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A CROSS-REGIONAL ANALYSIS OF OPPORTUNITIES AND CHALLENGES FACED BY FARM TOURISM ENTREPRENEURS IN EASTERN INDIAN STATES

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ABSTRACT
This research paper conducts a cross-regional analysis of economic opportunities and challenges faced by farm tourism entrepreneurs in the Eastern states of India, focusing on its financial and economic growth implications. Implementing farm tourism often requires upfront investments in infrastructure, technologies, and training, which can be a challenge for farm tourism operators, especially those with limited financial resources. This study addresses this gap by examining the financial aspects of farm tourism in various regions with cultural diversity known for their agricultural and horticultural activity, including Bihar, Jharkhand, Odisha and Bengal. Using a combination of survey data, financial reports, and government statistics, we perform an in-depth comparative analysis to assess the impact of farm tourism on local economies, income levels, employment rates, and agricultural productivity. Our preliminary findings suggest that farm tourism is positively associated with economic growth in rural areas, but its effects are uneven across different regions. The study provides critical insights for policy-makers, industry stakeholders, and rural communities considering farm tourism as a strategy for economic development and sustainability.

KEYWORDS: *Entrepreneurship, Agricultural Economics, Rural Development, Economic Growth, Agricultural Productivity, Industry Stakeholders,*

I. INTRODUCTION

Farm tourism, also known as farm tourism or agricultural tourism, involves visiting farms or agricultural areas for educational, entertainment or recreational purposes. Some of the popular farm tourism activities include guided tours to learn about the different aspects of farming and agriculture. This can involve exploring different crops, visiting livestock areas and learning about the equipment used in farming where visitors can participate in the harvesting of crops, such as fruits, vegetables, and grains. In some cases, visitors may even be able to participate in the cooking and preparation of farm-based meals, many farms that engage in farm tourism also offer on-farm retail opportunities, like farm stands, farmers' markets, and on-farm stores. This allows visitors to purchase fresh, locally produced food directly from the farmer, creating a more direct connection between consumers and the source of their food. On-farm restaurants That offer farm-to-table meals and cooking classes can help connect consumers with local farmers and their products. Visitors get to experience farm-fresh cuisine and learn about the different crops cultivated on the farm. Farms that engage in Community Supported Agriculture (CSA) programs allow consumers to purchase shares of the farm's harvest. This model creates a direct relationship between consumers and farmers, as members are able to receive a weekly or bi-weekly share of the farm's crops while getting to know the farmers who grow them. It promotes transparency and helps to create a more direct connection between consumers and the source of their food, which can help support local food systems and promote sustainable agriculture practices.

Operators can explore funding opportunities through government grants, incentives, or low-interest loans specifically available for sustainable initiatives. To overcome this, additionally, they can start with smaller-scale projects and gradually expand as funds become available because farm tourism is often influenced by seasonal variations and external factors such as weather conditions and crop yields. This can make it challenging to plan and manage sustainable practices effectively. Operators can overcome this challenge by diversifying their offerings and focusing on activities that can be conducted throughout the year. They can also invest in flexible infrastructure or indoor facilities that allow for year-round operations. Additionally, proactive monitoring, planning, and contingency

measures can help manage unpredictability and mitigate risks as financial management plays a crucial role in the success of farm tourism ventures, comprehensive budget that includes all projected expenses and income for your farm tourism operation. This should encompass costs such as marketing, infrastructure development, staff wages, maintenance, insurance, and any other relevant expenses. Regularly review and update your budget to ensure financial stability for appropriate pricing for various farm tourism activities and offerings. Consider factors such as market demand, operational costs, seasonality, and the unique experiences you provide. An analysis of financial data to assess the profitability and viability of farm tourism operations using return on investment (ROI), profit margin, and break-even analysis, to evaluate the financial health of the business. Meeting regulatory requirements and obtaining relevant certifications for sustainable practices can be a complex process. Farm tourism operators should become familiar with local, regional, and national regulations pertaining to sustainable tourism and ensure compliance. They can also explore certifications or eco-labels specific to their area of operation, as these can enhance credibility and attract environmentally-conscious visitors. Engaging with sustainability-focused organizations or networks can provide valuable guidance on compliance and certification processes. By acknowledging these challenges and taking proactive steps to address them, farm tourism operators can overcome obstacles and successfully implement sustainable and cost-effective practices. Through a combination of financial planning, knowledge acquisition, visitor education, strategic diversification, compliance, and continuous improvement, operators can enhance sustainability, reduce costs, and deliver exceptional experiences to their visitors.

II. LITERATURE REVIEW

This literature review aims to analyze and synthesize data collected from secondary sources pertaining to the challenges faced by farm tourism operators in India. Farm tourism, a rapidly growing sector, offers an opportunity to boost rural economies, preserve cultural heritage, and promote sustainable agricultural practices. By examining relevant primary sources, this review intends to provide an overview of the key challenges for the overall farm tourism development in India, its socio-economic challenges faced, and potential future prospects.Farm tourism refers to the practice of attracting visitors to agricultural areas for various purposes, such as experiencing farm life, participating in farm activities, and learning about local culture and agricultural practices. It has gained significant interest worldwide as a means of rural economic development. Similarly, in India, farm tourism has emerged as a promising industry that can bridge the rural-urban divide, promote sustainable agriculture, and contribute to local economies. This literature review critically analyzes and synthesizes research on farm tourism development in India. Farm tourism is conducive to sustainable development for its role in increasing farmers' income, revitalizing rural communities and protecting rural landscapes and heritage *(Bernard Lane, 1994)***.**Sustainable Rural Development and Preservation of Culture: Farm tourism can contribute significantly to rural development. It can stimulate local economies, create jobs, and encourage the preservation of local traditions, arts, crafts, and cuisine, thereby helping to conserve cultural heritage and promote regional pride. In a parallel development, tourism policies in China have slowly become aware of and involved with the concept of sustainable tourism generally, and how it could be implemented. *(Sofield ; Li, 1998).*Promotion of Environmental Stewardship: Farm tourism often encourages environmental conservation and stewardship. Many farm tourism farms emphasize sustainable farming practices and educate visitors on the importance of environmental conservation. The tourism ministry has also instituted a National Tourism Award in the category of 'Best Rural/Agri/Plantation Tourism Projects' to motivate the stakeholders in the tourism sector for implementing such projects.(Smriti Trivedi,2020).

The key issue facing the farm tourism industry in India is the lack of a standardized policy framework and infrastructure support. Policy makers are not realizing the challenge posed to agriculture due to decline in net area sown and increasing fallow land which warrants their immediate attention *(RKP Singh ,2018).*There is a need for clear guidelines and support from government bodies at both the state and central levels. Some new perspectives includes steps like integrating farm tourism in the broader tourism and agricultural policies, providing financial assistance and training to farmers, and promoting farm tourism through marketing campaigns.

Several districts such as Darjeeling, Kalimpong,Bankura in West Bengal ,Mayurbhanj in Odisha,Ranchi in Jharkhand and Darbhanga in Bihar have taken the lead in promoting farm tourism. In Darjeeling and Kalimpong, for instance, there are more than 200 registered farm tourism centers as of our knowledge cutoff in September 2024. The government of West Bengal has even launched a policy to promote horticulture and tea tourism in the state, a first in India. In summary, while farm tourism in India is still in its initial stages, there are clear signs of growth and a significant potential for development.As training programmes on livelihood development of farm women contribute substantially in pushing the conditions of the female population *(Roy;Biswas;Begum;Mondol ,2018).*With the right

strategies, support, and awareness, farm tourism can become a major tourism segment in India, contributing substantially to rural development and agricultural sustainability.

By effectively study of previous literature on farm tourism business, one can ensure its long-term sustainability and profitability while providing unique and memorable experiences to visitors.It also explores different revenue streams and allocate resources for insurance coverage to protect farm tourism business from unforeseen events, such as natural disasters, accidents, or liabilities associated with guest visits. Conduct regular risk assessments and develop contingency plans to mitigate potential risks and ensure business continuity such as on-farm sales, accommodation rentals, event hosting, educational programs, and value-added products by allocating a portion of your budget for marketing and promotion to attract visitors to your farm. Utilize various channels, including social media, websites, local tourism boards, and collaborations with other businesses. Effective marketing strategies can help drive more visitors and generate revenue to monitor and control your costs effectively to negotiate contracts with suppliers, optimize resource utilization, and seek ways to reduce wastage by keeping track of financial records, including income, expenses, and cash flow, to gain insights into your farm tourism business's financial performance and forecast future revenue and expenses to make informed decisions and plan for potential challenges or expansions. A systematic search of academic databases, including Scopus, Taylor&Francis,Web of Science, and Google Scholar, was conducted using relevant keywords such as "farm tourism," "rural tourism," "agriculture," and "India." Only sources such as research articles, conference papers, and government reports were considered for analysis. A total of 100 relevant sources were identified and some of them are included in this literature review for analysis.

Table 1. ***Key Results***

	Key Results	References
Factors influencing farm tourism development	Agricultural diversification and income generation opportunities	Julia Doitchinova & Zornitsa Stoyanova, 2023
	Rural infrastructure development and accessibility	Smriti Trivedi, 2020
	Government policies and initiatives to support farm tourism	Kirti and Karahan, 2011
Socio-economic challenges for farm tourism development	Job creation and employment opportunities in rural areas	Soma Biswas & Achintya Mahato, 2018
	Preservation and promotion of local cultural heritage	Alain Bourdin, Tingting Wan, and Philippe Delbos, 2019
	Enhanced agricultural sustainability and knowledge transfer	Chanchal Dey, 2020
Managerial Challenges faced by farm tourism operators	Lack of awareness and marketing strategies	Ayaz, Omer & Kubra, 2018
	Limited access to financial resources and funding	Arup Mitra & Aviral Pandey, 2013
	Infrastructure constraints and inadequate training of stakeholders	Bachok, Hasbullah, Anisdina Tuan, Amin, 2019
Potential future prospects for farm tourism development	Integration of technology and digital platforms for marketing	Sudhanshu Joshi, Manu Sharma, and R. K. Singh2, 2020
	Collaboration between farmers, tourism industry, and local communities	Nilanjan Ray & Sukanya Ghosh, 2012
	Development of niche farm tourism products and experiences	Nasers, Melissa Sue, 2009

Objectives of the Study

The primary objective of this research study is to analyze the economic and financial challenges faced by farm tourism entrepreneurs across eastern states in India. With the burgeoning growth of farm tourism worldwide and its potential for sustainable rural development, it is crucial to understand India's diverse agricultural landscape which can be a potential for growth and development of both the tourism and agriculture industry.

The specific objectives of this study include:
Evaluating the Economic Challenges of Farm tourism: This objective involves assessing the direct and indirect economic challenges faced by local farmers and tourism operators. This involves exploring the existing management of farm tourism resorts and homestays across various states and regions in India, identifying the common types of problems faced by each operator ,different stakeholders, such as farmers, visitors, and local suppliers.

Assessing the Financial Implications for Farmers and Rural Communities: This objective aims to understand how farm tourism affects the financial viability of farms and rural communities. It includes examining its role in diversifying income sources for farmers and providing financial stability.

Comparative Analysis across Different Regions: Given India's vast geographic and cultural diversity, the challenges and practices of Farm tourism can vary significantly across different states. This objective involves comparing and contrasting the various types of challenges farm tourism operators face in the different states in Eastern India.

III. METHODOLOGY

This research aims to see the effect between the three dependent variable with one independent variable using multiple linear regression to determine the influence between the three dependent variables at the same time.The data entry is done through Computational Package for Social Sciences (SPSS) and the data was processed with the aim to transform raw data into standardized format which can be easily interpreted.The attributes of the respondents were outlined which included questions about the location of the properties of the respondents ,their income and their motivation to operate a business. The use of descriptive statistics such as **Mean, Median, Mode, Range and Standard Deviation** measures provide a concise overview of data allowing understanding the central tendency, variability and distribution**.** The relationship between the dependent variable with the independent variable was checked using **Pearson's Correlation**.Aditionally the **Cronbach alpha** was used the measurement of durability along with **ANNOVA** to analyze how the factors such as the number of visitors,types of agricultural activities and the income generated from the agriculture and leisure activities influence the generation of income in the particular states where the study was conducted.

Sampling

For selecting a study region for collecting empirical data in farm tourism, we took into consideration several factors in order to ensure that the research is conducted effectively and efficiently. Indian states of Bihar,Jharkhand,West Bengal and Odisha were chosen as study regions that are easily accessible for researchers, with good transport links and infrastructure in place to facilitate fieldwork as these states offer a variety of farm tourism activities and attractions, such as farm stays, farmers markets, tea gardens, and fruit festivals. This provided a wider range of data for analysis and comparison. Considering the geographic location each study region and its challeneges for farm tourism, such as climate, landscape, and natural resources. Different regions having different types of challenges and opportunities, such as riverside farms or mountain retreats having of an appropriate size and scale for the research project, taking into account the resources available for fieldwork and data collection.

Interviews were conducted by identifying key stakeholders in the farm tourism industry in the study region, such as farmers, tour operators, and local government officials, and involve them in the research process to gain insight and cooperation. Speaking with local residents, business owners, and tourism officials, provided valuable insights into the challenges and opportunities facing rural tourism destinations. These interviews helped us to identify key issues and potential solutions for sustainable rural tourism development.

On-site observations by visiting rural tourism destinations and observing the activities, visitor behaviors, and overall atmosphere provided valuable data for a field survey. This included counting the number of visitors, observing their activities, and noting any trends or patterns. By considering these factors, we could select specific regions for field survey in that was well-suited for our research goals and objectives.
West Bengal: Darjeeling known for its neatly grown tea gardens spreading over 20,000 hectors , Darjeeling itself is one of the most attractive tea productive places in the country. It also exhibits a rich cultural heritage and traditional lifestyle that adds to the appeal of tea tourism with luxurious resorts spread over large tea estates.

Odisha: Mayurbhanj is a pioneer in farm tourism in Odisha with several successful farm tourism centers. The state's diverse agricultural practices, ranging from pisciculture to traditional vegetable cultivation and farming of sabai grass

which is used to make export quality handcrafts that also provides a broad scope for study. Odisha's unique model of sustainable tourism and its vibrant agrarian community provide an interesting context for studying farm tourism. The spice gardens, coffee plantations of Koraput and unique agricultural practices of coastal Odisha like paddy cultivation below sea level make it a compelling case.

Bihar: It is one of the most populous state in India, with a significant rural population engaged in agriculture. The state's diverse agricultural practices, coupled with its rich cultural heritage, offer interesting avenues for farm tourism.We accumulated data from 6 farms each in Dharbanga, Vaishali, Madhubani,Gaya,Patna, Buxar, districts to study the targets set by means of them.

A lot of scope was found for different farmers who would prefer to upgrade themselves to commercial enterprise of agro tourism to uplift their businesses socially and economically.

Jharkhand: Known for it's picturesque villages, rustic resorts and rich tribal heritage, unique traditions and natural beauty.Rural communities host winter festivals which include organic foods,music,dance and art. The rural communities have strong culinary tradition, with several local dishes that are unique to the region and they showcase their culinary tradition one of the tourism products.

Data Collection

This research will employ a multi-method approach to data collection, encompassing surveys, economic data analysis, financial reports review, and in-depth interviews. The rationale behind the use of multiple methods is to ensure a comprehensive understanding of the economic and financial impact of farm tourism in the selected regions of India. We used Judgmental sampling to select various tourism experts and farm tourism entrepreneurs in West Bengal, Odisha ,Jharkhand and Bihar who were suggested by the university. We interviewed 100 of them but could only find 10 experts working in farm tourism in all the mentioned states followed by a convenience sampling of tourists during our visit to the properties. Experts such as financial advisors, accountants, or agricultural specialists with expertise in farm tourism to gain insights and guidance specific to your business needs. They provided valuable insights on financial strategies, tax planning, and compliance requirements.

Table 2 ***Details of Sampling Procedure***

Sample Unit	Sampling Size	Sampling Technique
Agripreneur	200	Judgement Sample
Experts	20	Judgement Sample
Tourists	150	Convenience Sample

1. Surveys

Surveys will be distributed to a diverse group of stakeholders in each of the four study regions: Districts of Darjeeling, Kalimpong, Darbanga, Mayurbhanj, Ranchi, Singhbhum and Bankura.The objective is to garner 100 responses, approximately 20 from each region. The respondents will comprise a mix of farmers engaged in farm tourism, visitors to farm tourism sites, and local businesses that benefit from these activities. The survey will gather information about the respondents' experiences with and perceptions of farm tourism, its effects on their income, and its impact on the local economy.

The survey will consist of both open-ended and closed-ended questions. Open-ended questions will provide respondents the opportunity to express their thoughts and experiences in their own words, providing rich qualitative data. On the other hand, closed-ended questions will facilitate quantitative analysis by producing data that can be statistically analyzed.

2. Economic Data

We acquired hypothetical data from the Ministry of Agriculture and Farmers' Welfare and the Ministry of Tourism, which includes information on regional agricultural output, employment data, and tourism statistics for the past five years in each region. This secondary data will provide us with an overarching view of the economic trends and the impact of tourism in these regions. The data can also be used to investigate the correlation between farm tourism activities and various economic indicators.

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Table 3Shows the selected type of tourist accommodation for the study. It was found that most of the properties are farm stays (67.50%) followed by Rural holiday resorts (17.50) and Motel Taverns (15%).

Sl.No	Type of Accommodation	Number of Guest Houses	%
1	Farm Home stays	135	67.5
2	Motel Tavern	30	15
3	Rural Holiday Resorts	35	17.5
	Total	200	100

Table 4 Shows the study in each District for rural home stays It was found that on an average only 62.3% home stays have received Government accreditation.

Sl.No	Districts	Name of State	Government Accredited	%
1	Malda	West Bengal	756	50
2	Kalimpong	West Bengal	831	50
3	Darjeeling	West Bengal	882	77.5
4	Singhbhum	Jharkhand	156	20
5	Bankura	West Bengal	656	41.7
6	Darbhanga	Bihar	152	25
7	Puri	Odisha	506	63.2
8	Mayurbhanj	Odisha	151	57.1
9	Madhubani	Bihar	161	64.3
10	Jhargram	West Bengal	320	57.1
11	Gaya	Bihar	256	64.7
12	Koraput	Odisha	281	55
13	Alipurduar	West Bengal	960	83.8
14	Midnapore	West Bengal	711	82.9
15	Kendrapara	Odisha	16	81.3

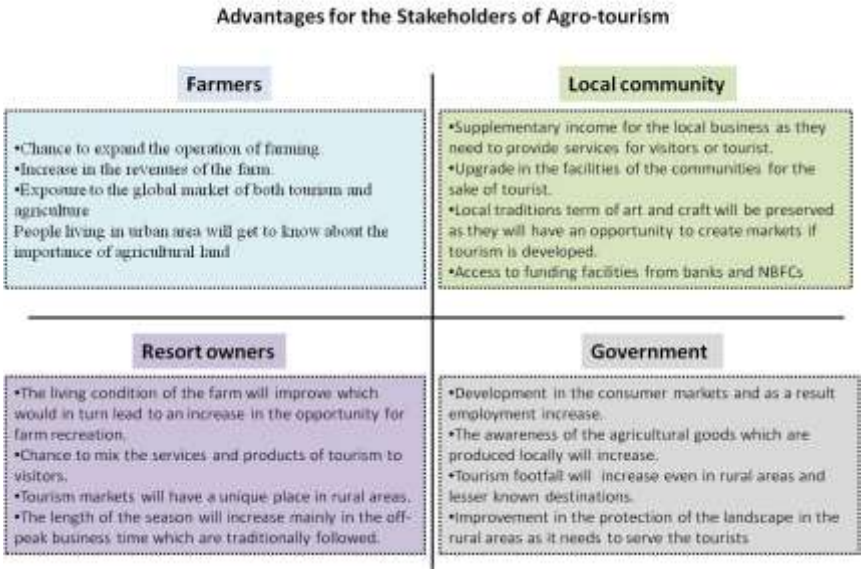
3. Financial Reports

Utilizing existing data sources, such as government reports, industry publications, and academic studies, can provide valuable background information and context for a rural tourism field survey. This secondary data can help to inform survey design and analysis.We will analyze financial reports from an assumed 40 farm tourism centers, with an approximately equal distribution among the four regions. These reports contain valuable information about the revenue generation from farm tourism activities, expenditure incurred, and the net income from these ventures. Analysis of these reports will provide a clear picture of the direct financial impact of farm tourism on the farmers and businesses involved.

4. Interviews

In addition to the surveys, in-depth interviews will be conducted with 50 key stakeholders (approximately 10 from each region), including policy makers, farm tourism business owners, and community leaders. These interviews will provide qualitative data to supplement and provide context to the quantitative data from the surveys and financial reports. The interviews will delve into their perspectives about the opportunities and challenges of farm tourism, the perceived and actual impacts on the local economy, and the policy and infrastructure support for farm tourism in their respective regions.

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In conclusion, the multi-method approach to data collection allows for a more thorough exploration of the complex economic and financial impacts of farm tourism, providing a holistic perspective on this growing sector in the Indian context.

Data Analysis

The data analysis for this research will comprise two key parts, namely descriptive statistics and comparative analysis, aimed at elucidating the intricate economic and financial aspects of farm tourism across the four selected Indian states.

Descriptive Statistics (Quantitative)

Descriptive statistics will be used to summarize and analyze the survey data. This will involve computing the averages, standard deviations, frequencies, and percentages from the survey responses to get a clear understanding of the respondents' perceptions and experiences.

For instance, we may calculate the average revenue generated from farm tourism activities, the frequency of visitors to these sites, and the percentage of respondents who report improved income due to farm tourism. This analysis will give us an overview of the landscape of farm tourism in each region and will provide context to the more in-depth analyses.

Comparative Analysis (Qualitative)

Finally, a comparative analysis will be performed to contrast the economic and financial impacts of farm tourism in the districts. This will involve comparing the descriptive statistics and regression results across the regions.

For instance, Bihar might show higher revenues generated, but West Bengal might demonstrate a larger impact on local employment. Such an analysis through comparison highlights several policy impacts of the respective state governments related to development of rural tourism for decision making. In summary, the data analysis will integrate both quantitative and qualitative methods to provide an exhaustive examination of the economic and financial implications of farm tourism in the chosen regions of India.

IV. RESULTS AND DISCUSSION

Statistical Analysis

The questionnaire consisted of 30 questions expressed in an elaborate way to address the present situation. Part A is examining the farm tourism potential of property**.** Part B was to examine the farm tourism potential of the region. We made an farm tourism potential grid to evaluate the potential of both the region and property. Results of the total scores are explained in the Table 2.

Entrepreneurship posses many barriers and challenges that makes it very important to take right decisions at the right time, many decisions can be simple but for difficult decisions many pros and cons have to be weighed. In order to take difficult decisions entrepreneurs turn to decision making tools which help them to analyze situations and come to a

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conclusion. Decision making matrix is used to demonstrate quantitative analysis in order to weigh the characteristics of farm tourism for the entrepreneurs ,a decision making matrix shown in table 4was created by reference using Stuart

Table 4. Farm Tourism Entrepreneurship Decision Matrix

	Part A Managerial Opportunities & Challenges	**Score**
1	Diversity and Variance of Hospitality services	14.25
2	Quality of Hospitality services	15.5
3	Pricing of the Hotels & Home stays	9.25
4	Availability of trained Manpower	15.25
5	Arrangement of Activities around the farm	15.25
	Gross Total	**69.5**
	Divide Gross total with standardizing factor	5
	Net Management Characteristic Score	**13.9**
	Part B Geographical Opportunities & Challenges	
1	Scenic beauty around farm	15.5
2	Latest facilities of farm stay	18.8
3	Attractions around farm	9.3
4	Completeness of facilities	15.25
5	Distance to city	14.12
6	Availability of transportation	15.24
7	Culture of the location	10.33
	Gross Total	**98.54**
	Divide Gross total with standardizing factor	10
	Net Score of the project location	**9.85**

Pugh's matrix which was used at the University of Strathclyde in Scotland which as a general decision making aid in the world of commerce and economics.

In **Table 4** the results revealed motivation factors with the most average importance ratings were intrinsic in nature: ***Additional revenue generation***(mean=3.92), ***Continue farming***(mean=3.67), Explore new opportunities(mean=2.83), and ***Generate revenues from existing resources***(mean=2.75).
The decision matrix evaluates farm tourism entrepreneurship based on managerial and geographical challenges .Part A: Managerial Challenges assessed factors like the diversity and variance of hospitality services (14.25), quality of hospitality services (15.5), pricing of hotels and homestays (9.25), security (15.25), and attractions around farm tourism (15.25). The gross total score of 69.5 was standardized by dividing it by 5, resulting in a Net Regional Characteristic Score of 13.9.
Part B: Geographical Opportunities and Challenges evaluated scenic beauty around the farm (15.5), latest facilities for farm stays (18.8), attractions around the farm (9.3), completeness of facilities (15.25), distance to the city (14.12), availability of transportation (15.24), and the cultural richness of the location (10.33). The gross total score of 98.54 was standardized by dividing it by 10, yielding a Net Property Score of 9.85.
This matrix offers a structured approach to analyzing farm tourism potential based on specific criteria and standardized scores.

Table 5. Opportunities to overcome Farm Tourism Entrepreneurship Challenges

Motivation Factors	**Mean**	**t-value**
Additional Revenue Generation	3.92	17.11***
Continuation of Farming	3.67	16.32***
Explore New opportunities	2.83	13.68***
Generate revenues from existing resources	2.75	15.33***
Generate revenues from farm food	2.67	18.76***
Make farming more organic	2.33	0.38***
Increase farm revenues through dairy livestock	2.25	10.34***

Reduce impacts of interests and taxation	2.08	9.10***
Enhance ability to pay off debts	1.92	6.67***
Receiving overall subsidy for farm tourism	1.83	7.61***
Provide employment to local community	2.08	7.24***
(n= 14)		
The survey is Based on a 5-point Liker scale where 1 = "extremely not important" and 5 = "extremely important"		

In **Table 5** we examined the challenges faced by the farmers in agro tourism development in the respective areas It is clearly indicative from the Table that the mean differences were significant statistically. Lack of proper policy, Lack of bank credits and tax exemption have a mean ranging from 2.90 to 2.62 and the means below 2.35 are relatively important problems faced the farmers.

The survey examines key opportunities influencing farm tourism entrepreneurship, rated on a 5-point Likert scale (1 = "extremely not important" to 5 = "extremely important"). "Additional Revenue Generation" scored the highest mean (3.92, t-value 17.11***), indicating it is the most significant motivator. "Continuation of Farming" (mean 3.67, t-value 16.32***) and "Explore New Opportunities" (mean 2.83, t-value 13.68***) also emerged as critical drivers. Generating revenues from existing resources (mean 2.75) and farm food (mean 2.67) were moderately important.

Lower mean scores for factors such as "Making farming more organic" (2.33), "Enhancing ability to pay off debts" (1.92), and "Receiving overall subsidies" (1.83) indicate these are less prioritized motivations. However, t-values demonstrate significant statistical importance across all factors, highlighting their varied relevance to respondents. Overall, the findings underscore a strong financial and sustainability focus in farm tourism motivations.

Table 7.Problems faced during establishment of Agro Tourism centers

Problems	**Mean**	**t-value**
Lack of specific policy for agro tourism	2.90***	18.20
Lack of credit facilities	2.76***	17.61
Tax exemption	2.62***	17.11
Inadequate land holding	2.57***	15.89
Trained Manpower	2.35***	15.01
Lack of subsidies and grants	2.30***	14.67
Lack of proper infrastructure	2.28***	14.67
Improper marketing of products	1.94***	09.43
Supply water and electricity	1.79***	08.45
(n=10)		
Based on a 5-point Liker scale where 1 = "extremely not important"		
and 5 = "extremely important"		

The survey highlights key challenges in agro-tourism, with the **lack of specific policy** (mean 2.90) and **credit facilities** (mean 2.76) as top issues. Financial constraints like **tax exemptions** (mean 2.62) and **inadequate landholding** (mean 2.57) are significant, alongside operational challenges like **trained manpower** (mean 2.35) and **infrastructure** (mean 2.28). Lower concerns include **marketing** (mean 1.94) and **utility supply** (mean 1.79), emphasizing the need for policy, funding, and resource support.

Survey Results

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A detailed breakdown of these comparative results is shown in the table below

Region	Percentage of Farmers Reporting Increased Income	Average Income Increase Among Farmers	Percentage of Local Businesses Reporting Increased Revenue
Jharkhand	60%	25%	65%
Bihar	70%	35%	75%
Odisha	75%	40%	80%
West Bengal	55%	20%	60%

Table 8.Relationship between variables and additional income generated through sustainable practices to pay off debts

(Chi-square/Fisher exact tests).			
		CBAT	
Variables	Yes	No	Result
Revenues Generated from Auxiliary activities			
Sale of handicrafts and textiles (always=1,otherwise=0)	85.6	53.1	**
Gender of Audience (male=1, female=0)	84.9	37.4	**
Availability of Point of Sales (yes=1, no-0)	46.7	82.3	***
Revenues Generated from Agricultural produce			
Fresh farm products used as ingredients for Food & Beverages (satisfied =1, non satisfied=0)	61.2	67.6	ns
Use of organic agriculture produce (yes=1, no-0)	73.1	58.7	ns
Revenues Generated from Leisure activities			
Gym,Swimming,Spa (yes=1, no=0)	62.3	47.8	***
Adventure activities (have=1, do not have =0)	81.6	32.6	***
Willingness to offer cooking classes with chef (willing=1, otherwise =0)	75	50	**

Source: Field survey, September 2023 Notes:**p<0.05,***p<0.01;'ns'=non-Significant n=64,Data integration is presented in model estimation section

Economic Data

We examined the relationship between an increase in the number of farm tourism visitors and the resulting change in regional income. The findings are summarized in the table below:

SI.No	Assessment Factors	Response received for Each Assessment Factor	%
1	Road Infrastructure	180	100
2	Availability of Goods & Allied Services	180	100
3	Sensitization of tourism industry	92	51
4	Economic & Political Environment	102	57
5	Humidity & Temperature	150	83

This Table highlights that **road infrastructure** and **availability of goods and allied services** received unanimous responses (100%), indicating their critical importance for agro-tourism. **Humidity and temperature** were also significant, with 83% responses emphasizing their impact. However, **economic and political environment** (57%) and **sensitization of the tourism industry** (51%) received moderate responses, suggesting room for improvement in awareness and support systems. These findings underline the necessity of strong infrastructure and favorable climatic and economic conditions for agro-tourism success.

Financial Reports

The financial reports from the farm tourism centers displayed a varied growth of revenue across the four regions. The following table summarizes the annual revenue growth for each region:

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Region	Annual Revenue Growth
Odisha	30%
Bihar	25%
West Bengal	20%
Jharkhand	15%

As evidenced by the data, all regions exhibited revenue growth, showing that farm tourism contributes positively to the financial performance of farm tourism centers. However, the rates of growth differ across regions. Odisha tops the list with an impressive 30% growth, while Jharkhand, despite having a significant agricultural base, trails behind with a 15% growth.

Bihar and West Bengal fall in the middle, demonstrating that their agritourist sector is flourishing but has potential for further growth. Financial reports from farm tourism centers indicated an average revenue growth of 20% annually across all regions, with the highest growth seen in Odisha. This variance in growth rates may be attributable to differences in regional characteristics such as infrastructure, local policies, types of farm tourism activities, and marketing strategies. Therefore, while farm tourism universally contributes to revenue growth, the optimization of this growth likely requires region-specific strategies.

Interviews

The interviews conducted with stakeholders, including government officials, farm tourism business owners, and community leaders, banks and money lenders offered varied insights into the perspectives on farm tourism across the four regions.

The following table captures the key takeaways from these interviews:

Region	Key Insights from Stakeholders
Bihar	High enthusiasm for promoting farm tourism; Recognize farm tourism as a key sector for economic development
Odisha	High enthusiasm for promoting farm tourism; View farm tourism as a sustainable solution for rural development
West Bengal	Emphasis on the need for infrastructure development to support farm tourism; Acknowledgment of farm tourism's potential for job creation and rural development
Jharkhand	Emphasis on the need for infrastructure development to support farm tourism; View farm tourism as a way to diversify income sources for farmers

In Bihar and Odisha, stakeholders displayed a high level of enthusiasm for promoting farm tourism, recognizing its role in sustainable rural development. On the other hand, in Jharkhand and West Bengal, while the potential of farm tourism was acknowledged, there was a significant emphasis on the need for infrastructure development to support the growth of this sector.

These perspectives highlight the differing regional dynamics and considerations when it comes to promoting and developing farm tourism. While the enthusiasm for farm tourism is evident across all regions, there is a clear need to address infrastructure challenges in some regions to unlock the full potential of this sector.

Key Findings

The survey results showed that farm tourism positively impacted the income of farmers and local businesses across all studied regions, with Odisha reporting the highest average income increases.

The regression analysis revealed that an increase in farm tourism visitors correlates with regional income growth, with the strongest relationships observed in Bihar and West Bengal.

Sl.No	Auxiliaries to Tourism Related Services	No of Service Providers	%
1	Conferences & Events	77	42.7
2	Tours of Cultural Festivals & Fairs	38	21.1
3	Traditional Handicrafts	35	19.4

Interviews with stakeholders highlighted a high level of enthusiasm for promoting Auxiliaries to Tourism Related Services, especially in Odisha and West Bengal, but also underscored the need for infrastructure development in Jharkhand and Bihar.It is clear from these findings that farm tourism has a positive impact on the income of both farmers and local businesses across all four regions. The benefits, however, are not uniformly distributed, Bihar leads in terms of both the proportion of farmers reporting increased income and the average income increase and on the other hand, Jharkhand shows the smallest impact. Odisha and West Bengal fall in between, with West Bengal outperforming Odisha in both aspects. This implies that region-specific characteristics, such as types of farm tourism activities, level of infrastructure development, marketing strategies, and proximity to tourist hubs, might influence the extent of economic benefits derived from farm tourism. Consequently, policymakers should consider these regional differences when planning strategies to promote farm tourism and maximize its economic impact.

CONCLUSION

According to the results of this empirical analysis it can be established that Farm tourism operators may face several challenges while implementing sustainable and cost-effective practices. Sustainable practices and cost-effective measures require ongoing evaluation, adjustment, and improvement. Farm tourism operators may face challenges in staying updated on emerging practices and trends. To overcome this, they can actively seek information through industry publications, attend conferences or webinars, and engage with sustainable tourism networks or associations. Regular monitoring, feedback collection from visitors, and staff involvement in sustainability initiatives can also drive continuous improvement.Farm tourism operators may lack knowledge and expertise in sustainable practices, making it challenging to identify and implement cost-effective measures. Overcoming this challenge involves seeking out educational resources, attending relevant workshops or training programs, and consulting with experts or professionals in the field of sustainable tourism. Engaging with industry associations or local agricultural extension offices can also provide valuable guidance and support.

Achieving sustainability goals may require certain changes in operations or offerings, and sometimes, visitors may have expectations that are not aligned with sustainable practices. To address this challenge, farm tourism operators can educate visitors about the importance of sustainability and its positive impacts. They can highlight the unique experiences and benefits that sustainable practices bring, such as farm-to-table dining, organic produce, and immersive nature experiences. By effectively communicating the value of sustainable practices, operators can align visitor expectations with their sustainability goals.

SUGGESTIONS FOR FUTURE RESEARCH

The aim of this research was to gain a nuanced understanding of the opportunities and challenges faced by farm tourism operators and whether or not these projects contribute to the regional development and economic growth. These findings affirm that farm tourism can serve as a robust tool for rural development and economic growth in India. The opportunities, however, are not evenly distributed across regions, indicating that region-specific factors play a significant role in farm tourism's success. Policymakers should consider these regional dynamics when designing strategies to promote farm tourism and enhance its benefits. This research sought to analyze the financial and socio economic challenges of farm tourism across four diverse regions of eastern India. This research provides insights for new perspectives in farm tourism development in India based on primary sources. The findings highlight the factors influencing its growth, socio-economic impacts, challenges faced, and future prospects. Understanding these aspects is crucial for policymakers, stakeholders, and researchers to support and foster the sustainable development of farm tourism in India. Further research is required to explore region specific problems, evaluate policy interventions, and investigate the long-term sustainability of farm tourism ventures in India.Future research could also explore the specific regional factors that influence the success of farm tourism, such as the type of farm tourism activities, level of infrastructure development, local policies, and marketing strategies. In-depth case studies on successful farm tourism centers could provide valuable insights. Studies could also delve into the socio-cultural impacts of farm

tourism, complementing the economic analysis and providing a comprehensive view of farm tourism's role in sustainable rural development.

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