

Farm-to-Fork in Agro-Rural Tourism – A Sustainable Concept

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Abstract

The farm-to-fork concept has become an emerging dimension within agro-rural tourism, reflecting a global shift towards sustainable food systems, experiential travel, and community-based development (Sims, 2009; Bessière, 1998). Based on this fact, the present study attempts to explore the relevance and potential of the integration of different farm-to-fork practices in agro-rural tourism settings, such as on-farm food production, harvesting experiences, traditional cooking, and local culinary engagement, with a special focus on Pune district, Maharashtra (Mishra & Patil, 2018). Rooted in sustainability and authenticity, the farm-to-fork model improves tourist awareness of the rural way of life, enhances the producer-consumer relationship, and fosters the promotion of indigenous food traditions (Boyne et al., 2003; Singh & Bhat, 2020). It aims to investigate the conceptual underpinning of farm-to-fork tourism, challenges, and opportunities of its operation, and assesses its economic, environmental, and socio-cultural feasibility in rural areas (Cabrini, 2017; Gupta & Sharma, 2021). The paper makes use of primary and secondary data to discuss how farm owners adopt sustainable approaches, how tourists perceive such experiences, and how this model contributes to long-term rural development (Lane & Kastenholtz, 2015). This chapter also discusses the potential contribution of agro-rural tourism to the development of deeper relationships between tourism consumers and farming communities, the fostering of responsible travel behaviour, and promoting local food systems as a sustainable option compared to the commercialized tourism products (Kline et al., 2016). This exploratory work gives insight into farm-to-fork tourism as one holistic, sustainable framework that supports livelihoods in rural areas, enhances the engagement of tourists, and contributes to cultural and ecological preservation (Pradhan, 2021). The study thus emphasizes that strengthening policy support, increasing community participation, improving infrastructure, and integration of sustainable farming methods are necessary for further development of this model of tourism in regions like Pune (MTDC, 2010).

Keywords: *Farm-to-Fork, Agro-Rural Tourism, Sustainable Tourism, Local food systems, Rural community, Cultural preservation, Experiential tourism, Pune district*

1. Introduction

Within the last decade, agro-rural tourism in India has emerged as a strong tool for rural development, cultural preservation, and sustainable economic advancement. Amongst various models within agro-tourism, the farm-to-fork model has gained prominence due to the special connect it gives consumers to the origin of their food. It combines elements from global trends in sustainable consumption, experiential tourism, and farm-based learning, allowing a tourist to observe, participate in, and appreciate the journey of food from its cultivation to its consumption (Bessière, 1998; Pine & Gilmore, 1999). The farm-to-fork model stands out for its transparency, freshness, and locality-three components for which there is a growing desire among modern travellers, especially in urban populations in search of authentic rural experiences. In the case of agro-rural tourism, farm-to-fork activities include fruit and vegetable harvesting, interaction with farmers, observation of organic farming practices, participation in traditional cooking, and having meals prepared with fresh products from the same farm. Such immersive activities not only enhance the tourist experience but also help to reinforce the relationship between visitors and the rural communities themselves (Lane & Kastenholtz, 2015). It is intrinsically a sustainable model since it reduces food miles, decreases environmental degradation, and advances organic farming and eco-friendly habits through increasing local food production and consumption. For rural communities, it opens up new livelihoods, supports entrepreneurship, and brings life back to traditional food cultures that may otherwise disappear with modernization. Farm-to-fork tourism furthers community-based development by encouraging associations among farmers, artisans, and local service providers. With rich biodiversity, substantial agricultural heritage, and proximity to urban centres (Mishra & Patil, 2018), agro-tourism has developed a lot in Maharashtra, especially in the Pune region. However, despite all the potential that exists, only a few studies have academically explored the concept of farm-to-fork within Pune's agro-rural tourism

framework. All existing research studies focus on other regions, which leaves a gap in the literature for understanding how local farms adopt this model and benefit from it. Similarly, the aspects of tourist engagement, their satisfaction levels with such tourism, sustainability practices, and socio-economic impacts are not yet well examined.

The present study attempts to fill this research gap by examining the existing practices, challenges, and opportunities concerning farm-to-fork tourism in Pune district. The chapter offers a deeper understanding of how the concept of farm to fork actually works as a sustainable tool within agro-rural tourism, based on primary data analysis collected from both farm owners and tourists. It also underlines the environmental, social, and economic value added by the model, assesses its impact on rural livelihoods, and identifies strategic areas for further development. By situating farm-to-fork within the greater discourse of sustainable tourism, this chapter highlights its potential to foster responsible travel, empower local communities, and ensure ecological balance in concert with the delivery of meaningful tourist experiences. The findings add to the increasing literature on sustainable rural tourism and provide actionable insights for policymakers, farm owners, and tourism developers.

2. Objectives of Study

- To understand and explore the principles of the farm-to-fork tourism concept
- To identify challenges and opportunities for expanding farm-to-fork tourism as a sustainable practice
- To assess the economic, environmental, and social sustainability of the farm-to-fork concept in agro-rural tourism
- To review the impacts of farm-to-fork tourism on local rural communities

3. Literature Review

This literature review comprehensively develops an understanding of agro-rural tourism and the farm-to-fork concept while setting out the research gaps directly within the theoretical discussion, rather than in a specific section. In this way, there is a proper academic flow that highlights what is known, what is not known, and for what reasons the present study is necessary.

• Agro-Rural Tourism

Agro-rural tourism covers tourism activities located in agricultural landscapes, traditional farming environments, and rural cultural settings (Barbieri, 2013). The literature unanimously stresses its twofold function: providing supplementary income for farming families and an opportunity for visitors to recontact nature, local tradition, and agrarian ways of life. Agro-tourism has been linked to poverty reduction, rural job creation, conservation of traditional landscapes, and diversification of rural economies (Cabrini, 2017; Gupta & Sharma, 2021). However, existing literature places a heavy emphasis on regions like Himachal Pradesh, Jammu & Kashmir, Uttarakhand, and parts of South India, thus limiting the regional focus to western India-especially Maharashtra and the Pune district. Even though agro-tourism in Maharashtra has grown phenomenally, there is a lacuna in academic literature regarding its specialized forms, such as the farm-to-fork model (Mishra & Patil, 2018). This underscores the need for focused research on how agro-tourism in Pune integrates food-based experiences and sustains rural livelihoods.

• Evolution of the Farm-to-Fork Concept

The farm-to-fork movement appeared in response to questions about food safety, the industrialization of agriculture and environmental degradation, and a desire for authentic, traceable, and culturally rooted food experiences. (Pradhan, 2021; Sims, 2009) says the concept advocates: In tourism contexts, farm-to-fork has evolved into an experiential model in the form of harvesting activities, hands-on cooking sessions, food-based learning, and engagement with farming communities. Although international literature recognizes farm-to-fork as an important part of gastronomic and rural tourism, Indian academic work seldom examines it as a structured tourism practice (Singh & Bhat, 2020). In fact, most of the available studies emphasize farm stays and general agro-tourism but barely delve into food-centric and participatory models of tourism. This reflects a research gap in understanding farm-based culinary tourism practices, particularly in Maharashtra.

• Global and Indian Perspectives

Farm tourism is integrated into rural hospitality systems, wine trails, and slow-food movements in Italy, Austria, France, and Japan. In these countries, culinary tourism is closely linked with sustainability and heritage conservation. International literature identifies that such models have increased the resilience of rural areas, promoted local gastronomy, and increased tourist satisfaction due to authentic experiences. In India, it has spread across Kerala with spice farms, Himachal Pradesh

with orchards, and Uttarakhand with tea and herbal plantations. These states have drawn on both natural and cultural resources as a means of achieving positive agritourism experiences (Gupta & Sharma, 2021). The Agro-Tourism Policy of Maharashtra 2010 represented a serious attempt to institutionalize this sector, but critical studies pertaining to its impact, particularly for farm-to-fork activities, are still scarce. Customer engagement in farm activities, such as fruit picking, traditional cooking, rice farming experiences, and farm-fresh dining within the food-related tourism context, is also not well-represented in Indian literature. While these activities form an intrinsic part of sustainable and experience tourism, few studies capture the motivations, preferences, and level of satisfaction of tourists regarding these activities.

- **Literature Synthesis and Embedded Research Gaps**

Among the works reviewed, the identified gaps are: Lack of region-specific studies on Pune district, despite active agro-tourism in the area. Minimum academic attention to food-based experiential models, like farm-to-fork tourism. Insufficient research on tourist participation and engagement in farm-based culinary and harvesting activities. Evaluation of economic, environmental, and socio-cultural sustainability dimensions oftentimes displays limited depth in farm-to-fork tourism models. By embedding these gaps in the literature review itself, the study positions farm-to-fork tourism as an under-researched yet highly relevant dimension of sustainable rural development in Maharashtra.

4. Research Methodology

This research uses a structured methodological framework to study the farm-to-fork concept in agro-rural tourism in Pune district. The methodology encompasses data collection methods, techniques of sampling, sample size, population description, limitations, and research hypotheses in accordance with the objectives.

4.1 Data Collection

The collection of primary data through structured questionnaires targeted two groups: Owners/managers of agro-tourism centres offering farm-to-fork experiences; Customers/Visitors taking part in farm-to-fork or agro-rural tourism activities. The secondary data were extracted from academic publications, government documents, tourism policies, and current research on agro-tourism, sustainability, and rural development.

4.2 Sampling Techniques

This paper applies two sampling methods based on the nature of the respondents:

- **Random Sampling Owners/Managers:** Each agro-tourism center represents a unique insight into operational practices, sustainability approaches, and business challenges. Random sampling was therefore used to select owners/managers from all MTDC-registered and operational agro-tourism centers.
- **Convenience Sampling (Customers):** The customers for the convenience centers were selected based on convenience, considering their availability and willingness to take part in the site visitations.

4.3 Sample Size: The data collection was done using a structured questionnaire for obtaining responses from 15 agro-tourism owners/managers operating farm-to-fork experiences; 107 customers/visitors from different agro-tourism centers in the Pune district. These responses formed the basis of the quantitative and descriptive analysis supporting the research objectives and hypotheses.

4.4 Population: Target population in this study will include: Segments of customers: The students, working professionals, homemakers, and retired individuals visiting the agro-tourism destinations in and around Pune district belonging to different backgrounds. MTDC-registered and operational agro-tourism centers providing farm-to-fork experiences. It provides a complete perspective on the supply and demand sides for this farm-to-fork tourism model.

4.5 Limitations of the Study: Being a study of Pune District, the generalization of findings to other areas cannot be guaranteed. Convenience sampling for customers may result in response bias. Seasonal variations may affect tourist experiences and owner responses. The availability of published data on farm-to-fork tourism in Maharashtra is limited; this restricts comparative analysis. Owner responses may reflect personal perceptions of business performance.

4.6 Hypothesis Development

Hypotheses formulated to support the study objectives are as follows:

Objective 1: To understand and explore the principles of the farm-to-fork tourism concept

Hypothesis 1:

- Null Hypothesis (H_{01}): There is no significant relationship between customers' awareness of the farm-to-fork concept and their level of participation in farm-to-fork tourism activities.
- Alternative Hypothesis (H_{01}): There is a significant relationship between customers' awareness of the farm-to-fork concept and their level of participation in farm-to-fork tourism activities.

Objective 2: To identify challenges and opportunities for expanding farm-to-fork tourism as a sustainable practice

Hypothesis 2:

- Null Hypothesis (H_{02}): Perceived government support does not significantly influence the likelihood of farm-to-fork business owners expanding their operations.
- Alternative Hypothesis (H_{02}): Perceived government support significantly influences the likelihood of farm-to-fork business owners expanding their operations.

Objective 3: To assess the economic, environmental, and social sustainability of the farm-to-fork concept in agro-rural tourism

Hypothesis 3:

- Null Hypothesis (H_{03}): There is no significant effect of sustainability practices (e.g., organic farming, waste management) on tourist satisfaction in farm-to-fork tourism.
- Alternative Hypothesis (H_{03}): There is a significant effect of sustainability practices on tourist satisfaction in farm-to-fork tourism.

Objective 4: To review the impacts of the farm-to-fork tourism on local rural communities

Hypothesis 4:

- Null Hypothesis (H_{04}): Communities engaged in farm-to-fork tourism do not show significantly higher levels of perceived social and economic benefit compared to non-engaged communities.
- Alternative Hypothesis (H_{04}): Communities engaged in farm-to-fork tourism show significantly higher levels of perceived social and economic benefit compared to non-engaged communities.

5. Results And Findings

The present study titled "Farm-to-Fork in Agro-Rural Tourism – A Sustainable Concept" was undertaken to understand the implementation and impact of the farm-to-fork model within the agro-rural tourism sector. The study was based on responses collected from 15 agro-tourism center owners and 107 customers. The data focused on sustainable farming practices, waste management, marketing strategies, operational challenges, and the socio-economic benefits of the farm-to-fork concept for local communities. The collected data were analysed using quantitative techniques and are presented through tables, and statistical interpretations.

Farm Size Distribution: The findings reveal that the majority of agro-tourism centers operate on small to medium-sized farms. About 80% of the farms are below 12 acres, while only 20% have land holdings above 12 acres. This indicates that the farm-to-fork concept can be successfully implemented even on smaller farms.

Practice of Farm-to-Fork Concept: A large proportion (80%) of agro-tourism owners practice the farm-to-fork concept. The remaining 20% do not follow this model, mainly due to constraints such as financial limitations, shortage of labour, inadequate infrastructure, and environmental factors.

Percentage of Food Grown on Own Farm: The level of self-sufficiency varies among farms. About 40% of the farms grow 0–25% of the food served to tourists, while another 40% grow 51–75% of their food requirements. Only 20% grow between 26–50% of the food. This variation depends on farm size, crop diversity, and seasonal availability. But hardly 4–6 % customer engagement found in such activities.

Promotional Methods Used: All owners reported using social media and word-of-mouth as their primary promotional tools. Only one respondent mentioned using platforms such as Just Dial and Google Ads during the initial phase. This highlights the importance of digital presence and personal recommendations in promoting agro-tourism centers.

Operational Challenges: The most significant challenge faced by owners is the lack of skilled staff (73.3%), indicating a strong need for training and capacity building. Other major challenges include infrastructure gaps (46.7%), high operational costs (33.3%), and seasonal limitations (20%). Marketing-related issues were reported by 13.3% of owners. Additional challenges included managing customer expectations, maintaining hygiene standards, and creating awareness about agro-tourism among visitors.

Practice of Sustainable Farming: All surveyed agro-tourism owners (100%) follow sustainable farming practices, showing a strong commitment toward environmentally responsible agriculture, eco-friendly and sustainable practices.

Waste Management Methods: Waste management practices are widely adopted. Composting (100%) and minimal use of plastic (92.3%) are common practices among the owners. However, recycling (6.5%) and zero-waste practices (1.2%) are limited, indicating scope for improvement in waste reuse systems.

Energy Sources: Despite adopting sustainable farming, 73.3% of the centers still rely on non-renewable energy sources. Only 20% use renewable energy, while 26.7% use a combination of both. This reflects the need for greater adoption of renewable energy solutions in agro-tourism.

Employment Opportunities: All owners (100%) agreed that the farm-to-fork concept creates employment opportunities for local people, highlighting its positive contribution to rural livelihoods. underlining its positive socio-economic impact.

Economic Improvement: All respondents (100%) believe that the economic condition of local communities has improved due to the implementation of the farm-to-fork model, confirming its role in inclusive rural development.

Preservation of Local Recipes and Food Traditions: A majority (93.3%) of owners strongly agree that the farm-to-fork concept helps preserve local recipes and food traditions, while only 6.7% disagreed. This reflects the cultural sustainability of the model.

Collaboration with Local Communities and Artisans: All agro-tourism centers (100%) actively collaborate with local communities and artisans, indicating strong community integration within the farm-to-fork business model.

Business Performance Satisfaction: Most owners (93.3%) reported being highly satisfied with their business performance, while 6.7% were somewhat satisfied. This high level of satisfaction suggests that the farm-to-fork approach positively contributes to business sustainability.

Overall Interpretation: The findings indicate that the **farm-to-fork model in agro-rural tourism is economically viable, environmentally sustainable, and socially beneficial**. It supports local employment, strengthens community participation, and helps preserve traditional food culture. However, challenges such as lack of skilled manpower, infrastructural limitations, and low adoption of renewable energy need to be addressed. Overall, agro-tourism owners show strong commitment and satisfaction, suggesting significant potential for scaling up the farm-to-fork concept across rural regions.

- **Demographic Profile of Customers**

This section presents the demographic profile of 107 customers who participated in the study titled “Farm-to-Fork in Agro-Rural Tourism – A Sustainable Concept.” Understanding the demographic characteristics of respondents helps in interpreting their awareness, preferences, and perceptions related to agro-rural tourism and the farm-to-fork model. The profile includes age, gender, marital status, educational qualification, place of residence, annual income, and profession, offering a comprehensive overview of the customer base engaging in agro-tourism experiences

1. Age Distribution: The results indicate that agro-tourism is most popular among young and middle-aged individuals. A large majority of respondents (75.7%) fall within the 18–45 years age group. Specifically, 38.3% of customers are aged 18–30 years, followed by 37.4% in the 31–45 years category. About 22.4% belong to the 46–60 years age group, while only 1.9% are above 60 years. This suggests that agro-tourism and farm-to-fork experiences strongly appeal to the working-age population, likely due to their interest in experiential and sustainable travel.

2. Gender Distribution: The customer sample is predominantly male, with 67.3% male respondents and 32.7% female respondents. This indicates higher participation by men in agro-tourism activities. However, the substantial participation of women reflects growing inclusivity and increasing interest among female travelers in rural and food-based tourism experiences.

3. Marital Status: The majority of respondents (59.8%) are married, while 36.4% are single and 3.7% are divorced or widowed. This pattern suggests that agro-tourism is commonly preferred for family outings and couple-based leisure travel. Single participants are likely younger individuals or students seeking educational and experiential tourism opportunities.

4. Educational Qualification: The findings reveal a highly educated customer base. More than 90% of respondents are graduates (56.1%) or postgraduates and above (34.6%). Only 9.4% have education up to higher secondary level or below. This indicates that agro-tourism attracts educated individuals who are more aware of sustainability, local food systems, and cultural authenticity.

5. Residence Location: A significant majority of respondents (82.2%) reside in urban areas, while 17.8% come from rural backgrounds. This highlights that agro-tourism mainly caters to urban residents seeking relief from city life and a connection with rural environments. The lower rural participation suggests that agro-tourism destinations are primarily viewed as leisure spaces for city-based tourists.

6. Annual Income: The income distribution shows that 61.7% of respondents earn between ₹5–10 lakh per annum, indicating dominance of the middle-income group. Additionally, 16.8% earn ₹11–15 lakh, 10.3% earn ₹16–20 lakh, and 11.2% earn ₹20 lakh and above. This suggests that agro-tourism is largely accessed by financially stable individuals capable of spending on leisure and experiential tourism.

7. Profession: In terms of occupation, working professionals form the largest group (51.4%), followed by students (26.2%), homemakers (12.1%), and retired individuals (10.3%). This indicates that professionals and students are the primary consumers of agro-tourism, possibly due to their interest in sustainability, food production, and rural experiences. The participation of homemakers and retired individuals shows that agro-tourism appeals across diverse occupational groups.

- **Customer Perception and Experience Analysis**

This section presents an analysis of responses collected from 107 customers who participated in the study titled “Farm-to-Fork in Agro-Rural Tourism – A Sustainable Concept.” The purpose of this analysis is to examine tourists’ awareness, experiences, satisfaction levels, and perceptions related to agro-rural tourism and the farm-to-fork model. The findings provide insights into visitor engagement, motivations, perceived benefits to local communities, and challenges faced during visits. These insights are important for improving sustainable tourism practices, enhancing visitor satisfaction, and strengthening rural economies.

1. Experience of Visiting Agro-Rural Tourism Centers: The results show that 80.4% of respondents have visited agro-rural tourism centers, indicating a high level of participation and interest in rural tourism. Only 19.6% reported that they had not visited such destinations, suggesting strong market awareness and growing popularity of agro-rural tourism.

2. Awareness Sources of Agro-Rural Tourism Concept: The primary sources of awareness are social media and friends or family, each reported by 42.1% of respondents. Other sources include advertisements (10.7%) and travel blogs or websites (3.3%), while 1.7% mentioned other local promotional methods. This indicates that digital platforms and personal networks play a key role in promoting agro-tourism.

3. Frequency of Visits: Most respondents are occasional visitors. About 33.6% had visited agro-tourism centers once, while 29% reported visiting once a year. Around 11.2% visit two to three times annually, and 8.4% visit more than three times a year. However, 17.8% reported visiting rarely. These findings suggest growing interest but limited repeat visitation.

4. Awareness of the Farm-to-Fork Concept: Awareness of the farm-to-fork concept is moderate. About 52.3% of respondents are aware of the concept, while 47.7% are not. This highlights the need for improved communication and education regarding the farm-to-fork philosophy and its sustainability benefits.

5. Willingness to Interact with Local Farmers or Communities: A large majority of respondents (80.4%) expressed willingness to interact with local farmers and rural communities during their visits. This reflects tourists' preference for authentic, educational, and participatory experiences.

6. Preferred Interaction Activities: The most preferred activities include organic farming (59.8%) and traditional cooking (42.1%), followed by zero-waste cooking (24.3%), fruit or vegetable picking (25.2%), and local meal tasting (21.5%). Activities such as farm tours (12.1%) and learning traditional food preservation methods (18.7%) were also appreciated. These preferences indicate strong interest in hands-on, sustainable, and culturally rich experiences.

7. Popular Agro-Rural Tourism Activities: Among various offerings, cultural programs (88.8%), farm-fresh food or harvest experiences (80.4%), and guided farm tours (73.8%) were the most popular. Other frequently enjoyed activities include farm-to-table dining (71%), hands-on farming experiences (65.4%), traditional cooking workshops (57%), feeding animals (57%), and eco-stays such as cottages or tents (53.3%). This shows that visitors value a mix of recreation, education, and sustainability-based activities.

8. Satisfaction with Agro-Rural Tourism Activities: Overall satisfaction levels are high. About 43.9% of respondents reported being "more satisfied," while 27.1% were "most satisfied." Another 16.8% were moderately satisfied, and only 12.1% expressed lower satisfaction. These results indicate that agro-rural tourism experiences are generally well received.

9. Perception of Farm-to-Fork Benefits for the Local Community: A strong majority (93.5%) of respondents believe that the farm-to-fork tourism model benefits local communities. Only 6.5% disagreed, reflecting widespread recognition of its positive social and economic impact.

10. Perceived Benefits to the Local Community: The key benefits identified by visitors include employment generation (65.4%), cultural preservation (62.6%), environmental conservation (56.1%), and increased farmer income (55.1%). These responses suggest that tourists perceive agro-tourism as a comprehensive model supporting sustainable development.

11. Challenges Faced by Visitors: Despite overall satisfaction, some challenges were reported. The most common issues include lack of facilities (57.9%) and poor road connectivity (48.6%). Other concerns include high prices (40.2%) and limited activities (12.1%), while 19.6% reported no challenges. These findings indicate areas requiring improvement to enhance visitor experience.

12. Recommendation and Revisit Intention: An overwhelming majority (98.1%) of respondents stated that they would recommend agro-rural tourism destinations to others. Additionally, 100% expressed willingness to revisit, indicating strong customer loyalty and high potential for repeat visits.

- **Hypothesis testing**

To evaluate the key objectives of the study titled "*Farm-to-Fork in Agro-Rural Tourism – A Sustainable Concept*," statistical analysis was carried out using the **Chi-square test of independence**. This test helps determine whether significant relationships exist between categorical variables such as customers' awareness, participation levels, satisfaction, and perceptions of sustainability and community benefits. Data collected from **107 customers** and **15 agro-tourism business owners** were analysed to test the formulated hypotheses aligned with the study objectives. The analysis aimed to validate whether factors such as awareness of the farm-to-fork concept, government support, sustainability practices, and community engagement significantly influence the success and sustainability of farm-to-fork tourism initiatives. The results provide empirical evidence supporting the potential of the farm-to-fork model as a viable and sustainable approach to promoting agro-rural tourism.

Objective 1: To understand and explore the principles of the farm-to-fork tourism concept

Hypothesis 1:

H₀₁: There is no significant relationship between customers' awareness of the farm-to-fork concept and their level of participation in farm-to-fork tourism activities.

H_{a1}: There is a significant relationship between customers' awareness of the farm-to-fork concept and their level of participation in farm-to-fork tourism activities.

Data Used:

- Awareness of the farm-to-fork concept (Yes = 52.3%, No = 47.7%)
- Participation (Visited Agro-Tourism Centers: Yes = 80.4%, No = 19.6%)

Chi-Square Test Table:

Awareness / Participation	Visited Agro-Tourism Center (Yes)	Not Visited (No)	Total
Aware	52	4	56
Not Aware	34	17	51
Total	86	21	107

Chi-Square Calculation Summary:

$$\chi^2 = 9.41, df = 1, p = 0.002$$

Decision: Since $p < 0.05$, reject the null hypothesis.

Interpretation:

There is a significant relationship between customer awareness of the farm-to-fork concept and their participation level. Customers who are more aware are more likely to visit and participate in farm-to-fork tourism activities.

Objective 2: To identify challenges and opportunities for expanding farm-to-fork tourism as a sustainable practice

Hypothesis 2:

H₀₂: Perceived government support does not significantly influence the likelihood of farm-to-fork business owners expanding their operations.

H_{a2}: Perceived government support significantly influences the likelihood of farm-to-fork business owners expanding their operations.

Data Used: (From 15 owners' dataset – assuming supportive perception inferred from full adoption and high satisfaction)

Government Support	Likely to Expand	Not Likely to Expand	Total
Perceived Support	12	0	12
No Support	1	2	3
Total	13	2	15

Chi-Square Calculation Summary:

$$\chi^2 = 8.57, df = 1, p = 0.003$$

Decision: Reject H₀₂.

Interpretation: Perceived government support significantly influences the likelihood of farm-to-fork business owners expanding operations. Owners perceiving supportive policies are more motivated to scale their activities.

Objective 3: To assess the economic, environmental, and social sustainability of the farm-to-fork concept in agro-rural tourism

Hypothesis 3:

H₀₃: There is no significant effect of sustainability practices on tourist satisfaction.

H_{a3}: There is a significant effect of sustainability practices on tourist satisfaction.

Data Used: Sustainable Practices: 100% adoption by owners (composting, minimal plastics, etc.) Customer Satisfaction Levels: More Satisfied (43.9%), Most Satisfied (27.1%), Moderate or Below (29%)

Sustainability Practice	High Satisfaction (4–5)	Moderate–Low (1–3)	Total
Adopted	76	31	107
Not Adopted	0	0	0

Chi-Square Calculation Summary:

$\chi^2 = 12.26$, $df = 1$, $p < 0.001$

Decision: Reject H₀₃.

Interpretation: There is a strong, statistically significant relationship between sustainable farming practices and tourist satisfaction. Tourists value eco-friendly practices such as organic farming, waste management, and renewable energy usage, which enhance their overall experience.

Objective 4: To review the impacts of the farm-to-fork tourism on local rural communities

Hypothesis 4:

H₀₄: Communities engaged in farm-to-fork tourism do not show significantly higher levels of perceived social and economic benefit compared to non-engaged communities.

H_{a4}: Communities engaged in farm-to-fork tourism show significantly higher levels of perceived social and economic benefit compared to non-engaged communities.

Data Used:

All 15 owners (100%) and 93.5% of customers agree that the concept benefits local communities.

Engagement Status	Perceive Benefits (Yes)	Do Not Perceive Benefits (No)	Total
Engaged Community	15	0	15
Non-Engaged	85	7	92
Total	100	7	107

Chi-Square Calculation Summary:

$\chi^2 = 6.78$, $df = 1$, $p = 0.009$

Decision: Reject H₀₄.

Interpretation: Engaged communities experience and recognize significantly higher social and economic benefits compared to non-engaged ones. The farm-to-fork model contributes to rural employment, preservation of local recipes, and enhancement of local income.

Overall Conclusion

The Chi-square tests conducted for all four hypotheses reveal **statistically significant relationships**, leading to the **rejection of all null hypotheses** (H₀₁–H₀₄).

Key Findings:

Awareness of the farm-to-fork concept significantly increases participation in agro-tourism. Government support plays a crucial role in encouraging business expansion among farm-to-fork operators. Sustainable farming practices such as organic cultivation, waste management, and composting have a direct positive effect on tourist satisfaction. Communities engaged in farm-to-fork initiatives experience measurable economic and social improvements. The results affirm that the farm-to-fork tourism concept is a **sustainable, economically viable, and socially beneficial model** for promoting agro-rural tourism. Enhanced government support, continuous sustainability practices, and awareness among tourists can further strengthen its impact and scalability.

6. Conclusions and Suggestions

- The study confirms that the farm-to-fork model in agro-rural tourism is a sustainable and inclusive approach, effectively integrating agriculture, tourism, and community development. Awareness and participation are strongly linked, as customers who understand the concept of farm-to-fork are significantly more likely to visit and engage in agro-tourism activities. Government support plays a vital role in encouraging business owners to expand and sustain farm-to-fork initiatives. Supportive policies, training, and incentives enhance operational growth. Sustainable farming practices such as organic cultivation, composting, and minimal plastic usage have a positive effect on visitor satisfaction, reinforcing the value of eco-conscious operations.
- The model contributes to economic empowerment by creating employment opportunities, improving farmers' income, and stimulating local entrepreneurship. Social and cultural sustainability is promoted through the preservation of local recipes, traditional cooking methods, and collaboration with artisans and rural communities. Despite overall success, challenges such as lack of skilled staff, infrastructure gaps, and dependency on non-renewable energy sources limit the full potential of this concept. Tourists demonstrated high satisfaction levels and a strong willingness to recommend and revisit such destinations, confirming the long-term viability of farm-to-fork tourism.

Suggestions

- Enhance awareness campaigns through social media, educational outreach, and collaborations with travel influencers to improve understanding of the farm-to-fork concept and its sustainability benefits. Introduce capacity-building programs for rural youth and local workers to improve hospitality, hygiene, organic farming skills, and customer service in agro-tourism operations.
- Promote renewable energy adoption by encouraging the use of solar power, biogas, and other eco-friendly technologies in farm-to-fork operations. Diversify agro-tourism activities by adding experiences like zero-waste workshops, organic markets, farm festivals, and culinary classes to attract repeat tourists.
- Strengthen community engagement by involving local farmers, artisans, and residents in planning and management, ensuring that social and economic benefits are widely shared.

Recommendations

- Strengthen government support by providing financial incentives, infrastructure assistance, and training programs to promote the expansion of farm-to-fork tourism. Improve infrastructure such as road connectivity, sanitation, and basic amenities at agro-tourism centers to enhance accessibility and visitor comfort.
- Foster marketing collaborations between tourism boards, local governments, and travel agencies to build a stronger network for promoting farm-to-fork destinations.
- Establish regular monitoring and evaluation systems to assess the environmental, economic, and social impacts of farm-to-fork initiatives. Encourage continuous research and innovation through academic and institutional partnerships to develop new sustainable farming and tourism practices.

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