

Environmental Actions in the Hotel Industry of Carolina (Maranhão, Brazil)

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ABSTRACT: Tourism is an economically relevant sector; however, its development, when unplanned, can negatively impact the preservation of the cultural patrimony, and social stability as a consequence. Thus, under the bias of sustainability, our study is a result of a research project that aimed to verify whether there are Actions implemented on the behalf of environmental management in the hotel industry of the city of Carolina, which is located in the region of the Chapada das Mesas National Park, state of Maranhão, Brazil. It is based on the precepts correlated to the environmental management of lodging facilities recommended by Ordinance No. 100/2011 of the Ministry of Tourism, and by the Brazilian Association of Technical Standards No. 15401/2006. To that effect, this investigation was conducted through techniques of exploratory research, with a qualitative and quantitative approach. Our investigation used questionnaires as tools, containing open- and closed-ended questions, applied with hotel industry managers from a list of facilities registered on CADASTUR. For data systematization, statistical resources of the Microsoft Excel program were used. Our results revealed that there are actions in favor of sustainability in the lodging facilities from Carolina. We hope, through this research, to provide theoretical and scientific support for the search for actions that promote ecological tourism, as well as sustainability, in the development of the sector in Carolina, Maranhão.

Keywords: Environmental Actions;
Environmental Management;
Lodgings.

Info do artigo:

Aceito 13/Nov/2023
Publicado 27/Mar/2024

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DOI:10.14210/at.v9i1.20215



INTRODUCTION

The idea of sustainability, as well as its assessment, enables the use of tools that facilitate daily activities of businesspeople and public managers, taking into consideration efficiency and the commitment of actions to guarantee, together with current and future generations, "quality of life", in the social, environmental and economic sectors.

Sustainability indicators allow for a detailed follow-up of the main interest variables of companies, organizations, and governments, which enables the planning of actions to improve their performance. For an effective technical management, it is necessary to monitor and control institutional performance to meet pre-established requirements and the interests of all of society.

Thus, we will discuss in this article, from the Hospitality-Tourism dimension, the analysis of environmental management actions in this sector in Carolina, Maranhão, with the results of this survey subsidizing future environmental planning and management of lodging facilities from this city. To that effect, we will start from the background herein observed.

According to Oliveira (2019): Tourism is one of the most relevant activities in the economic sector for generating employment and income, as well as creating new businesses and increasing the production of goods and services, as it brings forward development to localities, and infrastructure improvements, bringing benefits to tourists and the local community. The sector represents 7.9% of the national GDP and is responsible for 6.59 million jobs [...].

According to the World Travel and Tourism Council (WTTC), the contribution of Tourism to the national GDP should register an increase of 2.5% in 2018, reaching 8.2% by 2028. However, the relevance of a strategic planning for this sector is noteworthy. Public administration and the private initiative should organize themselves to bring forth mechanisms that potentialize the growth in this sector to, together, promote actions that encourage sustainable development.

The lack of planning in the sector, be it local, regional, or national, can generate negative impacts, such as: i. increased generation of solid waste; ii. demand for electricity; iii. reduced air quality; iv. contamination of water from rivers and seas; v. degradation of the local flora and fauna, of the landscape; vi. deterioration of cultural, natural, historical, and even socio-cultural heritage (Ferreira, 2008).

In its article No. 1 of a Decree from December 12th, 2005 (Brazil, 2005), the city of Carolina is part of the Chapada das Mesas National Park (PNCM), a conservation unit of integral protection, created in that year, which also includes the municipalities of Estreito and Riachão, and whose main objective is to: preserve natural ecosystems of great ecological relevance and scenic

beauty, enabling scientific research and the development of environmental education and interpretation activities, recreation in contact with nature and ecological tourism.

In 2007, Ordinance MMA No. 9 was published on January 23rd, designating the region covered by the park, as well as the surrounding areas, as a Priority Area for Conservation, Sustainable Use and Sharing of Benefits of Brazilian Biodiversity (Brazil, 2007). In the 2nd Update of Priority Areas for Biodiversity Conservation, of 2018, the same region is included, according to Ordinance No. 463 of December 18th, from the Ministry of Environmental, which included results from the 2nd Update for Cerrado, Caatinga and Pantanal, already recognized by Ordinance No. 223, of June 21st, 2016 (Brazil, 2018, 2016).

The region is part of the Cerrado biome and is mentioned by the Conservation International (undated) in its document "Hotspots1 Revisited", a publication produced with information based on the book "Hotspots Revisited. Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions", by Mittermeier (2005).

Biodiversity richness, as well as the scenic beauty of this region, arouses interest and encourages tourist activity in Chapada das Mesas, with a focus on ecological and adventure tourism activities. However, the great biodiverse and scenic potential of the region is threatened by environmental degradation due to the advance of mass tourism and commercial agriculture, in addition to other problems arising from the sector's lack of planning for tourism vaunted as ecological.

With regard to mass tourism², Chapada das Mesas has attracted a lot of travelers from this type of tourism (Raízes do mundo, s/d).

The development of agriculture in the region, according to Ferreira (2008), promoted new ways of organizing space in the south of Maranhão, enabling the

1 Hotspot: environment characterized both by exceptional levels of plant endemism and by notable rates of habitat destruction (CONSERVATION INTERNATIONAL, undated). According to Myers (1988), hotspots are areas in tropical forests that meet two requirements: "a) They present an exceptional concentration of species with exceptional levels of endemism, and b) They face exceptional degrees of threat."

2 Aimed at groups of people who move mainly motivated by low cost, ease of displacement, simplification in relations with the place (infrastructure, facilitated human relations, etc.) and driven by an overwhelming marketing with promises of rest, nature etc., mass tourism is the most destructive of the environment that it encompasses (MEIRELLES, 2016).

3 MATOPIBA is an acronym created with the initials of the states of Maranhão, Tocantins, Piauí and Bahia. This expression designates a geographic reality that partially covers the four states mentioned, characterized by the expansion of an agricultural frontier based on modern technologies of high productivity (EMBRAPA, GITE <https://www.embrapa.br/gite/projetos/matopiba/matopiba.html>).

growth of soybean and other commodities. It should be noted that the municipality of Carolina is inserted within the region of Matopiba³ (Brazil, 2015), considered to be an expanding agricultural frontier in Brazil, since the Decree No. 8,447, of May 6th, 2015, which implements the Matopiba Agricultural Development Plan and the creation of its Management Committee.

Regarding the insufficient planning for ecological tourism, Muniz (2016) analyzes how ecotourism practice has been implemented in the municipality of Carolina, bringing as a consequence of the implementation of the activity without planning: the lack of studies on the carrying capacity in the attractions; pollution of water resources; occurrence of graffiti on nearby rocks and/or waterfalls; erosion, arising from the existence of unplanned trails; specialization by segment; the removal of riparian vegetation, among others.

According to the Brazilian Institute of Geography and Statistics - IBGE, the estimated population of the municipality in 2021 was 24,151 people, and the population in the last census was 23,959 people (IBGE Cidades, 2010).

The participation of the different economic sectors in the municipal GDP (unit: R\$ \times 1000) is distributed as follows: Agriculture - 109,176.28; Industry - 14,401.10; Services 117,468.94; Public administration, defense, education and health and social security - 88,983.67 (IBGE Cidades, 2019).

In view of these observations, and of so many contrasts of the presented reality, we assumed that the municipality of Carolina needed concrete actions directed to basic environmental management, in addition to the promotion of sustainability in the region, with the involvement of the tourism trade, as well as of municipal public authorities and governmental institutions, with the purpose of environmental preservation of the entire region of Chapada das Mesas. This is also true for the Chapada das Mesas National Park, a tourist destination for most travelers who pass through the plateau, so as to live up to the motto of nature tourism.

Thus, we proposed the investigation herein presented, defining as our study subject the environmental management within the lodging facilities in the municipality of Carolina, Maranhão, with the objective of: verifying the existence of actions in favor of environmental management, in Hospitality; analyzing the understanding of environmental management tools and their application, as well as verifying if there is interest in the application of environmental management tools by managers; and identifying the hurdles against the application of these tools.

In this sense, we found that there are specific actions that favor the search for environmental management in the Carolinian lodging facilities. Furthermore, we found that part of the managers has troubles in understanding environmental management practices, in addition to not having an interest in acquiring knowledge about

environmental management, although most managers believe that such practices can generate competitive advantage. Regarding the hurdles that prevent the application of environmental management tools, they mentioned financial resources and lack of knowledge on the subject.

THEORETICAL BACKGROUND

On its website, AKATU, a non-profit organization that promotes conscious consumption, points out as a tip to reduce the ecological footprint, travelling in a sustainable way, where the chosen accommodations, means of locomotion, and the preferred food choices are related to the ecological footprint of the tourist. The Institute indicates that, for example, a hotel integrated into the local community and equipped with renewable energy sources can reduce the ecological footprint by up to 48% per trip (Akatu, 2020).

In the search of minimizing the impacts on nature, many consumers are changing their lifestyles to conserve our environment. This change has forced several economic sectors to alter their buying methods, their daily operations, and their fabrication processes, which includes decision-making, so as to focus on environmental issues (Hsiao et al., 2014).

A study conducted by Chen and Tung (2014) analyzed, through an extended research model of the Theory of Planned Behavior (TCP), the intention by consumers to visit green hotels, with results suggesting the increase of popularity of green hotels for the hotel industry.

In this context, it appears that to achieve a green seal, or an environmental certification, it is necessary to adopt environmental management as a practice, in a constant climb towards sustainability.

Environmental certification is a way of establishing, on a global scale and reach, the indices, standards and environmental concepts for the production of products and services on the market. In some cases, this is a voluntary measure, meaning that it may or may not be adopted by the company. However, it has been gaining "mandatory" status, especially for those enterprises that wish to operate in the foreign market. "...+ Environmental certification is related to stimulating competitiveness, aiming to guarantee processes with less impact on the environment, based on the adoption of technical and legal standards" (Vidigal, 2015).

According to Barbieri (2004), [...] environmental management comprises the guidelines and administrative activities conducted by an organization to achieve positive effects for the environment; it is the system that includes planning activities, responsibilities, processes, and resources to develop, implement, achieve, review, and maintain environmental action. It is what the company does to minimize or eliminate the negative effects caused in the environment by its activities.

However, Barbieri (2007) points out to distinct phases,

towards environmental management, in the path taken by companies in search of their adequacy towards sustainability. These are: pollution control, pollution prevention, and strategic stance. Nonetheless, only during the strategic stance would environmental management be adopted, as an element of competitiveness in the company.

From the point of view of relevance, Dias and Pimenta (2005, p. 225), wrote that: Environmental management is important for lodging facilities because, in addition to helping to preserve the environment, it is also of great assistance to the development of a company, helping to increase its income, consequently becoming of enormous importance to the sustainability of the enterprise.

For Caon (2008), to understand the environmental issue as a competitive criterion it is essential for the management of hotel enterprises to be concerned not only with the environmental impacts caused by their operations, but also with what to do to minimize this impact.

When it comes to state actions in Brazil, referring to sustainable management in the Hospitality sector, the Brazilian Association of Technical Standards (ABNT) launched its NBR n° 15401 in 2006. This standard specifies the requirements related to the sustainability of lodging facilities, establishing minimum performance criteria, and allowing a company to formulate actions and objectives that take into account legal requirements and information regarding significant environmental, sociocultural, and economic impacts (ABNT, 2006).

In addition, in 2011, the Ministry of Tourism (MTur) instituted the Brazilian System of Classification of Means of Accommodation (SBClass) and created the National Technical Council for Classification of Means of Accommodation (CTClass), through Ministerial Ordinance No. 100/2011, a document that institutes the Hotel Means of Accommodation Classification Matrix, which lists mechanisms, programs, and actions adopted by the lodging facilities, which are categorized according to such matrix. According to the ordinance, the MTur makes available, on its website, the requirements contained in the Classification Matrices, as well as the list of classified lodging facilities. (Brazil, 2011, p. 2).

Therefore, it is important to note that: [...] environmental planning and management are fundamental for the practice of tourism, especially in local communities, which suffer the greatest impacts generated by the activity, and which often remain outsiders in the process, not participating in an active and decisive way in the developed actions. Planning does not present itself as a solution to the impacts, but leads to their reduction, and may even avoid some of them, working around the vision of equity, balance, and sustainability (Souza et al., 2010, p. 2).

Considering the development of tourist activity on a smaller scale of analysis, with a view to the southern region of Maranhão, we reach the municipality of Carolina, which has received a considerable number of visitors, due to its tourist vocation, especially due to of the local cultural and natural resources and their surroundings, with emphasis on the Chapada das Mesas National Park. According to CADASTUR (Registration System for individuals and legal entities operating in the tourism sector), the municipality contains 33 lodging facilities. The environmental management practices within their scope were the studied subject of this research.

METHODOLOGY

In methodological terms, this is an exploratory research, with a quantitative and qualitative approach.

Exploratory research aims to improve hypotheses, test instruments with a view to approaching the object of study and the investigation locus. In other words, it is an initial study in the sense of familiarization with the research (Gil, 2002).

This research is considered to be quantitative because of the intention to systematize the results numerically, which refers to a method of data analysis that has objectivity as its scope, using measurable mathematical language in order to reveal the results obtained.

As for its qualitative approach, we believe it to be constituted through the interpretation of data and the description of data in a non-objective way (Gerhardt & Silveira, 2009).

As a data collection instrument, a questionnaire was prepared (Chart 1), containing semistructured questions, and applied (in person) to the 32 managers of the referred lodging facilities registered in CADASTUR, our selected sample group.

The lodging facilities registered in CADASTUR were listed through consultation on the website for the subsequent interview. We also noted down each lodging facility by their type: hotel, inn, resort, hostel, and guesthouse.

Regarding the application of the questionnaire, prior contact was made with the managers of the listed accommodation facilities. Then, interviews were scheduled and the questionnaires were applied with the managers upon the respective signature of the consent terms, for approval by the Ethics Committee.

From the collected answers, data were tabulated using statistical resources of the Microsoft Excel Program, then interpreted, for analysis and discussion.

RESULTS AND DISCUSSION

Initially, we verified the instruction level of each participant, amongst which 6% concluded their Elementary studies, 24% concluded their High School education

and 70% went through Higher education. Despite the high percentage of managers with higher education, none of them have specific education in their chosen field. This was also observed in the research by Meira and Kushano (2017), in the coastal region of the state of Paraná, and is in line with what Barbosa Filho (2010) wrote, when citing that the lack of professionals with specific training in management is not uncommon for the hotel industry, given that the number of professionals trained in the area is still insufficient for the existing demands.

Regarding the time of experience in hotel management, 52% of the managers answered that they had between 1 and 5 years, whilst 36% had between 6 and 10 years, and 12% over 10 years. In addition, we observed that a longer tenure in the position does not reverberate in environmental practices, given that the most active managers, when it came to actions, are those with less than 10 years of experience.

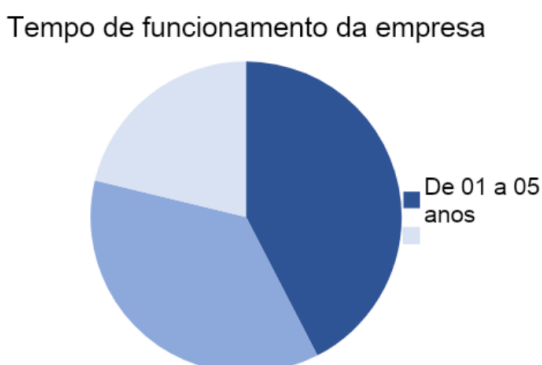
Figure 1 : Tenure time in Management - Hospitality



Source: Authors, 2022.

We observed a similarity between the time of management experience of the respondents and the time of operation of the companies (Figure 2). However, management time does not translate to the application of actions, as those who have higher education are not the majority when it comes to environmental management actions.

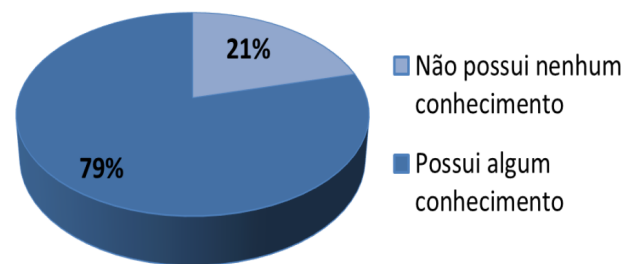
Figure 2: Time of operation of the companies



Source: Authors, 2022.

Regarding environmental management, 21% said they had no knowledge. Of the above percentage, 10% have no interest in acquiring knowledge in the area. Among those interviewed who claimed to have some knowledge about environmental management, 60% answered that their knowledge was acquired through professional experiences. The remaining 19% stated that their knowledge was obtained both from professional experiences and during training related to environmental management (Figure 3).

Figure 3 : Knowledge regarding Environmental Management



Source: Authors, 2022.

In this sense, 49% of managers claimed to practice some action related to environmental management. Therefore, 51% of respondents do not practice any environmental action in their companies due to lack of knowledge, lack of interest and lack of budget. Furthermore, it is evident that they are among the 60% who claimed to have some knowledge related to environmental management.

When asked about adopting actions to reduce energy consumption, 18% of managers responded negatively. Among other answers, we found that 27% use solar energy, 27% use energy efficient light bulbs and 21% apply controlled energy use.

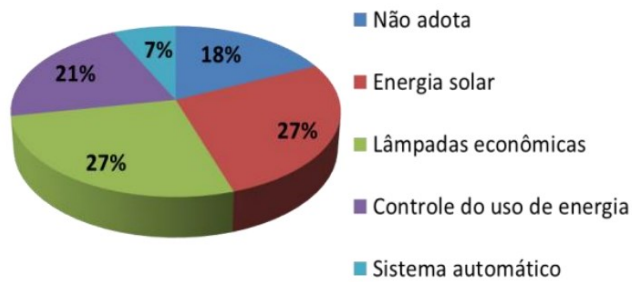
Likewise, according to Leyva and Parra (2021), the search for reductions through the use of solar panels and energy-saving light bulbs are actions verified in the management of national and foreign hotel companies operating in Cuba.

Responses such as reducing the use of air conditioning and using an automatic system with a magnetic card accounted for 7% of respondents.

When it comes to actions to reduce water consumption, 57% of respondents said they do not adopt any practice in this regard, while 12% responded they avoid waste, 10% did not know how to respond and 21% responded in different ways, including: they monitor consumption; are careful with leaks; encourage bathing in rivers; reuse water from washing machines; and, before washing dishes, remove excess "filth" to avoid unnecessary consumption.

Regarding management of effluents, 12% could not answer, 45% sent their effluents to the public sewage system, 33% use septic tanks, and 10% use sinks. As for gray water reuse actions, 54% of respondents said they did not reuse it and 30% did not know how to respond.

Figure 4: Adoption of measures to reduce energy use



Source: Authors, 2022.

A total of 15% managers claimed to reuse this water in domestic processes, particularly for washing clothes.

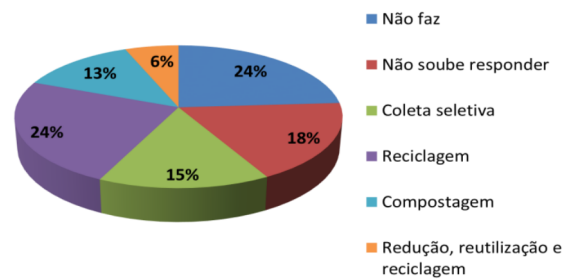
For the selection of suppliers based on environmental, sociocultural and/or economic criteria, 64% of the managers stated that they do not use such criteria, while 30% of the respondents declared that they apply any of these criteria when choosing their suppliers. A percentage of 6% did not know how to answer. For Barbosa et al. (2014), stakeholders have active and passive participation in economic activities of a company and, according to Hjort et al. (2016), are agents of the process, being able to influence and to be influenced in relation to institutional scopes.

Regarding the existence of a stimulus to the production of local food and handicrafts, 18% stated that they buy fruits and vegetables from Carolina producers, also allowing the sale of handicrafts in their companies. However, 82% of managers declared that there was no incentive for this practice.

Regarding environmental management-focused training for their employees, 76% of managers do not promote any training. For 64% of the interviewed managers, there are no obstacles to the application of environmental management tools; however, 36% answered that there are impediments, namely: financial resources and lack of knowledge about the subject. Research shows that training-related practices result in considerable actions for proenvironmental behavior and play a significant role in the environmental performance of hotels (Nisar, 2021). Given that knowledge, skills, and attitudes result in reduced consumption of water, energy, as well as reuse and recycling of solid waste (Elsaer et al., 2021).

Our results for this research showed that solid waste management is not carried out by 24% of managers. On the other hand, 15% perform waste sorting, 24% conduct recycling, and 13% use organic residues for fertilizers and animal food. Occasionally, with regard to the sorting of solid waste, which is considered elementary for the purpose of disposal and recycling, there is a reduced number of managers who, among their actions, practice it. Such attitude is not in line with the practices pointed out by hotel managers who participated in the research by Meira and Kushano (2017),

Figure 5 : Environmental management-focused training for employees



Source: Authors, 2022.

who replied that waste sorting was amongst their priorities.

Solid waste that is not recycled and/or reused is destined to dumpsters by 55% of respondents, while 30% of respondents said that their waste is collected by the municipality (dumpsite), although all waste in the municipality has the same destination.

Improper disposal of solid waste can cause social and environmental problems, such as threats to public health, pollution or contamination of air, water, and soil (Xu et al., 2022), in addition to the loss of biodiversity. Reducing the amount of produced waste and increasing the proportion of recycled waste are two important steps towards the achievement of environmental sustainability (Filimonau & Tochukwu, 2020).

Research reveals that proper management of solid waste can generate greater profitability and a better corporate image for lodging facilities, given that countless guests/clients are willing to pay more for eco-friendly products and services, such as accommodation in lodging facilities (Singh et al., 2014).

Finally, we found that 82% of the managers who participated in this research believe that practices related to environmental management can generate competitive advantage. Environmental actions, such as training managers and employees, or internal implementation of actions and strategies aimed at reducing consumption of water, energy, and other resources, become a differentiating factor, and are closely related to competitive advantage between organizations (Molina-Arozín et al., 2015).

CONCLUSION

From our literature review, the development of this study and the applicability of results, we managed to perceive that, in the Hotel sector of the city of Carolina, Maranhão, good practices and environmental actions are implemented in an attempt to minimize the impacts.

The general objective of this research was to analyze the main practices or "sustainable" actions developed in the lodging facilities of Carolina, a municipality located in the south of the state of Maranhão.

Our data showed, preliminarily, that part of the managers does not implement environmental actions, despite taking specific initiatives or actions for environmental improvement, namely: use of solar energy; use of energy-saving light bulbs; use of automated systems to activate/deactivate electronic equipment; use of eco-efficient practices against water waste; sorting and recycling of solid waste, despite a lack of proper final destination.

There was some difficulty in understanding, on the part of the interviewees, environmental management practices, bringing into attention that, although managers are aware of the issue, they still do not have sufficient clarity or guidance to embark on the path of environmental management, in line with the motto of "selling" the destination, that of ecological tourism.

The findings of this study bring important contributions to the literature and continuous training actions for managers. It was noticeable that they have trouble grasping environmental management practices; however, they occasionally take action.

Thus, the actions described include: using solar energy; using energy-saving light bulbs; having an automated system using a magnetic card; avoidance of water waste; sorting and recycling of solid waste. Regarding this last aspect, however, most waste is forwarded to irregular disposal units, called by the managers themselves as "dumpsters."

From the point of view of the applicability of the results of this research, we expect it to offer support for governmental or non-governmental programs.

In this context, there is the existence and identification of actions in favor of environmental management, focusing on solid waste generated by the hotel industry in the municipality of Carolina. Furthermore, we aim to contribute to the identification of elements of environmental management in the hotels included in this investigation, providing theoretical and scientific support for the search for actions that promote responsible tourism.

We believe that this research will allow for more knowledgeable analyses and verification of the interest of managers in the Hospitality sector in relation to the application of environmental management tools, in addition to organizing and planning actions for their application, thus effectively contributing to sustainability.

Therefore, our evidence showed that solid waste management occurs irregularly but with an important leap, since recycling is a part of environmental actions.

We must consider the importance of sustainability in the business world and the need to better understand how it is inserted in the Hospitality sector, as a search for sustainability, a constant search for ecological tourism. We are aware that sustainable Hospitality has shown relevant growth in recent years, since the concepts of sustainability are being applied in industries

and companies in order to minimize the environmental impacts that are caused by their activities, and to thus be able to reduce production costs, making their activities more sustainable.

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