

# A Proposal of a Method to Measure the Satisfaction Indicator of the Local Community Concerning Tourism: A Case Study of Jalapão State Park, Tocantins

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**Abstract**—Tourists bring many benefits to a local community, encouraging it to be involved in that activity; however, it may also have detrimental effects like garbage, noise, violence, external culture and the damaging of the natural environment among others, which may promote community dissatisfaction. The contact between the tourist and the local community is a concern, especially when the community is located near protected areas. In this case, the community must know the tourist destination well, so it can collaborate in the tourism development without harming the environment. In this context, the present article aims to demonstrate the results of a research study conducted as part of a doctorate program in Sciences from the University of Sao Paulo, Brazil. It had as an objective to elaborate a methodology proposal to measure the local community satisfaction indicator, with applicability on a case study in the Mateiros community located in the surrounding area of the Parque Estadual do Jalapão –PEJ conservation unit in the state of Tocantins, Brazil. This is a study of an interdisciplinary nature that had the deductive method as its guide. The indicator result is going to be presented in this study. It pointed out as negative factors: there is no involvement between the local community and the tourism sector, and there is also dissatisfaction with regard to the town's basic services. The study showed as positive the local community knowledge about the various attractions in the surrounding area and that the group recognizes the importance of the tourism for the town and life. Concerning the methodology that was used, the results showed that it can collaborate in seeking actions of improvement and involvement of the community in the planning and development of the local tourism. It comes out as an efficient analysis tool, thus enabling the perceiving of the local community point of view.

**Keywords**—Satisfaction indicator, tourism, community, Jalapão.

## I. INTRODUCTION

FROM the 1980s, the sociocultural impacts and the consequences on the natural environment of tourism started to be shown, thus implying in a different discussion about the sector that has to be connected not only to economics, but also to the social area and environment: sustainable tourism [1], [2].

Sustainable tourism is seen as a system composed of several social, economical, cultural and environmental elements, among others. Therefore, to develop a clear outlook of this activity, an analysis of the points, which are represented by the

World Tourism Organization (UNWTO) indicators, as key points to conduct sustainable tourism.

One of the key points presented by the UNWTO is related to local community satisfaction. This relationship is regarded as fundamental for a consolidated tourism industry, as local community must be involved in its development. It is the community that will be in contact with visitors through the services they provide in the various touristic facilities. The local community should also be engaged in the overall planning of the directives regarding the target market the community and sector wants to attract. That relation shows itself as a complex, especially with the local communities located around protection zones. On one side are the considerations relating to the protection of the environment. While on the other side are the considerations of tourism activities that must be planned around sustainability, and which implies several restrictions, and consequently, a reduced flow of tourism traffic. Hence, there is a challenge to maintain the relationship between the protected areas and the local community, while also meeting the demands and expectations of both. In light of this context, the proposed indicator may demonstrate the perception of the community relating to the tourism activity, and consequently, suggest preventative mechanisms or, jointly, try to find alternatives to solve problems.

In light of the approach, the sustainable tourism indicators proposed by UNWTO in this work will be presented is part of a research project that aims to analyze the applicability of tourism monitoring focusing on the sustainability indicators identified. The research is a case study, which was conducted with the Parque Estadual do Jalapão conservation unit in the state of Tocantins.

The results of the local community satisfaction indicator will be presented in this article. It is an interdisciplinary study, based on the deductive method.

## II THE JALAPÃO REGION

Jalapão is a Brazilian region with a total area of 53,000 m<sup>2</sup>. It is made up of the states of Bahia, Piauí, Maranhão and 34,113,000 m<sup>2</sup> of the total area is in the eastern side of the state of Tocantins [3].

According to Brazilian Federal Law No. 9985 from July 18<sup>th</sup>, 2000, some conservation units and ecological corridors

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were formed with the objective of protecting the ecosystem (which is very rare and fragile), in order to allow for the development of scientific and touristic research, ensuring sustainable exploitation of available resources [4].

One of the conservation units is the Parque Estadual do Jalapão, with an area of 150,000 hectares. It is considered the largest Park in the state, with a frail ecosystem that consists of sandy rocks formed by billions of years of marine sediments and fauna that shelter rare and threatened almost to extinction species [3].

Among the towns that make up the Jalapão, Mateiros (9,681,657 km<sup>2</sup>; 2,223 inhabitants) is one that profits most from the tourism flow in the region [3]. It is in a privileged location in relation to the others. It is also the town that is nearest to the park attractions; thus, it is the main center for receiving tourists and where tourists tend to stay longer during the seasons.



Fig. 1 The Dunes



Fig. 2 Serra do Espírito Santo



Fig. 3 Fervedouro das Bananeiras



Fig. 4 Formiga Waterfall

The site has natural tourist attractions that propitiate the practice of ecotourism: dunes, waterfalls, mountains and ecological trails (see Figs. 1-4). The attractions have been exploited in a disorganized manner, as the efforts towards touristic planning have shown to be ineffective.

### III. LOCAL COMMUNITY SATISFACTION INDICATOR - SC

Tourism activities are not only developed through the potentialities the region comprises, but also through local community engagement. The community is responsible for receiving the tourists, and that task may render a successful touristic destination.

To ensure sustainable and sound tourism growth in the area, the workforce must be valued and stimulated to follow the expansion of tourism. That action will help to avoid high staff rotation and instability in employment in the sector and in the region [5].

Concerning what has been stated above; the managers of tourism must consider the community as a partner in tourism development. Thus, it is mandatory to gain the satisfaction and approval of the community in the process.

The local community satisfaction indicator has as its aim to make a non-simplistic interpretation of the local community satisfaction level about the current status of tourism and, with the results, seek improvement strategies.

The reason to utilize that indicator is that a variation of the satisfaction level may be an astute warning indicator of hostility and the possibility of incidents. It is also a means for one to obtain information about any problems or existing uneasiness before things get worse. That indicator is seen as a direct measurement of the real opinion, as it is the most direct way of getting to know the inhabitants of tourism and its effects [6].

### IV. METHODOLOGY

The methodology of measurement of the Local Community Satisfaction Indicator, SC, was elaborated through a questionnaire with open and closed questions (aiming to complement the analyses).

In order to formulate the questions, a series of factors are considered that involve the level of community satisfaction concerning the services and basic structures for good housing

at a location. Those factors also end up as the fundamental elements for a good tourist stay, as well as the tourist services

that support the community when developing the activities at the site.



Fig. 5 Localization map of the Parque Estadual do Jalapão [7]

TABLE I  
EVALUATION OF THE TOWN OF MATEIROS

	Evaluated items
1	Water supply
2	Street pavement
3	Urban signaling (Department of Traffic)
4	Tourism signage
5	Public cleaning
6	Public security
7	Means of communication (telephone and Internet)
8	Public transportation (bus)
9	Health services
10	Bank services
11	Commerce (in general)

The questions were part of an evaluation with scores from zero to 10 about the town of Mateiros; the respondents must consider as assessment criteria: scores of 0 to 4 as unsatisfactory, from 5 to 7 as satisfactory and from 8 to 10 as excellent.

A total of 380 inhabitants of the town of Mateiros were interviewed. Mateiros is the main tourist reception center and a beneficiary of the activities in the national park. The questionnaire was divided into three parts, with the first referring to a community evaluation of the current status of the basic services available the town of Mateiros (see Table I). Part II was composed of nine questions relating to the tourism activities (see Table II). Part III refers to questions about the community perception of tourism and is composed of five questions (see Table III). Each part of the questionnaire has a maximum score of 10 points. The final score of each interviewee was the result of the average of the sum of the three parts.

TABLE II  
QUESTIONS ABOUT TOURISM

Question	Answer and scores
12. Do you know what Tourism is?	From question 12 to 14:
13. Do you know what a Conservation Unit is?	Yes = 1.0 point No = 0.0 point
14. Have you been consulted by the local manager (mayor, tourism secretary or any person who is responsible for the local touristic activities) about what you think of tourism in the town?	Question 18: 1. Always participates = 1.0 point 2. Participates sometimes = 0.5 point 3. Never participates = 0.0 point
15. Do you take part of the touristic activity planning together with the manager?	Question 19: 1. More than six attractions in the region = 2.0 points 2. From four to five attractions in the region = 1.5 points 3. From two to three attractions in the region = 1.0 point 4. One attraction of the region = 0.5 point 5. Does not know any attraction in the region = 0.0 points
16. Are there people in your Family who work in the Tourism activity?	
17. Do you know of any public or private organization that has offered any course relating to tourism activities?	
18. Have you participated in any course related to tourism activities?	

The final score of the indicator was the average of each respondent divided by the number of respondents.

TABLE III  
QUESTIONS ABOUT THE TOURIST

Questions	Answers and scores
22. Do you consider tourism as important to the town?	1. Yes = 2.0 points 2. Partially = 1.0 point 3. No = 0.0 points
23. Did the town become a better place to live after the arrival of tourism?	
24. Do you have any contact with the tourists?	
25. Has the tourism brought any benefits to you?	
26. Do you consider that tourism is taking good care of the attractions?	

#### V. ANALYSIS OF THE MATEIROS LOCAL COMMUNITY SATISFACTION INDICATOR

The interviewees were represented by 49% male and 51% female; the prominent age group was from 18 years to 50 years old, with the majority aged 16 years to 35 years old.

As for the period of time residing in the town of Mateiros, 44% have always resided in the town, while over 35% have been living there for more than 10 years.

The individual monthly income of the interviewees is mainly between R\$400,00 to R\$800,00 (approximately between US\$125 to US\$245), represented by 40% and the majority of the population work in different areas. The most prevalent jobs are connected to the tourism sector (20%) like craftsmen, tourist guides, room cleaner, among others. Meanwhile, 13% of respondents are public servants.

Local community satisfaction with tourism involves several factors that must be considered. Managers in the sector must seek ways to meet the needs and also to integrate the population in tourism planning. This way, they take part in the

process and value local tourism as an industry. From that perspective, the results of the SC indicator were analyzed using the local community's evaluation in their town as the starting point. Fig. 6 refers to the basic services and structures for acceptable housing in a location. In that perspective, the results of the SC indicator were analyzed using the local community evaluation of their town as the initial point. Fig. 6 refers to the basic services and structures for acceptable housing in a location. The same services and structures are key elements for a good stay for tourists. Also, the services that support the community when developing the touristic activities in the site have been analyzed.

The results of the first part of the interview, which was carried out in the community, demonstrated an average of 4.31 points. It was considered as an unsatisfactory evaluation according to the UNWTO scale.

In an analysis of Fig. 6, it is possible to observe that some items have low scores, such as: the urban signage, street pavements and the public transportation system. All items are directly connected to the transportation sector.

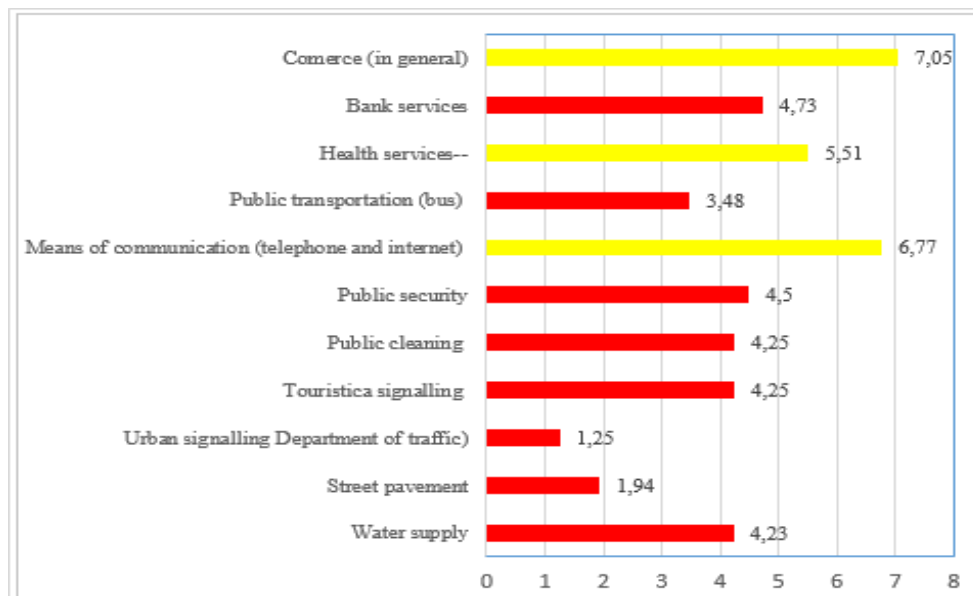


Fig. 6 Evaluation of the basic services in the town of Mateiros

The low level of satisfaction may be verified in the town by the lack of paved streets, lack of regular public transportation services and almost no traffic signs (see Fig. 7).

The lack of such infrastructure at such sites regularly results in turmoil, especially in the tourism season, when the number of vehicles in the region increases. This situation also creates a lot of dust, and consequently, eliciting health problems for local inhabitants, as well as making the houses and shops appear somehow "dirty". It is also worth noting that as there is no traffic signaling and the speed limit in town is not observed, which may cause accidents and is considered a problem by local residents.

The roads to Mateiros (highway TO-030 and TO-110 in the North and TO-255 in the South) have very bad traffic conditions, which makes it difficult the access to Mateiros and there is also a lack of regularity in the public transportation system (see Fig. 8). That matter is highlighted by the local community: as there is no regular transportation system, the residents of Mateiros end up feeling "isolated", and when they need to access health services in bigger towns such as Porto Nacional or even the capital Palmas, they become "hostages" to the availability of a vehicle to take them, which is a situation that can aggravate health problems. The second group of items that also had low scores (from 4 to 4.99)



referred to the water supply, public cleaning services, public security, banking services and tourism signage.



Fig. 7 Streets of Mateiros



Fig. 8 Access road to the city of Mateiros

As for the water supply, respondents reported that there is a constant lack of available water in Mateiros; a problem is exacerbated during the tourism season, when the demand for water by stakeholders in the tourism sector increases.

The problem presented by the town is contradictory because there is a lot of water in the region. Jalapão integrates the Tocantins hydrographic basin, with a rich source of rivers and permanent streams, favoring the biodiversity even more.

The superficial waters cover Jalapão with sandstone. There is a considerable permeability due to the sandy soil, which results in very little surface water. All precipitated water is filtered and slowly reemerges at the bottom of cliffs, with permanent springs that form the river upstream [8].

Concerning the evaluation of public cleaning services, a low score was observed as garbage collection does not occur daily. During the tourism season in particular, large amounts of garbage is generated by hotels and restaurants, as well as waste left behind by tourist, and this rubbish is only collected by the end of the season. This situation can be verified by the presence of garbage all over town and the lack of regular collection, as well, there are only a few trash cans available. These circumstances combine to force visitors and the local community to dispose of waste at inappropriate places. For the same item, respondent reported the problem of an absence of cleaning in public areas in the town, such as the streets and squares.

Although public security and banking services exist in the town, according to evaluations, these are still insufficient and in high demand mainly in the tourism season.

Banking services in Mateiros are provided only in the Federal Lottery shop and in Post-office (there is no ATM in town). On weekends and holidays, when tourists need access the most, both are closed. Businesses offering credit and debit card payment options are nearly non-existent in the majority of shops in Mateiros.

Although the assessments in general have been unsatisfactory, the results show that items such as the means of communication (telephone), as well as the commerce and the health services, were considered as satisfactory by the local community. That is explained by the fact that nowadays there are communication operators in town, thus permitting the use of landline and mobile phones, as well as the Internet (services that were mostly unavailable until four years ago). However, improvements are still needed as in some places in town, where there is no telephone signal and poor Internet connectivity.

Commerce in the region was analyzed as satisfactory by the community, and many respondents reported that many stores and services have made improvements to meet visitor and tourism demands. Consequently, the tourists started going shopping in Mateiros instead of bringing everything from their towns.

The results of the survey suggest that local trade and services must be improved. For example, the introduction of strategies that varies the types and availability of products being sold. There is the lack of vegetables, fruit and meat, especially during tourism season. Also, the cost of the products and produce is high when compared to nearby towns.

It is posed by local business owners that the main obstacles for the improvement of those items are: the precarious regional roads and the irregularity of the delivery of products.

With regard to fresh produce, such as vegetables, fruit and meat, it is worth noting that these could be produced by the local community, however, there is almost no such activity in the region.

The town of Mateiros has the lowest percentage of cattle in the region (7%). There are only a few agricultural supply stores (5%) [9]. On the other hand, there is a concern with the development of those activities, as they are crucial for the local, regional, national and international understanding of how the Jalapão region is. Its beauty, scenery, ecosystems and biodiversity must be highlighted. [9].

One of the items that drew attention concerning the satisfactory evaluation was related to health services in Mateiros, as the community regularly comments that there are no surgical facilities in the town. However, many respondents justified that the basic health services provided by the town administration may be considered good. Nevertheless, there is still a problem where surgeries are concerned: transportation to places where better health services are available. The town administration must improve the ambulance service and the roads, as well as provide air transportation to attend to patients in need of urgent medical attention.

With regard to the analyses of tourism activities from the point of view of the community, the interview began with a very simple question: do you know what tourism is? The question was not based only on a positive or negative response, but also asked respondents to provide an explanation of what they believe defines the concept of tourism. The responses were analyzed and conclusions were drawn as to whether respondents understood the meaning of the activity or not. The results of that question demonstrated that 58% of respondents did not know what tourism was; the majority of the 42% that answered affirmatively was composed by people who had already worked in touristic activities.

With regard to the question asking respondents if they knew what a conservation unit was, the result could not be more different: 66% did not know and only 34% knew how to explain it. That result may be considered worrying because the flow of tourism has increased in the region and the majority of the community has no acknowledgement of the activity. It was clearly noticed that the community does not understand what a Conservation Unit is, does not know why it was created and does not understand their role is in the process in the town.

The lack of understanding about tourism activities and the conservation units on the part of the community is justified when 89% of respondents say they have never been consulted by local managers, the mayor, the tourism secretary or any persons responsible for tourism in the region. With regard to tourism in Mateiros, 94% of respondents declared they have not participated in the planning process of tourism activities with managers or officials.

In response to the question asking if respondents had relatives working in any touristic activity, 63% replied negatively, which shows once again the lack of engagement of the local community in the sector.

It was also noticed that 53% of the interviewees had no information about the availability of courses on tourism in the town. This raises speculation that either the courses have been offered only to those already working in tourism or that local managers are not motivating people who are not directly involved in tourism to participate.

A course of action considering that topic could increase the number of people involved directly in the tourism sector. The results of the research show that only 20% of respondents had some kind of job related to tourism and only 37% had relatives involved in the activity.

It is worth noting that continuous professional training in the sector is offered by various institutions, as well as there are various environmental and social projects undertaken in the region. Thus, the fact that 53% of respondents had never taken part of any course on tourism is not substantiated.

A positive factor emerging from the survey is that 45% of the local community knows at least one of the four or five touristic attractions in the region. This is a very satisfactory point if we observe the distance between the attractions and the town and the access available to them.

Also, the interviews reveal that the community is aware of the tourism potential of the region, and want to collaborate to understand how important the attractions are for the economic

development of the region, as well as the need for the environmental preservation of the attractions to ensure a sustainable future.

Among the attractions that the community knows, Formiga Waterfall was highlighted as the most well-known, as well as the favorite one.

In this research, the community was interviewed about how well the attractions had been taken care of. The community also analyzed how well the managers did their job and protected the environment. The percentage of respondents who answered positively and the percentage who answered in a negative way were very similar.

Some 51% of respondents believe that the managers take good care of the attraction, while the remaining 49% say they do not. The majority of respondents responded positively to only visiting attractions off-season. That reason may influence their positive analysis of the attractions, as they do not encounter as many tourists, the same level of garbage or other negative aspects or impacts. The majority of respondents who answered negatively generally visit the attractions during the tourism season. Consequently, they are able to observe more precisely whether the attractions are being well taken care of.

Another important point is that although the majority of respondents are not involved in the planning of tourism activities, 87% consider tourism as very important for the town of Mateiros, and 59% say the town became a good place to live after tourists started to visit.

In relation to the contact of the community with tourists, 39% say they have a partial contact and 20% said that they always have contact, that is, when it is necessary, they are willing to help with information about the town, which shows the positive reception of tourists by the community.

Finally, the community has the perception that the tourism sector has brought benefits to the local people; 38% "see" those benefits in a direct manner (people who are directly involved with the activity) and 23% "see" the benefit as something partial: they are not involved in tourism but can understand that the income brought by it, is put back into the community itself. A number of respondents also mentioned the tourist's appreciation of the local culture, which also motivates the community to maintain and promote some of the important aspects of the local culture. For instance, the golden straw (a kind of grass called Capim Dourado – a native plant that only grows on the Cerrado or plains in Jalapão).

The community also values positively the contact of the tourists with the attractions; 68% of the interviewees stated that the tourists take good care of the destinations.

After evaluating every topic that composes the CS indicator, the final average score was:

$$CS = 4.81$$

Based on the scale of satisfaction proposed by UNWTO, the results demonstrated that the local community does not consider tourism as satisfactory. However, it must be pointed out that the indicator has tendencies that may increase or diminish. If we take into account that the 5.0 score means the

satisfactory level and also the minimum score for a place where the tourism is still being developed, a CS score of 4.81 may be considered reasonable. Therefore, we conclude that there is no tourism without the involvement of the community. The improvement of the matters that were evaluated in this research and are also proposed by the CS indicator must be considered and a level of excellence must be sought.

#### VI CONCLUSION

We concluded that special efforts must be made so the indicator reaches a scale close to Excellent. In this regard, the proposed indicator measuring method collaborates on the search for improvements and community involvement in the planning and development of tourism in the region. Also, it shows itself as an efficient analysis tool, enabling access to the local community point of view.

It is important to note that the measurement of that point of view was only possible due to the design of some strategies for the data collection, in such a way that the real opinion of the local community was represented.

The researchers engaged in the data collection enabled and conveyed to the interviewees all the necessary information about each item of the questionnaire, so they could comprehend what was being asked and could answer according to their personal point of view.

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