

Agrotourism Business Innovation: By Modelling and Ranking Success Factors Using ISM-MICMAC Analysis

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The Indian tourism industry has witnessed substantial growth, presenting economic opportunities, especially in rural areas. Agrotourism has emerged as a promising strategy to diversify agriculture and enhance income. However, the sector encounters several challenges. This study aims to identify and analyze these barriers to support sustainable agrotourism development. Using a literature review and expert input, twenty key barriers were identified. The research applied Interpretive Structural Modeling (ISM) to understand the relationships among these barriers and MICMAC analysis to categorize them into clusters based on their influence and dependence. This integrated approach offers a comprehensive perspective on the critical success factors for agrotourism ventures. The analysis reveals that government policies and support are the most influential in determining agrotourism success. Other important factors include capital availability, location, season, and transport access. Meanwhile, event space, quality accommodation, varied activities, and market demand emerged as highly dependent factors. This research contributes unique insights by systematically addressing agrotourism barriers in India—an area previously underexplored. The findings can guide entrepreneurs, policymakers, and stakeholders in strategic planning. Emphasizing collaboration between government and local businesses, the study highlights the need for targeted efforts to foster innovation and growth in this emerging sector.

Keywords: Barrier interrelationships, Decision making, Hierarchical relationship, Structural modeling

Introduction

Agrotourism is an emerging trend in India that has gained popularity in recent years. It involves travel to rural areas to experience the agricultural way of life, and it provides a unique opportunity to witness the traditions and culture of rural communities.¹ India is known for its diverse agricultural practices and rich cultural heritage, making it an ideal destination for agrotourism. India is an agrarian economy, with over 50% of its population employed in the agricultural sector.² The country is known for its diverse agricultural practices, which vary from region to region. From the paddy fields of Kerala to the apple orchards of Himachal Pradesh, each state in India has a unique agricultural identity. Agrotourism in India allows tourists to explore and learn about these different agricultural practices.³ Agrotourism provides a win-win situation for both farmers and tourists. For farmers, it is an opportunity to diversify their income and promote their agricultural products. For tourists, it is an opportunity to experience rural life and learn about farming practices. This type of tourism can also

contribute to the economic development of rural areas and help to preserve traditional knowledge and culture.⁴

One of the main advantages of agrotourism in India is its potential to generate income for rural communities. Many farmers in India face financial difficulties due to the unpredictable nature of agriculture.⁵ Agrotourism provides an additional source of income that can help to stabilize their finances. Farmers can offer various activities to tourists, such as farm tours, crop harvesting, and cooking classes. By charging a fee for these activities, farmers can generate additional income while also promoting their agricultural products.⁶

Agrotourism can also help to promote sustainable agricultural practices in India.⁷ Sustainable agriculture is becoming increasingly important as the world faces challenges such as climate change and food insecurity. Many farmers in India have already adopted sustainable practices, such as organic farming and crop rotation. Agrotourism can help to promote these practices by showcasing them to tourists. This can encourage more farmers to adopt sustainable practices, which can have a positive impact on the environment and the economy.⁸

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However, agrotourism in India also faces several challenges. One of the main challenges is the lack of infrastructure in rural areas. Many rural areas in India lack basic amenities such as roads, electricity, and sanitation facilities.⁹ This can make it difficult for tourists to access these areas and can also make it challenging for farmers to provide adequate accommodation and facilities for tourists. Another challenge is the lack of awareness about agrotourism among farmers and tourists.¹⁰ Many farmers in India are not aware of the potential benefits of agrotourism, and they may not have the skills or resources to develop their agrotourism business. Similarly, many tourists may not be aware of agrotourism as an option and may not know how to find and access agrotourism experiences. To overcome these challenges, it is essential to promote and develop agrotourism in India. The government can play a vital role in promoting agrotourism by providing financial support and incentives to farmers and rural communities. This can include funding for infrastructure development, training programs for farmers, and marketing support to promote agrotourism experiences to tourists.¹¹ Private sector participation can also play a significant role in promoting agrotourism in India. Companies in the hospitality and tourism sectors can partner with farmers and rural communities to develop agrotourism experiences. This can include developing farm stays, offering culinary tours, and organizing cultural events that showcase rural traditions and practices.

Agrotourism is a type of industry that emphasizes on exposing visitors to traditional, cultural, way-of-life, and agricultural activities in order to learn about the agricultural practices of rural people. Additionally, agrotourism promotes agricultural enterprises as tourist destinations.¹² Creative tourism can emerge from agrotourism. The focus of agrotourism is on education and farming practices. Agrotourism offers visitors the opportunity to engage in activities that allow them to gain knowledge about agriculture and rural life, as well as local culture and traditions. By participating in these activities, tourists can learn about the use of available resources in generating income for families and communities, which can contribute to the conservation and sustainability of tourism. The primary focus of agrotourism is on education and the promotion of agricultural practices, which can serve as a source of creative tourism. The

different forms that agrotourism can take include natural scenery, technological activity, various agricultural products, and local culture. Agricultural festivals, horseback riding, and fruit and vegetable picking excursions are among the various agritourism activities that can be enjoyed both on and off the farm. In addition to these traditional activities, agrotourism can also encompass contemporary ideas and innovations that promote sustainability and environmental harmony. The forms that Agrotourism can take include natural scenery, technological activity, various agricultural products, and local culture.¹³ Activities both on and off the farm are what are meant by agro - tourism. Agri - tourism activities include agricultural festivals, horseback riding, and fruit and vegetable picking excursions.^{14,15} Agro - tourism has developed in a number of tourist destinations as a result of the concept's widespread use in various tourist attractions. In an ideal world, innovation and culture may coexist in harmony with the environment's natural features.¹⁶

For this study, agrotourism area was chosen for a variety of reasons. First, because to the expanding significance and diversity of rural tourism within this sector, the tourist industry has become one of the sectors with the quickest growth worldwide.¹⁷ Second, there are several obstacles that agrotourism must overcome, including steep price rises, unreliable rainfall, and issues with urbanization and conservation. Third, there are still numerous concerns with agrotourism, which is still in its early phases, such as unsuitable accommodations for visitors, subpar transportation to the destination, and disorganized management.¹⁸ Last but not least, agro-tourism creates jobs, supports regional economic growth by raising household standards of living and local companies' profits, and acts as a tool for poverty reduction, especially in developing countries.¹⁹ Hence, the sole objective is to develop and discuss the barriers to agro-business and their associated interlinking. To achieve the objective, the relationships among the identified factors using Interpretive Structural Modeling (ISM) is to be established and these factors are to be classified/ranked depending upon their driving and dependence power.

ISM is a well-known process for determining links between particular elements that describe a problem or an issue.^{20,21} Several ISM applications are documented in the literature.²²⁻²⁵

Table 1 — Identification of factors

S N	Factors	Ref ²⁶	Ref ²⁷	Ref ²⁸	Ref ²⁹	Ref ³⁰	Through discussion
1	Resource Management				✓	✓	
2	Comfortable accommodation	✓					
3	Dedicated Space for small/big events	✓					
4	Demand fluctuation	✓					
5	Diverse daytime activities	✓			✓		
6	Trained staff availability						✓
7	Security/Safety		✓		✓		
8	Networking facilities						✓
9	Overall hospitality		✓		✓		
10	Site location		✓		✓		
11	Reachability/Transportation		✓				
12	Facilities for differently abled people						✓
13	Charges per head						✓
14	Season						✓
15	Overall ambiance						✓
16	Market competition					✓	
17	Proximity to hospital				✓	✓	
18	Government policies and support			✓	✓	✓	
19	Available capital					✓	
20	Maintenance						✓

Research Gaps

This research works on fulfilling the following research gaps:

1. Identification of factors responsible for growth of emerging agro-tourism business
2. Application of ISM along with MICMAC analysis to develop the model showing interconnections between the factors along with its priority.

Factor identification

Based on research of the literature and conversations with owners and specialists in agrotourism, the numerous essential contributing success factors (CSFs) to increase overall customer satisfaction were discovered. Twenty pertinent CSFs from the conversation were taken into account in this study. Nine experts expressed interest in the desired conversation, however over 21 agro-tourism practitioners were approached within India. Due to their hectic schedules, many practitioners chose not to participate. Table 1 includes references as well as the final list of 20 pertinent CSFs.

Materials and Methods

The methodology involves a series of steps, including identifying the relevant factors, determining their contextual relationships, and constructing a hierarchy of the factors based on their levels of

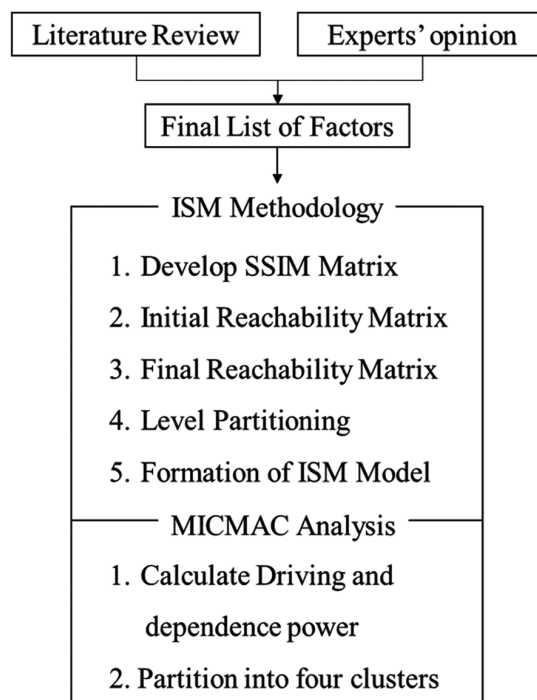


Fig. 1 — Research flow diagram

dependence and independence. The various steps involved is given in Fig. 1.

Step 1: Develop Structural Self-Interaction Matrix (SSIM)

It is a square matrix that represents the contextual relationships between a set of variables or factors.

factors that are necessary for achieving a desired outcome.

Step 3: Develop Final Reachability Matrix

The final reachability matrix is derived from the initial reachability matrix by removing transitive links, which are links between factors that are not direct, but are instead mediated through other factors. To remove transitive links, the reachability matrix is subjected to a process called "pairwise comparison," in which each pair of factors is examined to determine whether there is a direct link between them or whether the link is mediated through one or more other factors. If there is an indirect link between two factors, the transitive link between them is removed from the matrix. If the link is mediated through other factors, the matrix is examined to see whether the intervening factors are also linked to each other. If they are, the transitive link is removed from the matrix. This process is repeated until all transitive links have been removed and a final reachability matrix is obtained that represents all the direct plus indirect links between the factors in the system.

Step 4: Level Partitioning

Level partitioning is a step to group factors into different levels based on their level of dependence and independence. It is used to develop a hierarchical model of the factors in the system, which can be used to identify the critical factors and their interdependencies. The level partitioning process begins with the final reachability matrix, which contains the direct plus indirect relationships between the factors in the system. The matrix is analyzed to identify the most independent factors, which are assigned to the highest level in the hierarchy. The factors that are dependent on the factors at the highest level are then assigned to the next level down, and the process continues until all factors have been assigned to a level. The resulting hierarchical model shows the interdependencies between the factors and the levels of dependence and independence.

Level partitioning helps to simplify the analysis of complex systems by breaking them down into manageable components. It allows practitioners to focus their attention on the most critical factors in the system, and to develop action plans and decision-making strategies that address the underlying causes of problems. In addition, level partitioning can be used to develop a set of prioritized actions to address the critical factors in the system, based on their level of importance and the degree of influence they have

on other factors in the system. This can help practitioners to allocate resources and efforts more effectively and efficiently, in order to achieve the desired outcomes.

After generating the final reachability matrix, it is possible to divide it into multiple levels. By utilizing the matrix, it is possible to determine the reachability and antecedent sets for each success criterion. The reachability set for a particular factor comprises the factor itself and any other factors that contribute to achieving it, while the antecedent set comprises the factor itself and any other factors that aid in its attainment. The intersection set of the reachability and antecedent sets is then computed for all factors. Those factors that possess the same intersection and reachability sets are classified as level I and positioned at the top level in the ISM hierarchy. The factors used in level I are then removed for the second iteration. It is continued till all the factors are categorized in some levels.

Step 5: Formation of ISM

The ISM methodology involves generating a structural model of critical success factors by using level partitioning tables. This process includes removing transitivity from the reachability matrix as described in the ISM methodology. After removing the transitivity, the Interpretive Structural Model (ISM) can be prepared. The ISM represents the contextual relationships between different factors in a hierarchical form. It illustrates how different factors relate to each other, and how they can be categorized into different levels based on their relative importance and influence.

MICMAC analysis

The driving power and dependence of the chosen elements are determined and examined using the MICMAC (Matriced' Impacts Croisés Multiplication Appliquée à un Classement) study. According to the MICMAC principle, which is based on the multiplication properties of matrices, any modification to element A can have an impact on element C if element B and element C are both directly influenced by element A. The driving and dependent power of a few key success factors are examined in this study using the MICMAC method in the context of agrotourism company improvement. Each of these crucial success variables has its driving power and dependence determined, which leads to the construction of the driver power-dependence diagram.

Results and Discussion

In recent years, agrotourism has emerged as a popular and sustainable form of tourism that has been gaining momentum worldwide. Agrotourism, also known as agritourism, refers to the practice of visiting farms, ranches, and other agricultural sites for recreational and educational purposes. Agrotourism provides an opportunity for travelers to experience and learn about local agricultural practices, rural culture, and traditional food systems. It offers a unique and authentic travel experience that is increasingly sought after by travelers who are looking for sustainable and immersive travel options. One of the main benefits of agrotourism is that it supports local agriculture and rural communities. By providing an additional source of income to farmers, agrotourism can help to promote sustainable farming practices and preserve local cultures and traditions. In addition, agrotourism can help to promote environmental sustainability by encouraging visitors to appreciate and support local ecosystems. It can also provide an alternative to mass tourism, which often leads to overcrowding, environmental degradation, and cultural erosion. Agricultural sector has drawn researchers' attention due to innovation and new technologies are coming up every year. The full support of government is required extending agro-tourism business.

In this research, the authors aimed to explore the Critical Success Factors (CSFs) that impact the

success of agro-tourism businesses using an Interpretive Structural Modeling (ISM) approach followed by MICMAC analysis. CSFs refer to the factors that must be in place to have a significant impact on the success of an organization or endeavor.³¹ In order to minimize misunderstandings and practical difficulties the number of CSFs should be limited. Thus, the authors identified twenty CSFs that are crucial for effective and efficient agro-tourism businesses.

In ISM, influence is measured in binary form i.e. in 0 and 1 only. There is no value in between indicating medium or weak influence. The experts were asked to map the relationship of influence between all the factors considering two factors at one time. The relationship was mapped using V, A, X and O letters indicating i^{th} factor influencing j^{th} factor, j^{th} factor influencing i^{th} factor, both factors trying to influence each other, and no relation between the factors. Table 2 shows the structural self-interaction matrix (SSIM) formed by considering maximum number of experts giving the same judgment. The data in the Table 3 represents initial reachability matrix (IRM) which was formed by utilizing the rules mentioned Step 2 and Step 3 of ISM methodology section. The row-wise summation of values provided in Table 3 indicates driving power of that factor. The column-wise summation of values indicates the dependence of that factor on the other factors.

Table 3 — Initial reachability matrix

S N	Factors/problems	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Resource management	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2	Comfortable accommodation	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Dedicated space for small/big events	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Demand fluctuation	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Diverse daytime activities	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
6	Trained staff availability	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1
7	Security/Safety	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
8	Networking facilities	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
9	Overall hospitality	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0
10	Site location	0	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	0	0	1
11	Reachability/Transportation	0	0	0	1	1	0	1	0	1	0	1	1	1	0	0	1	1	0	0	0
12	Facilities for specially abled people	0	1	0	1	1	0	1	0	1	0	0	1	1	0	0	1	0	0	0	0
13	Charges per head	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
14	Season	0	1	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1
15	Overall ambiance	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
16	Market competition	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
17	Proximity to hospital	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
18	Government policies and support	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	1	0	1	0	0
19	Available capital	0	0	1	0	1	1	1	1	0	1	1	1	0	1	1	1	0	0	1	1
20	Maintenance	0	1	0	0	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	1

Considering the rules for removing transitivity, the final reachability matrix was formed as shown in Table 4. The colored cells indicate the removal of transitive links. The driving and dependence power for each factor is calculated in similar way explained earlier. The factors such ‘Government policies and support’, ‘Available Capital’, ‘Site Location’, and ‘Reachability/Transportation’ have considerably more driving power than the other factors. The factor with least driving power is ‘Dedicated Space for small/big events’. The factors such as ‘Resource Management’, ‘Comfortable accommodation’, ‘Dedicated Space for small/big events’, ‘Demand fluctuation’, ‘Diverse daytime activities’ etc are some of the factors having higher dependence on the system as a whole.

The Table 5 represents level partitioning consisting of reachability set and antecedent and associated levels. To obtain the reachability set for factor 1, the corresponding row is searched for the value of ‘1’ in Table 4. To obtain the antecedent set for factor 1, the corresponding column is searched for the value of ‘1’ in Table 4. Reachability set /antecedent set consists of all such factors where it appears ‘1’. The intersection set is then evaluated by considering common elements of reachability set and antecedent set. Initially factor 3 showed the common reachability set and intersection

set and hence is associated to Level I. Then factor number 3 is cancelled out and again same process is repeated to get all the levels. The factors got classified on eight levels. Level I consist of ‘Dedicated space for small/big events’. Level II consists of comfortable accommodation, Demand fluctuation, diverse daytime activities, security/safety, overall hospitality, and per head charges. Level III consists of networking facilities, and market competition. Level IV have resource management, trained staff, overall ambiance, and maintenance efforts as classified factors. Level V has facilities for differently abled persons, season, and proximity to hospitals as factors. Level VI contains reachability/transportation facilities available. Level VII and Level VIII consists of site location, available capital and government policies.

As per the observations made in Fig. 2, it is evident that ‘Government policies and support’ forms the foundation of the ISM hierarchy. The success of other critical factors in the hierarchy depends on the implementation and support of these policies by the government. Additionally, ‘Dedicated space for events’, ‘Comfortable accommodation’, and ‘Number of daytime activities’ are critical success factors that depend on other factors in the hierarchy. These factors are interlinked and rely on the successful implementation

Table 4 — Final reachability matrix removing third order transitivity

S N	Factors/problems	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Dr. P
1	Resource management	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
2	Comfortable accommodation	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
3	Dedicated Space for small/big events	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4	Demand fluctuation	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
5	Diverse daytime activities	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
6	Trained staff availability	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
7	Security/Safety	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
8	Networking facilities	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
9	Overall hospitality	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
10	Site location	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	17
11	Reachability/Transportation	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	0	1	16
12	Facilities for specially abled people	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	0	0	0	1	14
13	Charges per head	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
14	Season	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0	0	0	1	14
15	Overall ambiance	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
16	Market competition	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
17	Proximity to hospital	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	1	0	0	1	14
18	Government policies and support	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	18
19	Available capital	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	17
20	Maintenance	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	13
	Dependence Power (Dp. P)	19	19	20	19	19	19	19	19	19	2	4	5	19	1	19	19	5	1	1	19	

Table 5 — All Iterations of ISM model

Factor	Reachability set	Antecedent set	Intersection set	Level
1	1,2,3,4,5,6,7,8,9,13,15,16,20	1,2,4,5,6,7,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,9,13,15,16,20	IV
2	1,2,3,4,5,6,7,9,13,16	1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,9,13,16	II
3	3	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	3	I
4	1,2,3,4,5,6,7,8,9,13,15,16,20	1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,8,9,13,15,16,20	II
5	1,2,3,4,5,6,7,9,13,20	1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,9,13,20	II
6	1,2,3,4,5,6,7,8,9,13,15,16,20	1,2,4,5,6,7,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,9,13,15,16,20	IV
7	1,2,3,4,5,6,7,9,13,16	1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,9,13,16	II
8	2,3,4,5,7,8,9,13,16	1,4,6,8,10,11,12,13,14,15,16,17,18,19,20	2,4,8,13,16	III
9	1,2,3,4,5,6,7,9,13,16,20	1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,9,13,16,20	II
10	1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,20	10,18	10	VII
11	1,2,3,4,5,6,7,8,9,11,12,13,15,16,17,20	10,11,18,19	11	VI
12	1,2,3,4,5,6,7,8,9,12,13,15,16,20	10,11,12,18,19	12	V
13	1,2,3,4,5,6,7,8,9,13,15,16,20	1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,5,6,7,8,9,13,15,16,20	II
14	1,2,3,4,5,6,7,8,9,13,14,15,16,20	14	14	V
15	1,2,3,4,5,6,7,8,9,13,15,16,20	1,4,6,10,11,12,13,14,15,16,17,18,19,20	1,4,6,13,15,16,20	IV
16	1,2,3,4,5,6,7,8,9,13,15,16,20	1,2,4,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	1,2,4,6,7,8,9,13,15,16,20	III
17	1,2,3,4,5,6,7,8,9,13,15,16,17,20	10,11,17,18,19	17	V
18	1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18,20	18	18	VIII
19	1,2,3,4,5,6,7,8,9,11,12,13,15,16,17,19,20	19	19	VII
20	1,2,3,4,5,6,7,8,9,13,15,16,20	1,4,5,6,9,10,11,12,13,14,15,16,17,18,19,20	1,4,5,6,9,13,15,16,20	IV

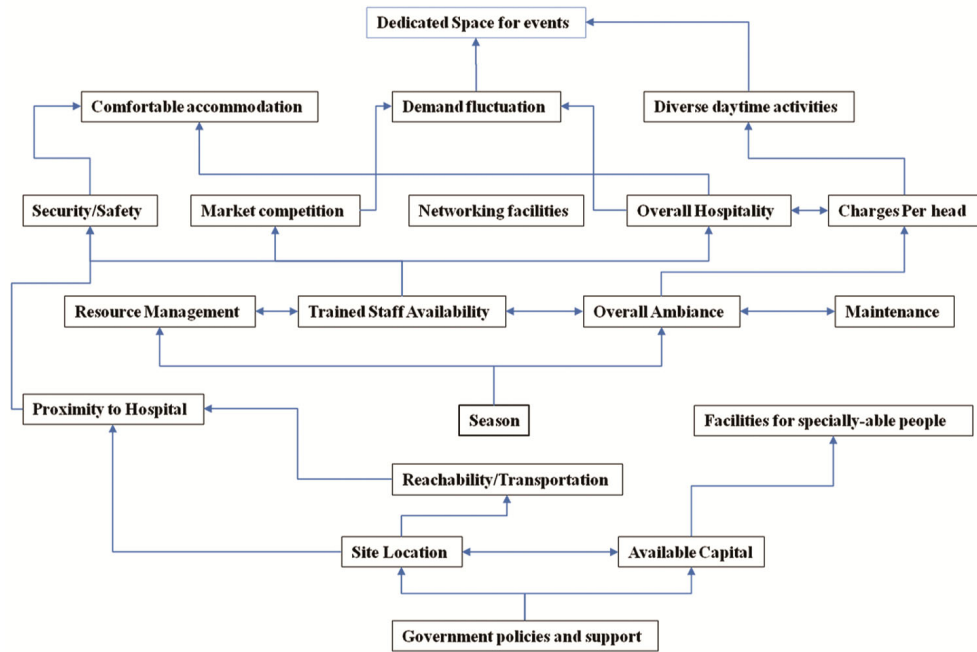


Fig. 2 — ISM Framework/Model

of other factors to ensure their effectiveness. Hence, it is crucial to prioritize and address the government policies and support factor to ensure the successful implementation of other critical success factors in the hierarchy. By doing so, it will help to create a strong foundation for the project, leading to effective implementation and overall success In Fig. 2, the developed ISM model is shown. The arrows indicate the direction improvement flow. The level I factors are

the highly dependent factors. On the other hand, the base level factors are the driving factors for the improvement. If the government support is received then good site location and available capital may be improved. If better site location is obtained then reachability/transportation means, proximity to hospitals can be developed. If capital/ funding is received then facilities for differently abled people can be created. The arrows are indicating the influence in

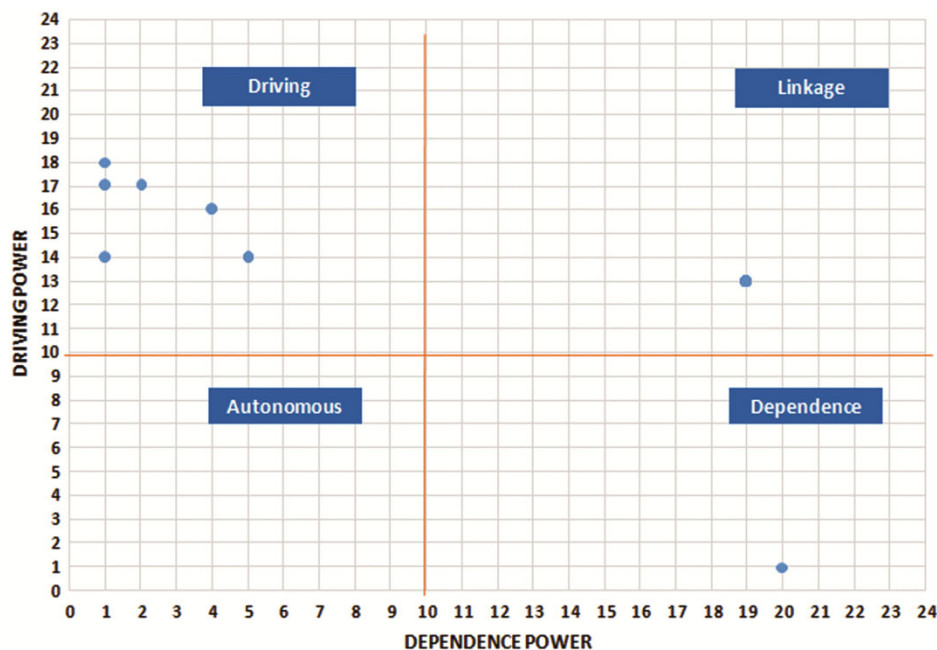


Fig. 3 — MICMAC analysis (Driving and Dependence diagram)

same fashion. Again, the direction of influence of ‘season’ is towards ambiance and resource management. If season is not good, then to create good ambiance electricity will be required for running air conditioners etc. hence charges per head may increase, which may also affect day time activities.

MICMAC analysis is a graph (Fig. 3) between driving and dependence power of the factors in consideration. One the graph is plotted; it is divided into 4 parts. A line is drawn from (Number of factors/2) (i.e. 20/2 = 10) on X and Y axis. The results reveal four clusters of critical success factors: autonomous factors, dependent factors, linking factors, and driving factors. Autonomous factors have poor driving and reliance power and are not closely tied to the system, while dependent factors have poor driving power and substantial dependence. Linking factors have significant influencing power and strong dependence, while driving factors are independent and have significant driving power.

The analysis presented in Fig. 3 and Table 6 indicates that factors in Cluster I, or the Autonomous factors, do not require individual attention, as they are self-contained and do not significantly impact the success of the project. However, Cluster II, or the Dependent factors, includes critical success factors such as Dedicated Space for small/big events (3), which have a weak driving power and high dependence on other factors. These factors are crucial

Table 6 — Factor classification into clusters

Cluster No	Clusters	Factors
I	Autonomous	—
II	Dependence	3
III	Linkage	1,2,4,5,6,7,8,9,13,15,16,20
IV	Driving	10,11,12,14,17,18,19

to achieving the desired outcome and are considered outcome-type factors, directly affecting the project's success. Therefore, it is vital to identify, prioritize, and address these factors to ensure the project's smooth execution and success.

Cluster III, or the Linkage factors, comprises factor numbers 1, 2, 4, 5, 6, 7, 8, 9, 13, 15, 16, and 20, and includes critical success factors that are unstable in nature, and their stability needs to be addressed to ensure the project's success. Moreover, Cluster IV, or the Driving factors, includes critical success factors such as Site Location, Reachability/Transportation, Facilities for differently abled people, Season, Proximity to Hospital, Government policies and support, and Available Capital, which have a strong driving power and form the base level of the ISM hierarchy. These factors play a crucial role in achieving a positive outcome and should be prioritized for successful implementation. Therefore, policymakers and agro-tourism business owners/practitioners should focus on prioritizing and successfully implementing these critical success factors to bring significant

Table 7 — Ranking as per MICMAC analysis

Factor	Factors/problems	Dependence power (I)	Driving Power (II)	II/ I	MICMAC Rank
1	Resource management	19	13	0.68	7
2	Comfortable accommodation	19	13	0.68	7
3	Dedicated space for small/big events	20	1	0.05	8
4	Demand fluctuation	19	13	0.68	7
5	Diverse daytime activities	19	13	0.68	7
6	Trained staff availability	19	13	0.68	7
7	Security/Safety	19	13	0.68	7
8	Networking facilities	19	13	0.68	7
9	Overall hospitality	19	13	0.68	7
10	Site location	2	17	8.50	4
11	Reachability/Transportation	4	16	4.00	5
12	Facilities for specially abled people	5	14	2.80	6
13	Charges per head	19	13	0.68	7
14	Season	1	14	14.00	3
15	Overall ambiance	19	13	0.68	7
16	Market competition	19	13	0.68	7
17	Proximity to hospital	5	14	2.80	6
18	Government policies and support	1	18	18.00	1
19	Available capital	1	17	17.00	2
20	Maintenance	19	13	0.68	7

improvements to the existing system. The data in Table 7 ranks these twenty factors based on a formula that divides driving power by dependence power, with Government policies and support achieving the highest rank/priority with a driving power/dependence power ratio of eighteen. By prioritizing and addressing these critical success factors, the project can operate effectively and successfully achieve its desired outcome.

Overall, this study provides insights into the complex interrelationships and interdependence among critical success factors in agro-tourism businesses. The identified factors can assist business owners and policymakers in developing effective strategies to enhance the success of agro-tourism ventures.

Managerial Implications

This study offers a structured roadmap for agrotourism managers to prioritize and implement critical success factors that significantly impact business performance. With government policies and support emerging as the strongest driver, managers should advocate for policy engagement and leverage public schemes. Strategic investments in site location, transportation, and accessibility are vital to enable foundational development. Dependent factors like accommodation, event space, and activity diversity must be built upon these base drivers. The ISM-MICMAC framework provides a decision-making tool to allocate resources efficiently, minimize risk,

and foster collaboration among stakeholders for long-term, sustainable growth in agrotourism ventures.

Conclusions

This study identified and modeled twenty CSFs essential for agrotourism development through expert consultations and literature review. Using ISM, the research revealed how these factors interact, with government policies and support emerging as the most influential drivers. Top-level dependent factors included dedicated event spaces, comfortable accommodations, demand flexibility, and diverse activities—representing key business goals. The findings highlight the need to strengthen foundational CSFs to achieve these goals and promote sustainable growth. While the ISM approach offers valuable insights for decision-makers, it is based on expert opinion and does not quantify factor impact. This study focused on a limited set of CSFs to maintain ISM model clarity, excluding other possible variables. The subjective nature of expert input is a constraint. Future research can incorporate empirical data, use matrix-based methods or graph theory to quantify impacts, and apply Structural Equation Modeling (SEM) for statistical validation.

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