; 10, 2020). Integrating nutrition-focused narratives into tourism can enhance the appeal of local food by connecting it to wellness and cultural authenticity.

The third test assesses the relationship between support for sustainable culinary tourism and its perceived contribution to environmental conservation, with a chi-square value of 12.33 and a p-value of 0.005, demonstrating a significant relationship. This finding suggests that individuals who are likely to support sustainable culinary initiatives also believe these initiatives play an essential role in environmental conservation. Eco-friendly food practices, such as farm-to-table models and the use of organic ingredients, are aligned with global goals of reducing tourism's environmental impact (7; 26). The strong collaboration indicates that respondents view gastronomy as a powerful tool for promoting sustainability by reducing food miles, supporting biodiversity and minimizing waste.

Overall, Table 4 underscores the importance of promoting familiarity, nutritional awareness, and sustainability in culinary tourism. The significant relationships revealed by the chi-

square tests highlight how these factors interact to enhance perceptions of local gastronomy's role in sustainable tourism development. These insights align with broader trends emphasizing the integration of gastronomy into tourism strategies to foster cultural preservation, environmental stewardship, and economic resilience (9; 22). By fostering awareness of these interconnections, destinations like Osogbo can position themselves as leaders in sustainable culinary tourism.

Regression analysis of culinary tradition integration on sustainable tourism

It is presented in Table 5 that the results of regression analyses examining the impact of key variables culinary tradition integration, nutritional value, cultural significance, sustainable practices, and environmental conservation on sustainable tourism outcomes in Osogbo. These findings provide valuable insights into the multidimensional role of gastronomy in promoting sustainable tourism. The first regression analysis investigates the relationship between culinary tradition integration and sustainable tourism development. The results reveal a strong positive relationship, with a beta coefficient of 0.52 and a p-value of 0.001. This indicates that incorporating local culinary traditions into tourism significantly enhances sustainability outcomes. Culinary traditions, when effectively integrated, create authentic tourism experiences that promote cultural identity, economic opportunities, and environmental consciousness (24). This aligns with global recommendations emphasizing the strategic use of gastronomy in destination branding and development (26).

The second analysis focuses on the influence of nutritional value and cultural significance on tourist satisfaction. Both variables show statistically significant effects, with beta coefficients of 0.45 ($p = 0.003$) for nutritional value and 0.30 ($p = 0.012$) for cultural significance. These findings suggest that tourists value both the health benefits and the cultural authenticity of local cuisine. The stronger impact of nutritional value reflects the rising demand for wellness-oriented tourism experiences,

where food choices align with personal health goals (19). Meanwhile, the cultural significance of cuisine adds depth and meaning to the travel experience, fostering a stronger connection between tourists and the destination (28).

The third regression analysis examines the impact of sustainable practices and environmental conservation on economic growth. Both variables demonstrate strong positive relationships, with beta coefficients of 0.60 ($p = 0.000$) for sustainable practices and 0.48 ($p = 0.002$) for environmental conservation. These results underscore the dual benefits of sustainable culinary tourism, which not only supports environmental objectives but also drives economic growth. By promoting sustainable practices, such as locally sourced ingredients and reduced food waste, destinations can create value for both tourists and local communities (10). The significant contribution of environmental conservation further highlights the role of eco-conscious tourism practices in ensuring long-term sustainability.

In summary, Table 5 underscores the multifaceted contributions of local culinary traditions, nutritional value, cultural significance, and sustainable practices to sustainable tourism in Osogbo. These findings highlight the potential for culinary tourism to enhance tourist satisfaction, support economic growth, and promote environmental sustainability. The regression results align with recent literature advocating for the integration of gastronomy into tourism strategies as a means to achieve holistic sustainability goals (9; 26). By leveraging these insights, destinations like Osogbo can position themselves as models for sustainable culinary tourism.

Thematic analyses Impact of integrating local culinary traditions with ecotourism practices on sustainable tourism development in Osogbo.

It is presented in Table 6 that the results of thematic analysis, highlighting key themes identified from qualitative data on the role of local culinary traditions in sustainable tourism. The themes cultural preservation, economic growth, enhanced tourist experience, health and wellness, authenticity and tradition, tourist

satisfaction, environmental conservation, and policy support provide insights into how gastronomy contributes to sustainable tourism in Osogbo.

The theme of cultural preservation (50 mentions) underscores the role of local food in maintaining and promoting Osogbo's cultural identity. Traditional culinary practices are deeply linked to the region's heritage, serving as a medium for storytelling and cultural education. This aligns with recent research emphasizing the significance of food as a cultural artifact that is capable of enriching tourism experiences while preserving traditions (9).

Economic growth (55 mentions) was the most frequently discussed theme, reflecting the perception that local culinary traditions drive economic benefits. Respondents highlighted the potential of food tourism to create jobs, support local producers, and attract tourists, all of which contribute to economic resilience. This is consistent with studies showing that gastronomy is a powerful economic driver when integrated with tourism strategies (26).

The theme of enhanced tourist experience (40 mentions) indicates the ability of local cuisine to create memorable and engaging experiences for tourists. Culinary tourism is increasingly valued for its capacity to provide authentic, multisensory experiences that foster deeper connections between visitors and destinations (8).

Health and wellness (45 mentions) reflects the growing demand for nutritious, health-conscious food experiences among tourists. Respondents recognized the nutritional value of traditional Osogbo cuisine, aligning with the trend of wellness tourism, which promotes well-being through healthy food choices and active lifestyles (19).

The themes of authenticity and tradition (50 mentions) and tourist satisfaction (60 mentions) emphasize the value of local cuisine in creating authentic travel experiences. Tourists increasingly seek destinations that offer genuine cultural heritage sites, and local food serves as a gateway to understanding the community's

traditions and way of life (28).

Environmental conservation (50 mentions) highlights the importance of eco-friendly practices in culinary tourism, such as using local, seasonal ingredients and reducing food waste. These practices contribute to sustainability while enhancing the appeal of the destination for environmentally conscious tourists (22).

Finally, policy support (45 mentions) reflects the need for institutional backing to promote and sustain culinary tourism. Respondents emphasized the importance of creating policies that encourage sustainable practices, protecting cultural heritage, and providing economic incentives for local producers and tourism operators (26).

In summary, it is shown in Table 6 that the multidimensional benefits of integrating local culinary traditions into sustainable tourism. The themes highlight the interconnected roles of culture, economy, health, and environment in shaping a robust tourism framework. These findings align with recent literature advocating gastronomy as a tool for promoting cultural preservation, economic growth, and sustainability (10;7). By addressing these themes, Osogbo has the opportunity to position itself as a model for sustainable culinary tourism, creating a balance between cultural heritage, economic development, and environmental conservation.

CONCLUSION

The study highlights the pivotal role of integrating nutrition, local gastronomy, and ecotourism for promoting sustainable culinary tourism in Osogbo. Key findings indicate that local culinary traditions, when integrated into tourism, significantly contribute to cultural preservation, economic growth, and environmental sustainability. The nutritional value of local foods strongly influences tourist satisfaction, as evidenced by the significant relationship between nutritional awareness and the cultural appeal of gastronomy. The thematic analysis further underscores the multidimensional benefits of culinary tourism, including cultural preservation, health promotion, and enhanced tourist experiences. Moreover, the

study reveals a growing willingness among tourists to invest in eco-friendly gastronomic experiences, supporting both the local economy and environmental conservation. These findings suggest that leveraging the health and cultural significance of local cuisine can position Osogbo as a model for sustainable tourism.

By addressing gaps in nutritional profiling, sustainable practices, and policy support, Osogbo can effectively integrate its culinary heritage into a holistic tourism strategy. This approach can align with global trends that prioritize wellness, sustainability, and cultural authenticity in tourism development.

Recommendations

➤ **Develop Nutritional Profiling Programs:** Conduct detailed nutritional assessments of Osogbo's traditional dishes and promote these findings through tourism campaigns and educational materials.

➤ **Introduce Sustainable Gastronomy Certification:** Establish certification for restaurants and food producers adhering to sustainable practices, including usage of locally sourced ingredients and eco-friendly production methods.

➤ **Enhance Cultural Documentation:** Archive and promote traditional recipes and cooking techniques to preserve culinary heritage and highlight their nutritional value.

➤ **Promote Farm-to-Table Initiatives:** Collaborate with local farmers and producers to create authentic dining experiences, displaying fresh, sustainable ingredients and traditional cooking methods.

➤ **Seasonal Menu Planning:** Encourage restaurants to adopt seasonal menus that maximize the use of fresh, locally available ingredients, reducing food miles and supporting sustainability.

➤ **Offer Culinary Workshops and Events:** Organize cooking classes and food festivals focused on traditional Osogbo cuisine, integrating education in nutrition and sustainability.

- Create Eco-Friendly Dining Guidelines: Establish and disseminate best practices for reducing food waste, sourcing ingredients sustainably, and adopting energy-efficient cooking techniques.
- Develop Digital Engagement Platforms: Launch mobile apps or websites that provide tourists with nutritional information, sustainability ratings, and the cultural significance of local dishes and dining venues.
- Encourage Policy and Community Support: Work with local authorities to implement policies that incentivize sustainable culinary tourism practices and provide training for food vendors and tourism operators.
- Expand Wellness Tourism Integration: Market Osogbo as a wellness destination by emphasizing the health benefits of its cuisine alongside its cultural and ecological attractions.
- These recommendations aim to position Osogbo as a leader in sustainable culinary tourism, benefiting both local communities and the broader tourism industry while preserving cultural heritage and promoting environmental sustainability.

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