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Agritourism and farmers' income diversification: A socio-economic comparison between Kerala and Karnataka

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Abstract

Agritourism is emerging as a crucial strategy in India to enhance farmers' income diversification, improve household livelihoods, and promote sustainable rural development. This research investigates the socio-economic characteristics of farmers involved in agritourism in Kerala and Karnataka, regions known for their diverse agricultural landscapes and emerging rural tourism activities. This study offers a comprehensive analysis of the agritourism sector by examining key agritourism specific factors and identifying distinct features that contribute to its development. Data were gathered from 120 farmers who were actively involved in agro-tourism activities, selected randomly to capture a wide range of experiences and practices among respondents. Semi-structured interviews were used for data collection, and the data were analysed using descriptive statistical methods. The results indicate that middle aged farmers with medium to large landholdings and higher educational qualifications are predominant participants in agritourism. The Mann-Whitney U test analysis reveals significant regional disparities in critical economic and managerial aspects, with Kerala demonstrating a notable advantage due to underlying foundational factors. This study underscores agritourism's role in driving income diversification and supporting rural economic development. The findings emphasize the need for supportive policies and training initiatives to help farmers overcome challenges and realize agritourism's full potential in both states.

Keywords: Agritourism, socio-economic factors, farmers, Kerala, Karnataka

Introduction

Agriculture and allied sector play a pivotal role in the global economy, and in countries like India, it remains a cornerstone of livelihood and sustenance. Contributing approximately 20% to the national Gross Domestic Product (GDP) (Kumar *et al.*, 2023) ^[20] and employing nearly 60% of the population (Subramanian *et al.*, 2023) ^[35], Indian agriculture is essential for the country's socio-economic stability. However, the sector faces significant structural challenges, with around 86% of farmers categorized as small and marginal (NSO, 2019) ^[25]. These farmers contend with fragmented landholdings, unpredictable climatic conditions, such as irregular monsoons and frequent droughts, and volatile market prices. These issues have resulted in widespread agrarian distress, leading to financial instability, indebtedness, and in extreme cases, farmer suicides (GOI, 2013) ^[11]. In response to these challenges, income diversification has emerged as a critical strategy to ensure the sustainability of rural livelihoods (Ellis, 1998) ^[9]. One promising avenue in this regard is agritourism, which allows farmers to supplement their agricultural income by

offering tourism-related experiences on their farms (Choenkwan *et al.*, 2016) ^[6].

Agritourism, as defined by the World Tourism Organization (1998), involves offering farm based experiences such as accommodations, meals, and interactive farming activities that allow tourists to engage with agricultural life. Globally, it is recognized as a dynamic sector within rural tourism, providing visitors with immersive opportunities to participate in activities like planting, harvesting, and livestock care (Barbieri & Mshenga, 2008) ^[4]. The United Nations World Tourism Organization (UNWTO) has acknowledged the significance of this sector by designating May 16th as World Agritourism Day, reflecting its growing global importance. It is a form of rural tourism, creates new income opportunities for local businesses while also enabling residents to actively participate in preserving their native resources and cultural heritage (Quaranta *et al.*, 2016) ^[30]. The Indian government has recognized this potential of agritourism as a means of enhancing rural incomes and has been actively promoting its expansion as part of broader rural development initiatives. Hence, it fosters cross cultural

exchanges, promotes environmental sustainability, and contributes to the economic resilience of farming communities (Mahida, 2023) ^[23]. The various Agritourism activities such as farm tours, bullock cart rides, participation in traditional agricultural operations, and access to farm fresh produce allow tourists to experience rural life while providing farmers with a valuable supplementary income source (Singh *et al.*, 2017) ^[33]. These opportunities could help to revitalize rural economies by creating sustainable livelihoods and preserving traditional agricultural practices (Olagunju, 2024) ^[26]. Therefore, by providing an additional revenue stream, agritourism helps to mitigate the financial risks associated with agriculture, particularly for small and marginal farmers (Lucha *et al.*, 2016) ^[22]. In states such as Maharashtra, Kerala, Karnataka, and Rajasthan, agritourism has already gained significant traction, with farmers leveraging their agricultural assets to offer unique tourist experiences. In south India, Kerala has established itself as a globally recognized tourism brand (Pushpalatha, 2020) ^[29], offering both world class amenities and authentic local experiences. The tourism industry draws significant investment, thereby increasing its dependency on the natural environment. The state is particularly renowned for its ecotourism efforts and scenic backwaters, which were once vital transportation routes but now serve as a tranquil retreat for tourists seeking relaxation (Devi, 2020) ^[8]. Agro-ecotourism in Karnataka offers considerable economic opportunities for rural populations, generating annual revenues that exceed those from conventional farming activities (Geetha and Umesh, 2024) ^[10].

The development of agro-tourism in rural areas involves more than just aligning tourist demand with the availability of local products; it requires assessing how suitable and acceptable the area is for such initiatives (Kubickova and Campbell, 2020) ^[19]. As agritourism continues to expand in India, it becomes increasingly important to understand the socio-economic characteristics of the farmers involved in this. A thorough analysis of the profiles of these farmers can offer valuable insights into the factors that facilitate successful agritourism ventures. This study focuses on the agritourism practices of farmers in Kerala and Karnataka, two states with rich agricultural traditions and growing agritourism markets and the key socio-economic variables influencing it. In addition, the study also explores the comparison of agritourism specific factors. The findings from this research will provide a comprehensive understanding of how agritourism contributes to income diversification, economic stability, and sustainable rural development. By highlighting the characteristics and motivations of farmers involved in agritourism, this research offers a foundation for future studies and policy initiatives aimed at expanding the benefits of agritourism across different regions and farming communities. This knowledge is crucial for developing targeted policies and support systems that can enhance the effectiveness of agritourism as a tool for promoting agricultural and rural sustainability at both national and international levels. Understanding the socio-economic factors influencing agritourism participation is critical for policymakers and extension professionals who aim to promote agritourism as a viable strategy for agricultural and rural development.

Materials and Methods

This study employed an ex post facto research design to assess the socio-economic characteristics of farmers involved in agritourism from states of Kerala and Karnataka. The study was conducted in the Wayanad and Idukki districts of Kerala, and the Ballari and Chitradurga districts of Karnataka, which were purposively selected for being well known agro-tourism destinations in their respective states. Kerala is renowned for its scenic landscapes and cultural heritage, while Karnataka offers diverse agricultural practices, including coffee and spice plantations.

The sampling approach ensured a representative sample by randomly selecting 60 respondents from each state, resulting in a total of 120 participants with diverse agritourism experiences and farm characteristics. Data collection methods included semi structured interviews, in-depth interviews, casual conversations, and on-site observations, providing comprehensive insights into farmers socio-economic profiles. Data analysis was employed using descriptive statistical methods, including frequency distributions, percentages, and quartiles. This analysis facilitated a clear understanding of farmers socio-economic profiles and enabled comparisons between Kerala and Karnataka, highlighting regional differences. The comparison of the socioeconomic variables of both states were done by employing Mann-Whitney U test.

Results and Discussion

The distribution of major socio-economic characteristics of both states are given in the Table 1. The age wise distribution of respondent farmers involved in agritourism indicates a significant majority are middle-aged, with 55% in Kerala and 66.66% in Karnataka, resulting in an overall percentage of 60.83%. This demographic trend suggests that middle-aged individuals are more actively engaged in agritourism, primarily as a strategy to diversify their income sources from traditional agricultural practices (Karri, 2016) ^[16], which similarly highlighted the predominance of middle-aged individuals in agritourism activities. Insights from field research indicate that this age group often possesses the necessary experience and financial stability to invest in agritourism ventures. Additionally, gender analysis reveals a notable disparity, as more than three-fourth of the respondents from both states are male, leading to an overall male representation of 89.16% across both locales. Such gender distribution suggests that male farmers are more inclined to engage in agritourism, likely due to entrenched traditional gender roles and responsibilities in rural settings (Khazami and Lakner, 2021) ^[18]. Societal norms often confine women to household duties, thereby limiting their participation in agro-ecotourism activities (Sukesi *et al.*, 2024) ^[36]. To increase women's participation, studies recommend strengthening institutions, providing skill development opportunities, and encouraging gender inclusive decision making (Sukesi *et al.*, 2024) ^[36].

Family dynamics provide further insights into the profiles of agritourism participants, with more than half of respondents in Kerala belonging to small families and 46.66% in Karnataka coming from medium sized families. This disparity highlights a shift towards smaller family units in

Kerala, reflecting the broader trend of nuclear family formation (Pillai *et al.*, 2022) [27], whereas Karnataka's medium family size indicates a balance of labor and support. An examination of family types reveals that 76.66% of respondents in Kerala belong to nuclear families, while in Karnataka, 55% belong to joint families, suggesting a cultural inclination towards communal living in the latter state. Field insights suggest that nuclear families may be more adaptable and willing to embrace the entrepreneurial aspects of agritourism, while joint families might prioritize collective decision-making and resource sharing. Marital status also plays a crucial role, with more than three fourth of the respondents in Kerala and Karnataka being married, indicating that marital stability significantly impacts farmers' involvement in agritourism as a means to enhance household quality of life (Agustin and Cucio, 2023) [2].

The educational background of respondents reveals that none in Kerala are illiterate, with 28.33% holding a graduation degree. In contrast, 23.33% of respondents in Karnataka are graduates, highlighting high literacy rates in both states. This educational advantage enhances their capability to manage agritourism ventures effectively, reinforcing the importance of education in engaging with agritourism (Bannor *et al.*, 2022) [3]. Field observations suggest that educated farmers are better equipped to adopt innovative practices and marketing strategies, ultimately leading to successful agritourism initiatives (Yeboah *et al.*, 2017) [42]. Additionally, landholding patterns indicate that one third of the respondents in Kerala and 31.66% in Karnataka are classified as medium farmers, reflecting how land reforms and inheritance impact operational scales. This influences their capacity to engage in agritourism activities, with larger landholdings often allowing for more diverse agritourism offerings, such as lodging, guided tours, and farm-to-table experiences. Larger landholdings are often associated with greater landscape diversity and resilience (Abson *et al.*, 2013) [1], which may also provide opportunities for diversified activities such as agritourism.

Operational dynamics within agritourism are further elucidated through factors such as labor utilization, proximity to urban centers, and economic motivations. In Kerala, 46.66% of respondents occasionally utilize family labor, whereas 53.33% in Karnataka always do, indicating regional differences in labor reliance. Insights from study reveal that family involvement often enhances the authenticity of agritourism experiences, fostering deeper connections with visitors. Moreover, the majority of farms are situated within 11-20 km from urban centers, facilitating customer access and influencing agritourism engagement (Togaymurodov *et al.*, 2023) [38]. Economic motivations reflect a medium level across both states, with many respondents viewing agritourism as a means to promote agricultural awareness rather than solely a profit driven venture (Sreelekshmy, 2022) [34]. Risk bearing capacity reveals that 46.67% of respondents in Kerala exhibit a medium capacity, while 43.33% in Karnataka demonstrate a low capacity, indicating the necessity for improved risk management practices. Furthermore, managerial and communication abilities reflect regional disparities, with respondents in Kerala exhibiting a medium level of both, while those in Karnataka tend to show lower levels. This illustrates the ongoing need for skill development and

effective communication strategies to enhance agritourism ventures, reflecting the evolving landscape of this agricultural sector. Overall, integrating these field insights provides a nuanced understanding of the factors influencing agritourism participation and highlights areas for targeted interventions to bolster this emerging sector.

Comparison of the socioeconomic variables of both states by Mann-Whitney u test

Table 2 presents the results of the Mann-Whitney U test conducted to assess regional differences in selected socio-economic and agritourism related variables among respondents engaged in agritourism activities in Kerala and Karnataka. The analysis reveals statistically significant variations between the two states with respect to annual income, landholding size, primary occupation, association membership, economic motivation, managerial ability, and media exposure.

Specifically, agritourism respondents from Kerala reported significantly higher annual incomes (mean rank = 3.55) compared to their counterparts in Karnataka (mean rank = 3.00), with a U-value of 1343 ($p < 0.05$). This income differential may be attributed to Kerala's integration of high value tourism offerings such as backwater cruises, traditional Ayurvedic treatments (Yamuna, 2016) [41], and other culturally rich experiences that enhance the overall tourism appeal (Chaudhury *et al.*, 2023) [5]. Furthermore, respondents from Kerala also possessed marginally larger landholdings (mean rank = 3.90) than those in Karnataka (mean rank = 3.73), a difference that was statistically significant ($U = 866, p < 0.01$). Larger landholdings may facilitate the implementation of more diversified and integrated agritourism enterprises, thereby enabling a broader range of services and experiences for visitors and thereby income generation (Joo *et al.*, 2013) [15].

One of the most prominent differences was observed in the primary occupation of respondents ($U = 1175.5, p < 0.001$), with farmers in Kerala exhibiting a higher mean rank (6.01) than those in Karnataka (4.68). This suggests greater occupational diversification among agritourism participants in Kerala, likely reflecting a more integrated approach that combines agricultural activities with business and service-oriented components of agritourism. Membership in tourism associations also varied significantly between the two states ($U = 1200, p < 0.001$). Respondents from Kerala (mean rank = 0.61) were more likely to be members of such associations compared to their Karnataka counterparts (mean rank = 0.28), indicating the presence of stronger institutional support networks in Kerala. These networks potentially enhance collaboration, increase visibility, and provide promotional advantages for agritourism enterprises. Economic motivation was another area where Kerala respondents demonstrated significantly higher levels (mean rank = 30.73) than those from Karnataka (mean rank = 29.23), with a U-value of 1179.5 ($p < 0.01$). This difference may be attributed to the maturity and profitability of Kerala's tourism sector, which offers greater income generation opportunities and stronger financial incentives for agritourism participation. Managerial ability also showed significant regional variation ($U = 1137, p < 0.001$), with Kerala respondents (mean rank = 25.45) outperforming those in Karnataka (mean rank = 24.10). This disparity

could stem from Kerala’s higher literacy levels (Susuman *et al.*, 2016)^[37], broader access to capacity building initiatives, and more extensive exposure to entrepreneurial training in tourism management. Mass media exposure differed significantly as well ($U = 1282.5, p < 0.01$), with Kerala respondents (mean rank = 22.90) displaying greater media engagement than their Karnataka counterparts (mean rank = 20.46). This may reflect the more widespread use of digital and social media platforms in Kerala, which can effectively enhance the visibility and outreach of agritourism ventures. In contrast, several variables did not exhibit statistically significant differences between the two states. Although educational attainment was slightly higher among Kerala respondents (mean rank = 5.03) compared to Karnataka (mean rank = 4.16), the difference was not statistically significant ($U = 1389, p > 0.05$), indicating comparable educational levels among agritourism participants in both states. Similarly, risk bearing capacity showed no significant difference ($U = 1656.5$), with Kerala scoring marginally

higher (mean rank = 22.83) than Karnataka (mean rank = 21.56), suggesting a similar level of risk tolerance despite differences in regional market and climatic conditions. No significant variation was observed in social participation ($U = 2097$), with nearly identical mean ranks for Karnataka (20.31) and Kerala (20.05), indicating comparable levels of community involvement. Extension contacts also didn’t differ significantly between the two states ($U = 1587$), although Kerala respondents had a slightly higher mean rank (17.81) compared to Karnataka (17.15), suggesting broadly similar access to agricultural advisory services. Overall, the analysis highlights that while significant regional differences exist in key economic and managerial domains, largely favoring Kerala with fundamental factors such as education, risk bearing capacity, social participation and extension contact remain relatively consistent, providing a common foundation for the development of agritourism initiatives in both states.

Table 1: Distribution of agritourism farmers based on their socio-economic characteristics

Variables	Category	Kerala (n=60)		Karnataka (n=60)		Total (n=120)	
		f	%	f	%	f	%
Family labour utilization	Do not utilized	12	20.00	07	11.66	19	15.83
	Occasionally utilized	28	46.66	21	35.00	49	40.83
	Always utilized	20	33.33	32	53.33	52	43.33
Distance to farm	< 10 (km)	15	25.00	12	20.00	27	22.50
	11- 20	25	41.66	30	50.00	55	45.83
	21- 40	09	15.00	14	23.33	23	19.16
	41>	11	18.33	04	06.66	15	12.50
Membership of tourism association	Yes	37	61.66	13	28.33	54	45.00
	No	23	38.33	43	71.66	66	55.00
Annual income	Below 2 Lakh	0	0.0	07	11.66	7	05.83
	2 - 4 Lakh	13	21.66	14	23.33	27	22.50
	4 - 6 Lakh	14	23.33	19	31.66	33	27.50
	6 - 10 Lakh	20	33.33	12	20.00	32	26.66
	Above 10 Lakh	13	21.66	08	13.33	21	17.50
Social participation	Low (<Q1)	17	28.33	20	33.33	30	25.00
	Medium (Q1 - Q3)	28	46.67	26	43.33	67	55.83
	High (Q3>)	15	25.00	14	23.33	23	19.17
Extension contacts	Low (<Q1)	16	26.67	18	30.00	43	35.83
	Medium (Q1 - Q3)	19	31.67	31	51.67	52	43.33
	High (Q3>)	25	41.67	11	18.33	25	20.83
Mass media exposure	Low (<Q1)	16	26.67	19	31.67	40	33.33
	Medium (Q1 - Q3)	15	25.00	27	45.00	50	41.67
	High (Q3>)	29	48.33	14	23.33	30	25.00
Operation of agritourism (year)	<5	0	0.0	13	21.67	13	10.83
	6 to 10	09	15.00	21	35.00	30	25.00
	11 to 15	22	36.67	17	28.30	39	32.50
	16 to 20	14	23.33	04	06.67	18	15.00
	21>	15	25.00	05	08.33	20	16.67
Economic Motivation	Low (<Q1)	16	26.67	17	28.33	33	27.50
	Medium (Q1 - Q3)	27	45.00	28	46.67	67	55.83
	High (Q3>)	17	28.33	15	25.00	20	15.67
Risk bearing capacity	Low (<Q1)	15	25.00	26	43.33	53	44.17
	Medium (Q1 - Q3)	28	46.67	25	41.67	40	33.33
	High (Q3>)	17	28.33	09	15.00	27	22.50
Managerial ability	Low (<Q1)	16	26.67	31	51.67	41	34.17
	Medium (Q1 - Q3)	29	48.33	22	36.67	54	45.00
	High (Q3>)	15	25.00	07	11.67	25	20.83
Communication ability	Low (<Q1)	15	25.00	18	30.00	37	30.83
	Medium (Q1 - Q3)	30	50.00	28	46.67	57	47.50
	High (Q3>)	15	25.00	14	23.33	26	21.67

Table 2: Comparison of the socioeconomic variables of both states by Mann-Whitney u test

Sl. No	Variables	Mean values		Mann Whitney U test	P value
		Karnataka	Kerala		
1	Annual income	3.00	3.55	1343*	0.014
2	Educational status	4.16	5.03	1389	0.028
3	Landholding	3.73	3.90	866**	0.005
4	Main occupation	4.68	6.01	1175.5***	0.000
5	Member of tourism association	0.28	0.61	1200***	0.000
6	Economic motivation	29.23	30.73	1179.5**	0.001
7	Risk bearing capacity	21.56	22.83	1656.5	0.439
8	Managerial ability	24.10	25.45	1137***	0.000
9	Social participation	20.31	20.05	2097	0.116
10	Extension contacts	17.15	17.81	1587	0.259
11	Mass media exposure	20.46	22.90	1282.5**	0.006

***: significance at 0% level, **: significance at 1% level, *: significance at 5% level

Conclusion

The present study explored the socio-economic variables influencing agro-tourism in two south Indian states. The investigation reveals that agritourism in Kerala and Karnataka is predominantly led by middle-aged, married males from nuclear families, with most participants being third or fourth generation farmers holding graduate level education and medium sized landholdings. Kerala farmers tend to combine agriculture with business activities, while Karnataka farmers focus primarily on agriculture. Family labor utilization varies, with Kerala using it occasionally and Karnataka relying on it more consistently. Farms are typically located 11-20 km from main areas, and Kerala farmers show greater involvement in tourism associations, slightly higher annual incomes, and a stronger focus on risk-bearing capacity and managerial ability compared to their Karnataka counterparts. Both states exhibit medium levels of social participation, extension contacts, mass media exposure, and agritourism experience spanning 11-15 years. Economic motivation is moderate, with an emphasis on agricultural biodiversity and awareness rather than solely income generation. These findings emphasize that agritourism participation is shaped by key socioeconomic factors such as age, education, and family structure, with middle-aged, educated males from nuclear families being the predominant participants. They use agritourism to diversify income while preserving traditional farming practices. The Mann-Whitney U test results reveal significant regional variations in key economic and managerial domains, with Kerala showing a clear advantage. However, core factors such as education, risk-bearing capacity, social participation, and extension contact remain relatively uniform across both states, offering a shared base for the development of agritourism initiatives. To enhance agritourism in Kerala and Karnataka, targeted educational programs aimed at improving managerial and communication skills, partnerships with tourism associations to increase market access, and financial support initiatives are essential. Promoting inclusivity and resilience within agritourism can foster sustainable economic growth and rural development in both regions.

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