TOURISM POLICY AND INFRASTRUCTURE DEVELOPMENT IN TAMIL NADU – A MICRO LEVEL STUDY

[1]Dr.M.Senthilrajkumar, [2]Dr. R. Muthusubramanian
[1]Head of the Department, [2]Assistant Professor of Economics
[12]Department of Commerce
[12]Ambai Arts College, Ambasamudram – 627401 & Affiliated to Manonmaniam Sundaranar University, Tirunelveli

***Abstract*—Tourism has increasingly become an important component of regional development because it can generate employment, stimulate local entrepreneurship, diversify rural livelihoods and create demand for transport, accommodation, food services, handicrafts and other local activities. The developmental effects of tourism, however, depend heavily on the quality of destination infrastructure, accessibility, institutional coordination and the sustainability of resource use. This study examines tourism infrastructure and policy issues in selected destinations in the Western Ghats region of Ambasamudram Taluk, Tirunelveli District, Tamil Nadu. The study focuses on Manimuthar, Manjolai, Papanasam and Karaiyar and evaluates infrastructure through a Tourism Infrastructure Index (TII) based on the presence or absence of selected facilities and services. Secondary information and local reports form the principal empirical basis. The original assessment gives Papanasam the highest TII score (0.68), followed by Manimuthar (0.64), Karaiyar (0.44) and Manjolai (0.36). The findings indicate that the region possesses substantial natural, cultural and recreational assets but that infrastructure deficits, limited visitor services, weak destination-level information systems and environmental constraints restrict its tourism potential. The study argues that infrastructure expansion should not be equated with indiscriminate construction. Instead, destination planning should integrate accessibility, sanitation, accommodation, safety, digital information, carrying-capacity considerations, biodiversity conservation and meaningful community participation. The discussion is situated within destination competitiveness, sustainable tourism, community participation and tourism-area life-cycle perspectives, and is linked to the Tamil Nadu Tourism Policy 2023 and national strategies for sustainable, rural and ecotourism.**

***Index Terms*—Tourism infrastructure, Tamil Nadu Tourism Policy 2023, Ambasamudram, Western Ghats, Papanasam, Manimuthar, Manjolai, Karaiyar, ecotourism, destination competitiveness, sustainable tourism, Tourism Infrastructure Index**

I. Introduction

Tourism is a multidimensional economic and social activity involving travel, accommodation, transport, recreation, culture and a wide range of supporting services. Its regional-development significance arises from the fact that tourist expenditure can circulate through several local sectors rather than remaining confined to a single industry. Tourism planning therefore has implications not only for visitor satisfaction but also for employment, small enterprise development, infrastructure provision and the quality of life of host communities (Goeldner & Ritchie, 2012; Inskeep, 1991). Contemporary destination planning increasingly emphasizes sustainability, inclusiveness, resilience and the management of visitor pressure rather than the simple maximization of tourist numbers.

Destination competitiveness literature similarly treats tourism as a system in which attractions, accessibility, infrastructure, hospitality, supporting services, governance and the quality of the visitor experience interact. Crouch and Ritchie (1999) argue that tourism development has economic, sociocultural, political and environmental dimensions and can contribute to broader societal prosperity when appropriately managed. This systems perspective is particularly relevant to peripheral and rural destinations where natural attractions may be abundant but infrastructure and institutional capacity remain limited.

Tamil Nadu possesses an unusually diverse tourism resource base, including temples and heritage sites, beaches, forests, hill landscapes, wildlife areas, cultural traditions and pilgrimage centres. The Tamil Nadu Tourism Policy 2023 seeks to reposition tourism as a major economic sector, with destination development, improved visitor infrastructure, responsible tourism, community-led tourism, digital initiatives and private-sector participation among its major policy directions. The policy is valid for five years from notification unless replaced or extended, and its stated vision is to evolve Tamil Nadu into an attractive experiential destination in Asia (Department of Tourism, Government of Tamil Nadu, 2023).

The Western Ghats portion of Tirunelveli District is especially significant because it combines ecological resources, waterfalls, dams, forests, river systems, plantations, religious sites and scenic landscapes. The official district tourism portal identifies Papanasam/Agasthiyar Falls and Manimuthar Dam/Falls among the region's tourism attractions. Manimuthar Dam is located at the foothills of the Podhigai Hills and is connected by road to nearby settlements, while the Manimuthar waterfall is a major natural attraction (Tirunelveli District Administration, 2026a, 2026b). The Kalakad–Mundanthurai Tiger Reserve (KMTR), meanwhile, forms part of the southern Western Ghats and the Agasthyamalai Biosphere Reserve, making ecological sustainability central to tourism planning in the wider landscape (Tamil Nadu Forest Department, 2026).

II. Statement of the Problem

The central problem addressed by this study is the gap between tourism resource potential and destination-level infrastructure in the Western Ghats region of Ambasamudram Taluk. The presence of scenic landscapes, waterfalls, dams, forests, plantations and cultural resources does not automatically generate sustained tourism benefits. Visitors require reliable roads, information, sanitation, drinking water, accommodation, medical support, communication facilities, parking, safety arrangements and appropriate recreational services. At the same time, infrastructure in ecologically sensitive areas must be planned so that increased visitation does not undermine the natural assets on which tourism depends.

The study therefore asks: (i) what are the major tourism resources in the selected destinations? (ii) what is the existing structure of tourism infrastructure? (iii) how can infrastructure availability be comparatively measured? (iv) what are the principal causes of infrastructure deficits? and (v) what policy measures can improve tourism outcomes while protecting ecological and community interests?

III. Review of Literature and Conceptual Framework

Tourism infrastructure is a foundational component of destination development. Inskeep (1991) places attractions, transport, facilities, services, environmental management and institutional arrangements within an integrated tourism-planning framework. The implication for a micro-level destination is that infrastructure cannot be treated as a collection of isolated projects: roads, accommodation, sanitation, information, recreation and environmental management need to be planned as an interconnected system.

Crouch and Ritchie (1999) conceptualize destination competitiveness as a broad process involving economic, sociocultural, political and environmental considerations. Their framework supports the

argument that a destination's competitiveness cannot be assessed only through tourist arrivals. Quality of infrastructure, supporting resources, destination management and the capacity to convert natural and cultural assets into sustainable visitor experiences are equally important.

Kozak and Rimmington (1999) demonstrate the importance of benchmarking destination attributes and visitor perceptions when assessing competitive position. This supports the use of a structured index in the present study, although the current TII is intentionally simple because it is based on secondary/local reports rather than a large visitor survey.

Butler's (1980) Tourism Area Life Cycle model provides another useful perspective. Tourism destinations can move through stages of exploration, involvement, development, consolidation and possible stagnation or decline. The model is relevant to the study area because infrastructure development should anticipate future visitor pressure rather than merely respond to current demand. Poorly planned growth can reduce environmental quality and, consequently, destination attractiveness.

Community participation is equally important. Tosun (2000) identifies operational, structural and cultural constraints on community participation in tourism development in developing-country contexts. Scheyvens (1999) argues that ecotourism should be considered successful only when local communities have meaningful control and receive an equitable share of benefits. These arguments strengthen the case for community-led tourism, local guiding, homestays, handicraft markets, food enterprises and locally managed visitor services in the Ambasamudram region.

Recent Indian policy also moves in this direction. The Ministry of Tourism's National Strategy for Sustainable Tourism, National Strategy for Ecotourism and National Strategy and Roadmap for Rural Tourism provide policy frameworks emphasizing responsible destination development, community participation and sustainability. Swadesh Darshan 2.0 similarly adopts a holistic destination-development approach covering tourism and allied infrastructure, services, human capital, destination management and promotion (Ministry of Tourism, Government of India, 2022, 2026).

IV. Objectives of the Study

1. To identify the major tourism resources and destinations in the Western Ghats region of Ambasamudram Taluk.
2. To examine the availability of tourism infrastructure in selected destinations.
3. To construct and apply a Tourism Infrastructure Index (TII) for comparative assessment.
4. To identify major constraints affecting tourism infrastructure development.
5. To examine the relevance of Tamil Nadu Tourism Policy 2023 to micro-level destination development.
6. To suggest policy measures for sustainable, inclusive and community-oriented tourism development.

V. Methodology

The study is exploratory and descriptive in nature. It is based primarily on secondary information and local reports, consistent with the methodology stated in the original manuscript. The selected study area comprises the Western Ghats tourism belt associated with Ambasamudram Taluk, with specific attention to Karaiyar, Papanasam, Manimuthar and Manjolai. The destinations were selected purposively because of their combination of natural attractions, accessibility characteristics and tourism potential.

A destination-level Tourism Infrastructure Index (TII) is used to compare the presence or absence of selected tourism attributes. A value of 1 is assigned where an identified facility/resource is present and 0

where it is absent. The resulting destination score is normalized by the maximum attainable score. The index is therefore intended as a screening and comparative tool rather than as a comprehensive measure of tourism quality.

TII = Destination score / Maximum attainable score

The original study assesses five broad categories: attraction, accessibility, accommodation, amenities and activities. The indicators include scenery, mountains, waterfalls, climate, wildlife, temples; roads, railways and airways; hotels, lodges and drinking water; trekking, viewing, bathing, entertainment, internet, ATMs, foreign-exchange facilities and hospitals; and sightseeing, playing, photography, fishing and light-and-sound activities. Because the underlying data are binary and derived from local reports, the index should be interpreted cautiously.

VI. Study Area and Tourism Resources

Ambasamudram is situated near the foothills of the Western Ghats and is closely associated with the Tamiraparani river system and the forested mountain landscape. The wider landscape contains natural and cultural resources that can support nature-based tourism, pilgrimage tourism, adventure tourism, plantation tourism and community-based tourism. The original manuscript identifies Manimuthar, Manjolai, Papanasam and Karaiyar as the principal destinations examined.

Destination	Principal Tourism Resources	Potential Tourism Segments
Manimuthar	Dam, waterfall, mountain scenery, river landscape	Nature, leisure, photography, adventure
Manjolai	Tea estates, plantations, cool climate, mountain scenery	Plantation, nature, scenic and experiential tourism
Papanasam	Agasthiyar Falls, temples, river landscape, religious traditions	Pilgrimage, nature, family and leisure tourism
Karaiyar	Reservoir, boating, Panatheertham/Bana Theertham area, forest landscape	Nature, boating, adventure and ecotourism

Official district information confirms the significance of Manimuthar Dam/Falls and Papanasam/Agasthiyar Falls as established tourism attractions. The district administration describes Manimuthar as a scenic site at the foothills of the Podhigai Hills and notes road connectivity and nearby railway access through Kallidaikurichi. It also identifies Agasthiyar Falls as a prominent attraction associated with Papanasam and pilgrimage activity (Tirunelveli District Administration, 2026a, 2026b).

VII. Tourism Policy Context

Tamil Nadu Tourism Policy 2023 provides an important policy framework for interpreting the infrastructure requirements identified in this study. The policy emphasizes destination development, protection of tangible and intangible heritage, mapping of the tourist journey, private-sector participation, local stakeholder identity, higher-value tourism rather than merely higher footfalls, and authentic visitor experiences. It also gives attention to responsible tourism, community-led tourism, capacity building, branding, digital initiatives and investment incentives (Department of Tourism, Government of Tamil Nadu, 2023).

The policy's industry-status approach is relevant to the study area because it can facilitate tourism investment and the development of accommodation, recreation and experiential tourism projects. However, the application of investment incentives in environmentally sensitive Western Ghats locations should be subject to ecological safeguards, carrying-capacity assessment, waste-management standards, water-resource considerations and community consultation.

At the national level, Swadesh Darshan 2.0 seeks sustainable and responsible destination development through a holistic approach covering tourism and allied infrastructure, tourism services, human capital, destination management, promotion and institutional reform. This is particularly relevant to destinations such as Ambasamudram where infrastructure gaps cannot be solved by constructing roads or hotels alone (Ministry of Tourism, Government of India, 2026).

VIII. Tourism Infrastructure: Dimensions

8.1 Physical Infrastructure

Accommodation, drinking water, sanitation, electricity, waste management, visitor facilities, parking, viewing areas and recreational infrastructure constitute the physical base of destination development.

8.2 Accessibility Infrastructure

Road connectivity is especially important for Western Ghats destinations. Rail and air connectivity operate mainly through nearby nodes rather than directly at the destinations. Last-mile connectivity, road quality, parking and safe pedestrian movement can therefore be decisive for visitor experience.

8.3 Service Infrastructure

Tourist information centres, internet connectivity, ATMs, banking services, medical facilities, trained guides, food services and emergency support influence destination usability and visitor confidence.

8.4 Administrative and Institutional Infrastructure

Destination management requires coordination among tourism, forest, local government, transport, public works, police, health and private-sector actors. Clear responsibilities and coordinated implementation are essential in ecologically sensitive destinations.

IX. Tourism Infrastructure Index: Results

Destination	Total Score	TII
Karaiyar	11	0.44
Papanasam	17	0.68
Manimuthar	16	0.64
Manjolai	9	0.36

The original assessment indicates that Papanasam has the highest infrastructure score (0.68), followed by Manimuthar (0.64). Karaiyar (0.44) and Manjolai (0.36) are below the midpoint of the index. Since the maximum score represented by the original indicator structure is 25, the TII values correspond to 17/25, 16/25, 11/25 and 9/25 respectively. These results should be understood as relative infrastructure-availability scores, not as measures of overall destination quality.

X. Interpretation of Findings

Papanasam's relatively high score is consistent with its combination of natural attraction, religious significance and comparatively established visitor activity. Manimuthar also performs relatively well because its dam and waterfall provide a recognizable tourism product and the destination benefits from road accessibility. These two destinations therefore have a stronger base from which destination-management improvements can be pursued.

Karaiyar's intermediate score suggests that substantial natural and recreational potential exists but that supporting infrastructure needs strengthening. In such locations, investment should prioritize essential visitor services, safety, information, controlled access, sanitation and environmentally appropriate recreation rather than large-scale construction.

Manjolai's low TII score highlights the importance of access, accommodation, visitor information and basic services. At the same time, its plantation and highland character requires a more carefully regulated tourism model. The objective should be to create high-value, low-impact experiences rather than uncontrolled mass visitation. This aligns with the Tamil Nadu Tourism Policy's emphasis on higher-value tourism and authentic experiences.

XI. Major Constraints to Tourism Infrastructure Development

Constraint	Implication
Inadequate and uneven funding	Remote destinations often require relatively high per-unit infrastructure costs while generating uncertain short-term returns.
Fragmented institutional coordination	Tourism development intersects with forest conservation, water resources, local government, transport, public works and public safety.
Environmental sensitivity	Western Ghats destinations contain ecologically valuable landscapes, so road widening, construction, waste generation and visitor pressure require careful assessment.
Weak destination-level data	Reliable data on tourist numbers, length of stay, expenditure, carrying capacity and local employment are necessary for evidence-based planning.
Limited local participation	Community involvement may be constrained by institutional, structural and operational factors, as noted in the tourism-development literature (Tosun, 2000).
Inadequate visitor information and digital services	Real-time information on routes, timings, regulations, accommodation, weather, safety and emergency services can improve visitor confidence.
Maintenance deficits	Infrastructure quality depends not only on capital expenditure but also on regular maintenance, sanitation and service management.

XII. Sustainability and Community Participation

The development strategy for Ambasamudram should place ecological sustainability at the centre of infrastructure planning. The Ministry of Tourism defines sustainable tourism through attention to economic, social and environmental impacts and has promoted national strategies for sustainable tourism and ecotourism. The current national policy direction therefore supports a model in which infrastructure enables tourism without degrading the ecological base of destinations (Ministry of Tourism, Government of India, 2022, 2026).

The presence of KMTR and the wider Agasthyamalai landscape strengthens the case for conservation-oriented tourism. The Tamil Nadu Forest Department notes that KMTR is part of the South Western Ghats and the Agasthyamalai Biosphere Reserve and highlights ecologically sustainable livelihood options and ecotourism within its management context. Tourism planning in the Ambasamudram region should consequently be coordinated with conservation requirements and wildlife-management objectives.

Community participation should move beyond consultation to benefit sharing and local enterprise creation. Potential interventions include trained local guides, women-led food and craft enterprises, regulated homestays, locally produced souvenirs, cultural interpretation, community transport and nature-education programmes. However, as Tosun (2000) emphasizes, participation can face structural and institutional constraints; therefore, government agencies must provide capacity building, access to finance and transparent institutional mechanisms.

XIII. Policy Recommendations

1. Prepare a destination-level integrated tourism development plan for the Ambasamudram–Papanasam–Manimuthar–Karaiyar–Manjolai tourism circuit.
2. Prioritize basic infrastructure—safe roads, sanitation, drinking water, waste management, parking, emergency services and visitor information—before large-scale commercial construction.
3. Develop a digital destination-information system covering maps, permitted activities, opening hours, accommodation, weather alerts, forest regulations, emergency contacts and responsible-tourism guidelines.
4. Establish carrying-capacity and visitor-management protocols for ecologically sensitive locations, particularly waterfall, forest and wildlife areas.
5. Strengthen community-led tourism through guide training, homestay standards, local food enterprises, handicrafts, plantation experiences and benefit-sharing mechanisms.
6. Create a destination-level Tourism Infrastructure Monitoring Cell involving tourism, forest, local government, transport, health and other relevant agencies.
7. Introduce periodic infrastructure audits using an improved TII that incorporates quality, reliability, accessibility, environmental performance and visitor satisfaction rather than simple presence/absence measures.
8. Encourage carefully screened PPP investment in accommodation, recreation and visitor services while retaining public responsibility for core infrastructure and environmental safeguards.
9. Improve last-mile connectivity and road safety without compromising ecological integrity; road development should be based on environmental and engineering assessments.
10. Develop a responsible marketing strategy that promotes longer stays, local spending and dispersed visitation rather than concentrating visitors at a few fragile sites.
11. Establish regular data collection on visitor arrivals, tourist expenditure, length of stay, employment, local enterprise participation and environmental indicators.

12. Link tourism infrastructure development with skill development so that local youth can participate as guides, hospitality workers, digital-content creators, transport providers and entrepreneurs.

XIV. Limitations of the Study

The study has several limitations. First, it relies primarily on secondary information and local reports, and therefore does not provide a statistically representative survey of visitors or households. Second, the TII uses binary indicators and gives equal weight to the selected facilities; it therefore does not distinguish between the quality, capacity or reliability of individual services. Third, the study does not estimate tourist expenditure, employment multipliers, carrying capacity or environmental externalities. Fourth, destination conditions can change over time, especially following infrastructure projects, conservation restrictions or changes in visitor flows. Future studies should therefore combine the TII with primary surveys, GIS-based accessibility analysis, visitor expenditure data, household surveys, carrying-capacity assessment and environmental indicators.

XV. Scope for Further Research

A stronger empirical model could develop a weighted Tourism Infrastructure and Sustainability Index incorporating accessibility, accommodation, basic amenities, digital connectivity, safety, environmental management, community participation and visitor satisfaction. GIS could be used to map travel times and service gaps. A household survey could measure tourism's effects on income, employment and local entrepreneurship. Visitor surveys could examine satisfaction, willingness to revisit and willingness to pay for improved services. A time-series database could also assess whether infrastructure investment increases tourist arrivals, length of stay and local economic activity over time. Such an approach would convert the present exploratory assessment into a more rigorous evidence-based destination-management framework.

XVI. Conclusion

The Western Ghats region of Ambasamudram Taluk has a strong resource base for nature, pilgrimage, plantation, adventure and community-oriented tourism. The study's Tourism Infrastructure Index indicates substantial variation among destinations: Papanasam and Manimuthar have comparatively stronger infrastructure foundations, while Karaiyar and particularly Manjolai require greater attention to supporting facilities. The evidence suggests that the region's principal challenge is not the absence of tourism resources but the uneven conversion of those resources into safe, accessible, sustainable and locally beneficial tourism experiences.

The policy direction should therefore shift from attraction-centric development to integrated destination management. Tamil Nadu Tourism Policy 2023, the national sustainable-tourism and ecotourism strategies, and the destination-development orientation of Swadesh Darshan 2.0 provide a supportive policy environment. For Ambasamudram, however, successful implementation will depend on local institutional coordination, ecological safeguards, community participation, reliable data and maintenance of infrastructure. The most appropriate development model is not mass tourism but sustainable, higher-value and community-inclusive tourism that protects the natural and cultural resources on which the region's long-term tourism economy depends.

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