

LEGAL COMPONENT OF THE TOURISM SYSTEM TO MAKE CONSENSUS DECISIONS WITH MICMAC PROSPECTIVE TECHNIQUE: CASE STUDY OF THE MUNICIPALITY OF LA VEGA - CUNDINAMARCA

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Abstract - *The research presents the law component of the tourism system that contributes to consensus decision-making of the actors in the supply chain. The primary actors (hotels, agencies, sites, and tourists) and their relationships with the secondary actors (transporters, entertainment, artisans, and guides) allow the real experience of the tourist. Meanwhile, the system's strategic decisions are carried out in isolation, causing a deterioration in the provision of regular tourist services and experiences; Therefore, the tourism system to improve strategic decision-making in consensus will resort to the creation of prospective scenarios from a legal perspective.*

The prospective methodology in the municipality of La Vega-Cundinamarca was applied to 12 experts with a DELPHI-type survey who selected the key variables to build future scenarios with the MICMAC technique. 22 key variables were found that yielded 12 future scenarios in Regnier's abacus: 2 desirable, 1 optimistic, 3 plausible, 2 trendy, 2 pessimistic, and 2 terrible; concluding that the actors must be trained and legally supported by their resources and capabilities to apply the scenarios and not continue with the deterioration of the sector and the environment.

Keywords: *Tourism Law, Prospective, Consensus decision-making, stakeholders, MICMAC, DELPHI.*

INTRODUCTION

The increase in tourism in the post-pandemic of COVID 19, the carrying capacity of the visiting sites has been exceeded, causing the visitor's experience to not be positive, due to the providers' lack of integration and control. of the service, generating a series of logistical and marketing failures that deteriorate the experience, such as excessive charges or delays in the activities offered to visitors [1].

The research analyzes the municipality of La Vega near Bogota that it must discover and enjoy, among which are natural parks, aquatic and archaeological riches, natural wonders, gastronomic and cultural variety, which allows the visitor to find innumerable attractions to enjoy at all times of the year [2].

The article shows the interdependencies of the actors in the tourism system and how they are articulated with decision-making by consensus to address the current impact of tourism on economic growth and sustainability due to the recognition by the population of the tourism boom both in the urban and rural areas [3].

The study intends to integrate the elements of sustainable tourism and the articulation of the actors that provide their services to the tourist, according to the activities practiced in the destinations, lifestyles, motivations and needs of the visitors (demographic, psychographic and socioeconomic variables); to meet the needs of each actor and guide strategic planning on the



requirements and satisfaction of visitors, therefore, for a better integration of tourism as an industry and not a trade[4].

Additionally, the actors of the tourism system need to know and apply decision models in their nodes, as shown in the references in Table 1, because when they are applied at different levels, the system will behave as a solid industry. and integrated, the models presented to determine the strategic, tactical, and operational levels according to the needs of the system.

TABLE I MODELS MAKING DECISIONS THE TOURISM SYSTEM

STUDY AREA	MATTERS ADDRESSED
capacity planning	Found that consumer-focused studies generally focused on the use and impact of social media in the research phase of travelers' travel planning process. Supplier-related studies have concentrated on promotional, management, and research functions.
Global sourcing network	Sharing practices through social media appear as valuable articulations of sociability and emotional support while having less relevance as information sources for holiday decision-making
reputation and visibility	a conceptual model of the relevance of the tactical and the strategic dimension of these variables, classified according to their tangible, reputational or contextual nature
tourist satisfaction	Originality/value - Achieving customer satisfaction should be one of the most important goals of every DMO and, to our knowledge, a few universal cause-and-effect measurement instruments/models have been developed to support this goal.
web media operations	Show a positive correlation between hotel purchase intention and customer expectations and review valence. Conversely, the presence of hotel managers' responses to guest reviews has a negative impact on purchase intentions.
Sustainability and consensus	The assessment results provide a new empirical approach and a valuable management tool to assess the existing infrastructure and environment and predict future improvements that can be re-applied to other destinations.

Table 1 shows relevant decision-making models such as digital models, sustainability, and consensus for managerial decision-making such as the behavior of tourists in social networks, little future planning, integration of operations, the marketing. and logistics of the tourism system. On the other hand, [5] the following aspects are emphasized: system coordination roles that can affect the performance of the entire system, based on centralized decisions, on the other hand, decentralized decisions without system consensus cause the loss of connections, and everything is operated individually, which is the most used.

The foregoing leads to the research problem that consists of how the tourism system can involve the largest number of actors to make consensual decisions that lead to achieving sustainability, for which this article makes a description of the system and the methodological tool that allows relating them. towards consensual decision-making.

1. THEORETICAL FRAMEWORK

A. The Tourist System: This system considers the information management component of [6], the client relevance component of [7], and the organizational management component of [8], and with them improves coordination between the actors in the supply network. From the supply chain models, various types of tourism management models are analyzed, and determined from a systemic approach in four large models, such as those shown in Table 2.



TABLE 2. COMPARISON MODELS OF TOURISM SYSTEMS

Elements of the model	Structural-functional models: Beni model 2003	Demand models: Moscardo model 2001	Destination development models: Inskeep Model 1998	Impact models: Hall Model 2000
income	The needs of the basic components, state, community, and company	The needs of travelers	the needs of the natural and general environment	The needs of travelers and the state
Processes	Each activity among the set of activities	Each activity is focused on what the tourist wants	How the activities are brought to the destination	Activities according to the regulations of the current government
Outcome	The result of one relationship set is attempted to be processed among the other sets	The opinions of the traveler on how to attend more than the visiting site	The permanent use of destiny	ISO-type status and procedural management indicators
Control	Through the control of environmental improvement, structural improvements, and profitability improvements	In the visits and comments of the service, in the number of returns	The conservation and preservation of the destination	According to the level of experience acquired by each main member of the system
Interface	Only between the leaders of each set of basic elements, with the processes intersect.	Between the agents and direct operators of the system	Only among the actors who own the destiny	Among the direct actors of the system

B. Environmental Laws Colombia: These are some of the environmental laws of Colombia that have been issued from 2017 to 2021, and the main aspects for the actors of the tourism system:

Law 1938 of 20181: This law partially modified articles 33 and 38 of Law 99 of 1993, which refer to the formation and operation of the National Environmental Council and the National Environmental System. Among the most important changes are the inclusion of the ministries of Culture, Housing, and Health, and the National Land Agency in the National Environmental Council; expanding the functions of the Council, such as the formulation of environmental policies, plans, and programs; the creation of intersectoral technical committees to support the Council; and the definition of the criteria for the allocation of resources from the National Environmental Fund.

Law 1968 of 2019: This law prohibited the use of asbestos in the national territory and established guarantees to protect the health of Colombians. Asbestos is a mineral fiber used in the construction industry, but it has harmful effects on human health, such as cancer. The law established a five-year period for companies that use asbestos to replace this material with safer ones and created a fund to finance industrial reconversion and care for asbestos victims.

Law 1972 of 2019: This law established the protection of the rights to health and a healthy environment, establishing measures to reduce polluting emissions from mobile sources. Among these measures are the obligation of motor vehicle manufacturers and importers to comply with international emission standards; promoting the use of clean and alternative fuels; strengthening



the national air quality monitoring and control system; and implementing comprehensive sustainable mobility plans.

Law 1973 of 2019: This law regulated and prohibited the entry, marketing, and use of bags and other plastic materials in the Archipelago department of San Andrés, Providencia, and Santa Catalina and the Minor Islands that comprise it. The objective of this law is to protect the marine and coastal environment, as well as the Raizal culture and identity, against the negative impact of plastic. The law established a period of two years for the inhabitants, merchants, and visitors of the archipelago to adapt to this measure and created a program to promote the rational and responsible use of plastic.

Law 2111 of 2021: This law replaced Title XI “Crimes against natural resources and the environment” of law 599 of 2000, which is the Colombian penal code. The law modified some existing criminal types, such as damage to natural resources, environmental pollution, and invasion of protected areas, among others; and introduced new criminal offenses, such as illegal wildlife trafficking, ecocide, and biopiracy, among others. The law also increased penalties for these crimes and included measures to ensure comprehensive repair of environmental damage.

C. Consensus decision making: The first mathematical approximations to the Consensus model were given by [9]. Subsequently, several consensus models have been proposed, such as [10]. According to [11] “Consensus is defined as the total and unanimous agreement of all experts with respect to all possible alternatives, customer expectations.” The first concerns Consensus under different preference representation structures, because many models had different presentation structures: many consensus models for DMG with different language preference representation structures and proposed approaches to support consensus and achieve incomplete preference relations, among others).

The second group refers to the Consensus in MCGDM (Multiple Criteria Group Decision Making) as follows: Decision makers/experts make value judgments using decision matrices on multiple attributes and alternatives [12]; The third group refers to Consensus in dynamic/web contexts, where GDM topics have regular changes over alternatives and experts. On this topic, [13] proposed dynamic consensus models to manage dynamic changes over a set of alternatives. Recently, [14] proposed a new consensus framework for GDM (Global Decision Making) with additive preference relationships that take non-cooperative behaviors into account. In addition, [15] expanded the Consensus framework to detect and manage non-cooperative behavior in the linguistic context.

D. Prospective tools: For [16], prospective is “conceiving forecasting as a discipline whose object is the analysis of the future, a time that can reserve surprises for us if we simply let it happen by the force of events, but this could be done according to our interests.” if we make the decision to shape it from now on.”

In practice, there is no single method for obtaining scenarios, but rather an infinity of ways to build them. However, only studies carried out considering the following aspects qualify as scenario method: a) Analyzing the phenomenon in the study, from a retrospective and current point of view b) Analyzing the influence of the social groups that are managers of the development of the phenomenon, as well as the factors of change c) Present the results in the form of scenarios.

E. Strategic Foresight: According to [17], strategic foresight is taken “as an approach that promotes the development of long-term actions, with instruments that simultaneously analyze disciplines, factors, processes, and actors, which are traditionally considered in isolation. In this case, what matters is the design and construction of alternative futures, which is far from making speculative predictions about viable scenarios, which are projected and limited to what the trend can offer”.

Scenarios: A scenario is conceptualized as a set formed by the description of a future situation and a course of events that allow moving from an original situation to a future one [18].



2. METHODOLOGY

It is developed under a prospective methodology with the construction of scenarios, where the scenario qualifier considers the following aspects: (1) Analyze the phenomenon under study; (2) Analyze the influence of social groups; (3) Present the results in the form of scenarios. It was developed in two stages: the construction of the study variables and the second stage is application of the instruments (Delphi Survey, (Matrix of Multiplication of Crossed Impacts Applied to a Classification) MIC MAC).

For the analysis, a study was carried out with three fundamental objectives and with the descriptors for each of them where the experts selected the Scenario and the strategy for decision-making in consensus for the tourism system. with the following steps: (1) Discover and link the main variables. (2) Determine, based on the key variables. (3) Describe, in the form of a scenario, the possible evolutions of the study system in relation to a set of hypotheses.

With the identification of key variables, future scenarios are designed to take advantage of their natural, and cultural potential and their ancestral value as supports to define within these specific areas that can be developed for tourism. Through the DELPHI and MIC MAC analyses, clear scenarios are created that are viable for the actors to make decisions by consensus [19] [20].

A. Universe and population, sample, and sampling

Municipality of La Vega: It has approximately 13,853 inhabitants, it is one of the oldest and most visited municipalities in western Cundinamarca, it is declared a natural reserve and heritage of all since it is a region with a primary source of water due to its high humidity, in its surroundings there are a great variety of lagoons and ravines, there are different species of fauna and flora.

Technical sources and data collection: The sources of information that were handled were relevant factors such as government entities, such as the municipal planning secretary, and the inhabitants of the sector who define themselves as experts. to be able to establish the key variables, know the global panorama, and generate the best scenarios for the population. In the development of the analysis of the current situation, the categories, and the distribution of dimensions in the surveys were defined as follows:

The main dimensions such as economic, social, and environmental that affect the decisions of the tourism system, followed by the categories of infrastructure, migrations, and attractions, among others, constitute the basis of the prospective. Table 3 shows the three types of experts that are: formal sector, official, and empirical sector with four sectors of their specialization that are: economic, social, environmental, and tourism.

**TABLE 3
TYPES OF EXPERTS FOR THE SYSTEM.**

EXPERTS	
ECONOMIC	OFFICERS: secretaries of government and finance
	EMPIRICAL. Tourist services managers
	FORMAL: guides, travel agencies
SOCIAL	OFFICERS: social welfare secretaries
	EMPIRICAL. community leaders
	FORMAL: Associations and foundations.
ENVIRONMENTAL	OFFICIALS: environment or habitat secretaries.
	EMPIRICAL. Caretakers, guides, caciques
	FORMAL: spas, parks, agroecological farms.
TOURIST	OFFICIALS: secretaries of tourism
	EMPIRICAL. Agencies and informal business units
	FORMAL: managers of hotels and theme restaurants.



3. DISCUSSION

The proposed tourism system presents in gray a series of nodes as the main ones in the network, in orange the hotel (formerly considered the central axis) of which multiple investigations have been developed, in addition, 6 nodes of the set show interrelated economic activities and linked to the tourist experience like this:

Node 1: Tourist in your city/country; Node 2: Travel agency; Node 3: Transportation; Node 4: Stay at the visiting site; Node 5: Additional Tourist Services; Node 6: Place to visit, know or rest.

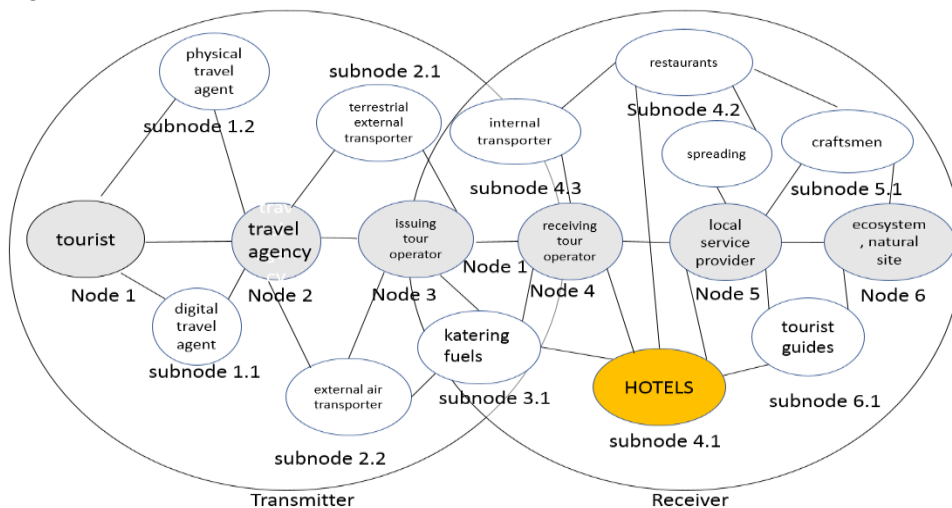


Fig. 1. Proposed tourism system.

As in the other networks or supply systems, the distribution of value between each of its components must be differentiated and, on the other hand, the connection between these, in addition, the complexity of the network must be understood, which is perceived in the variety of providers on the same site, which may be linked to one or more tourism products. Figure 1 shows the first level of the tourism system, node 1 begins with the tourist in their country or city of origin and node 6 in the destination protected area. The next node has to do with external transportation, The fourth node has to do with the visiting site, who are the ones that will provide the experience that the tourist will achieve, node 5, which are related services, including transportation internal (either to the hotel or to all the places to visit), and node 6 includes not only the protected area but also the excursion or guide service that is in charge of maintaining environmental sustainability [4].

As it is possible to perceive each of the nodes has its own supply subsystem that needs specific inputs and services and at the same time contribute to economic and social growth with employment and integration, but always leaving aside the environmental component in the mitigation, preservation and conservation. , being this, as said before, the essence of the business. For the above, the tourism supply system in each of its nodes must be clear about the process, type, quality and quantity in decision-making in each of the connectors; And you can see the network of connections between the network, such as logistical and inter-functional guidelines to show that the network must be interconnected for optimal operation with a balance between efficiency and effectiveness according to the influence shown in table 4.

TABLE 4. RATING OF ACTORS

	ACTORS	A1	A2	A3	A4	A5	A6	A7	TOTAL INFLUENCE
A1	Local government	X	3	4	3	4	0	0	14
A2	Costumers	3	X	2	3	4	1	0	13
A3	Hoteliers	2	2	X	2	2	2	0	10

A4	CCB	1	1	1	X	3	1	0	7
A5	Entertainment	1	1	2	4	X	1	0	9
A6	Guides	3	1	4	3	3	X	0	14
A7	Nature Sites	4	4	4	4	4	4	X	24
TOTAL DEPENDENCE		14	12	17	19	20	9	0	91

In the MIC MAC, 24 key variables were defined, discarding 10 that are in uncertainty, others are the planning and design of the ecotourism service that is in the autonomous area as shown in figure 2.

- Employment of the population located in the autonomous zone.
- Generation of employment that is in the autonomous zone.
- Participation of the local communities that are in the autonomous zone.
- Tourist infrastructure located in the departure zone.

On the other hand, according to our analysis, we consider the other 14 variables relevant and optimal, which allow us to formulate more accurate strategies, and they are categorized as follows:

- Quality of the tourist service that is in the power area.
- Customer Satisfaction that is in the power zone.
- Creation of associative tourist companies that are in the power zone.

The area of power is remarkable the marking of variables in terms of the quality of the tourist service provided that is used in the region due to its warm climate, and that allows a good quality of service, managing to offer its clients a high level of satisfaction and unforgettable experiences.

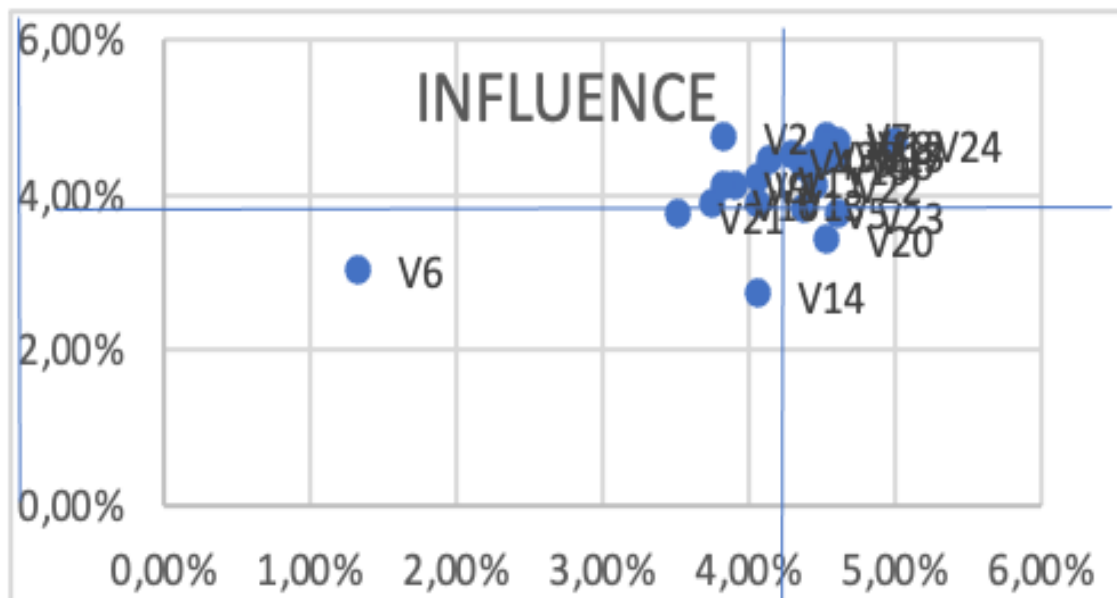


Fig. 2. Result MICMAC actors.

In the autonomous zone, the variables stand out: Signage; cultural diversity; Statistics and controls; climate; Access for people with disabilities; Typical Gastronomy; Direct contact staff. These seven variables are considered with a low tendency of success, they do not represent great importance for the experts, for them the autonomous zone is indifferent due to the high dispersion.

Regarding the conflict zone, the following variables stand out: Financial resources; Tourism training programs. These two variables are characterized by being very important because they have a high level of dependency and a high level of influence, so it is essential not to neglect them since they are quite volatile and not working on them properly can strongly affect the region.



Analyzing the starting area, we find the following variables: Management and control of resources; Urban and rural safety, more attention should be paid to your safety.

CONCLUSION

From the analysis of variables and factors, the decision-making factors were determined regarding the laws on natural and tourist resources existing in the study area, with the objective of generating knowledge about legal compliance for projects based on decision-making. agreed upon for the development of tourism.

In the tourism sector, it is evident that there are laws, policies and regulations that have collaborated in the generation of tourism projects, which allow the creation of participatory scenarios such as communities.

The competitive advantage of conducting prospective research is that it opens a gap in the possibilities of conception and vision of the importance of tourism in the economic development of the region.

Listed below are the prospective scenarios for the study area, such as:

Scenario 1 (E1), which corresponds to the power zone (EXPECTED), is a scenario that aims to directly influence tourism in the region using current legislation. Scenario 2 (E2), which corresponds to the conflict zone (DESIRED), is another scenario that we are betting on, it can influence and have a greater impact on tourism in the region because the change in laws opens a door for tourist growth. Scenario 3 (E3) corresponds to the Autonomous Zone (CURRENT), these are variables that are not important for the different actors, it is based on current laws and high penalties. Scenario 4 (E4) is the exit zone (E4) (ASPIRATIONAL), a zone of zero tendency that consists of continuing in informality and with penalties of legal sanctions.


The improvement of the processes of the tourism system based on changes in legislation, contributing to tourism as a development pole, improvements in infrastructure, consensual organizational management, green engineering designs to measure and make decisions in engineering fields. outside the traditional and with support for sustainability.

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