IMPACTS OF COVID-19 PANDEMIC ON ECOTOURISM SEGMENT IN AMAZONAS STATE, BRAZIL

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Abstract

The COVID-19 pandemic has affected tourism worldwide. This paper examines the impacts of pandemic on companies and professionals related to ecotourism in the state of Amazonas, Brazil. For this purpose, we sent online structured questionnaire to workers in the sector, whose participation was voluntary and anonymous. We had 44 responses from seven macro-regions in the state, most of which were guides and workers in the market for over 15 years. For 91% of respondents, the pandemic totally affected personal or company turnover. Strategies to minimize impacts were adopted in 97% of cases, such as cancellation or rescheduling. The turnover forecast for the remainder of 2020 was very high for 38.6% of respondents. The budget recovery forecast is of at least two years for 43.2% of the cases. The professionals related to ecotourism in Amazonas had their activities affected and the perspective is for a slow recovery, resulting in vulnerability for the activity. Brazil's current image abroad, referring to the weak implementation of actions to mitigate the effects of the pandemic, represents a risk to the activity in Amazonas. Public policies are of utmost importance to recover the ecotourism and the valorization of the different actors and companies related to this tourist segment.

Key words: Amazon; Coronavirus; Social isolation; Protected area; Tourism.

IMPACTOS DA PANDEMIA DE COVID-19 NO SEGMENTO ECOTURÍSTICO NO ESTADO DO AMAZONAS, BRASIL

Resumo

A pandemia de COVID-19 afetou o turismo no mundo inteiro. Este artigo avalia os impactos da pandemia em empresas e profissionais relacionados ao ecoturismo no estado do Amazonas, Brasil. Para tanto, enviamos um questionário estruturado online para trabalhadores do setor, cuja participação foi voluntária e anônima. Obtivemos 44 respostas oriundas de sete macrorregiões do Estado, sendo a maioria composta por guias e trabalhadores atuantes no mercado há mais de 15 anos. Para 91% dos respondentes, a pandemia afetou totalmente o faturamento pessoal ou da empresa. Estratégias para minimizar os impactos foram adotadas em 97% dos casos, como cancelamento ou remarcação de data. A previsão de faturamento no restante de 2020 era muito alta para 38,6% dos respondentes. A previsão de recuperação orçamentária é de ao menos dois anos para 43,2% dos casos. Os profissionais ligados ao ecoturismo no Amazonas foram afetados em suas atividades e a perspectiva é de uma recuperação lenta, acarretando vulnerabilidade da atividade. A atual imagem do Brasil no exterior, referente à fraca implementação de ações mitigadoras dos efeitos da pandemia, representa um risco para a atividade no Amazonas. Políticas públicas são essenciais para a recuperação do ecoturismo e para a valorização dos diferentes atores e empreendimentos relacionados a este segmento turístico.

Palavras-chave: Amazônia. Coronavírus; Isolamento Social; Turismo; Unidade de Conservação.

IMPACTOS DE LA PANDEMIA DE COVID-19 EN EL SECTOR TURÍSTICO EN EL ESTADO DEL AMAZONAS, BRASIL

Resumen

La pandemia de COVID-19 ha afectado al turismo del mundo entero. Este artículo evalúa los impactos de la pandemia en empresas y profesionales del ecoturismo en el estado de Amazonas, Brasil. Para esto, enviamos un cuestionario estructurado online para trabajadores del sector, cuya participación fue anónima y voluntaria. Obtuvimos 44 respuestas procedentes de siete macrorregiones de Estado. La mayoría fue compuesta por guías y trabajadores activos en el mercado hace más de 15 años. Para el 91% de los encuestados la pandemia afectó totalmente la facturación personal o de la empresa. Estrategias para minimizar los impactos fueron adoptadas en el 97% de los casos, como la opción de cancelación o la alteración de fecha. Para el 38,6% de los encuestados la previsión de la facturación para el restante del 2020, era muy alta. La previsión de recuperación presupuestaria es de al menos dos años para el 43,2% de los casos. Los profesionales de ecoturismo en Amazonas fueron afectados en sus actividades y la perspectiva es de una lenta recuperación y una situación de vulnerabilidad. La actual imagen de Brasil en el exterior, referente a la escasa implementación de acciones mitigadoras de los efectos de la pandemia, representa un riesgo para las actividades en el Amazonas. Políticas públicas son esenciales para la recuperación del ecoturismo y para la valorización de los diferentes actores y empresas relacionados con este segmento turístico.

Palabras clave: Aislamiento social; Amazonas; Coronavirus; Turismo; Unidad de Conservación.

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1 INTRODUCTION

A few years ago, cities in Europe, such as Barcelona, Amsterdam and Venice, faced *overtourism or tourismphobia*. The main concern of the affected destinations was to manage the flow of tourism, which was increasingly growing, and its effects on cities, quality of life of local residents, and tourist experiences in an unacceptable way (UNWTO, 2018).

With the emerge of COVID-19, a disease caused by the new coronavirus (severe acute respiratory syndrome coronavirus—SARS-CoV-2), in December 2019 in the city of Wuhan, China, and its rapid dispersion in about 216 countries, areas or territories across the globe (WHO, 2019), the world tourism scenario has changed dramatically.

Our usually hypermobile society has stopped (Ioannides & Gyimóthy, 2020). The activities of tourism, accommodation and events were suspended when governments, to control the pandemic, closed borders, banned travel and crowds of people at events and public places, advising them to remain at home so that the public health system would not collapse (Higgins-Desbiolles, 2020).

The World Tourism Organization considers that the COVID-19 pandemic caused a 22% drop in international tourist arrivals during the first quarter of 2020. Comparing to the numbers for 2019, the crisis may reach percentages between 60% and 80% over the current year (OMT, 2020).

Although it may seem that tourism is of secondary importance in the face of the pandemic scenario, this segment has great economic importance for many countries around the world, supporting one in 10 jobs worldwide, and generating 10.3% of global GDP (Higgins-Desbiolles, 2020; WTTC, 2020). In thousands of locations, self-employed professionals and small, medium and large companies, which depend directly or indirectly on visitors, have suspended tourist operations and many of them may not be reopened (Ioannides & Gyimóthy, 2020).

In Brazil, the first case of COVID-19 was registered on February 25, 2020 and all states in the country were encouraged to adopt measures based on their infrastructure and regional characteristics, as well as to implement actions to combat the disease in their territories (Croda et al., 2020; Wang et al., 2020). Since then, tourism has abruptly decreased in the country, risking the livelihood of millions of people who depend directly or indirectly on this economic activity, considered one of the main sources of foreign exchange in several destinations.

Ecotourism, a segment of tourist activity that uses, in a sustainable way, natural and cultural heritage, encourages its conservation and seeks the formation of an environmental awareness with the interpretation of the environment, promoting the population's well-being (MinTur, 2010) was also affected by the COVID-19 pandemic.

In this segment, the crisis also came to be considered as unprecedented, as many ecotourism attractions were closed and the enterprises that work with accommodation, food and driving of visitors faced the dramatic decrease of their target audience. This scenario also affected the Amazon, a region of Brazil that is home to a rich socio-biodiversity and one of the main ecotourism destinations in the country.

Studies show the need for a balance between socio-cultural and environmental sustainability and economic stability (Goodwin, 1996; Fennell, 2001; Buckley et al., 2003). Times when specific and little-known diseases evolve require not only investigation on their health, environmental and political causes (Ventura et al., 2020), but also assessment on their socioeconomic impacts on human populations. Thus, considering that studies on the impact of COVID-19 on enterprises and professionals in the Amazon region need to be known to support qualified interventions, the question is: where are they, who are they, and how have the protagonists of ecotourism been affected by the pandemic?

In the prevailing scenario, this paper aims to analyze and discuss the impacts of the COVID-19 pandemic in different institutions and professionals related to ecotourism in the state of Amazonas, assessing the magnitude of these impacts and proposing strategies to minimize them.

2 LITERATURE REVIEW

In Brazil, the first suspected case of the novel coronavirus was diagnosed in late January, but the first confirmation of an infected person occurred only on February 26, in the city of São Paulo (Croda et al., 2020). Since then, several new cases have emerged, concentrated initially in the southeast, but spreading to the rest of the country in a short time. Amazonas was the first state to report a case of infection in the northern region, on March 13, in a person who had just arrived from England (Ministério da Saúde, 2021).

The novel coronavirus is transmitted from person to person through droplets released when coughing, sneezing or talking, especially when people are close to each other (WHO, 2020). The risk can be greater in closed, poorly ventilated environments and in crowds. There are indications that it can also be transmitted through contaminated surfaces (WHO, 2020).

Although there is no evidence of transmission of the virus inside aircrafts (Freedman & Wilder-Smith, 2020), it is known that the spread occurred after travel

by infected people, initially from Wuhan, and then by community transmissions within the countries themselves (Ministério da Saúde, 2021).

Concerned about the rapid spread of the disease, several countries started to take more restrictive measures to control COVID-19. Some European nations, for example, ordered the closure of schools, a ban or restriction on public events and a lockdown in mid-March 2020, in addition to suggesting the population should practice social distancing (Aquino et al., 2020). Brazil followed the same path, establishing federal and state regulations to reduce contact between people and suspend activities (Aquino et al., 2020; Silva et al., 2020).

Despite restrictive measures, all Brazilian states have experienced moments of collapse in their health network or have come very close to that (Andrade, 2020). In July 2020, Brazil went through the peak of confirmed cases of what would be the first wave of the pandemic in the country and, at that time, it was the second nation with the highest number of deaths, behind the United States (Ministério da Saúde, 2021). Images from Manaus, the city capital of Amazonas, traveled the world, showing an enormous number of burials of people who died as a result of COVID-19 (Noronha et al., 2020).

After a drop in the number of daily cases, suggesting that the pandemic could be ending in the country, contamination rose again in November 2020. Between January and February 2021, the country accumulated 30 days with a daily average of more than 1,000 deaths (G1, 2021). Some events were decisive for the upsurge of the pandemic in Brazil, among which the crowds resulting from city electoral campaigns and elections in November, as well as the holiday celebrations in December.

As the number of confirmed cases increased, and hospitals continued with their capacity for hospitalization to the limit and high rates of daily deaths, a dispute between health and the economy opened up. Part of society and government officials propagated those activities should return to normal. This began to occur in July, a time when new decrees and ordinances were published, easing restrictions on social isolation and resuming the functioning of shops, services and leisure establishments (Ortega & Orsini, 2020).

In Amazonas, the first official measures to combat COVID-19 were enacted on March 16, 2020, banning public events and partially closing educational institutions. A few days later, new ordinances and decrees were released, including the suspension of river, intercity and tourist transport (Leite et al., 2020; Silva et al., 2020). On March 17, the State Office for the Environment (SEMA) enacted Ordinance n. 32, suspending, for an indefinite period, any visitation to State Conservation Units. Five days later, the Ministry of the Environment, through the Chico Mendes Institute for Biodiversity Conservation (ICMBio), promulgated Ordinance n. 227, suspending visits to Federal Conservation Units. These were important measures to protect the traditional populations residing in these protected areas, especially in the state of Amazonas.

With the different restrictions imposed and the decrease in travel, mainly by air, tourism was one of the sectors most impacted in Brazil (G1, 2020). According to the National Civil Aviation Office (SNAC, 2020), domestic passenger traffic fell by around 95% between January to April 2020, resuming very slowly over the year. International demand was also severely affected.

The sum of the number of international passengers between April and December is less than the movement in January of the same year. In Manaus, the domestic movement of the airport was the lowest since 2006 and the international movement was the lowest since 2005, with numbers well below 2019 (SNAC, 2020).

3 METHODOLOGY

Using the free online Google Forms platform, a structured questionnaire was prepared, containing closed questions and divided into the following categories: (i) respondent or institution profile (area of expertise in ecotourism, institutional size, length of service, Amazonas region where they work); (ii) impacts of the pandemic (on turnover or personal budget, on the number of employees and their salaries, on the implementation of contracts or activities); (iii) strategies to minimize negative impacts (offers to attract customers, work in other areas, request for emergency government aid); and (iv) future economic expectations (turnover in the remaining months of 2020, post-pandemic turnover).

The questionnaire, which had voluntary and anonymous participation, was disseminated in the social media (Facebook and WhatsApp) and e-mail accounts, staying available to respondents for 15 days during the second half of May 2020.

We organized the respondents' answers in order to submit them to the relevant statistical analyses. Questions that allowed the respondent only one answer were analyzed using percentage calculations (descriptive statistics), and questions that allowed more than one answer were analyzed using their frequency of citations (number of times they were mentioned in the total of answers), following the model applied in other research in tourism (Vidal et al., 2013; 2019). The open-ended questions were standardized by categories that grouped the answers, making their interpretation easier (Bogdan & Biklen, 1994).

Responses related to the region of operation within the state of Amazonas were used to create a spatial frequency map using ArcGIS 10.4 software.

4 RESULTS

4.1 Respondent profile

The survey had 44 questionnaires filled out. Most respondents work as guides or drivers (38.6%), followed by those responsible for tourism agencies or operators (27.3%), means of accommodation (13.6%), ecotourism vessels (11.4%), leisure and entertainment enterprises (6.8%), and river and/or land transportation (2.3%).

Table 1: Respondent size in ecotourism in the state of Amazonas, Brazil.

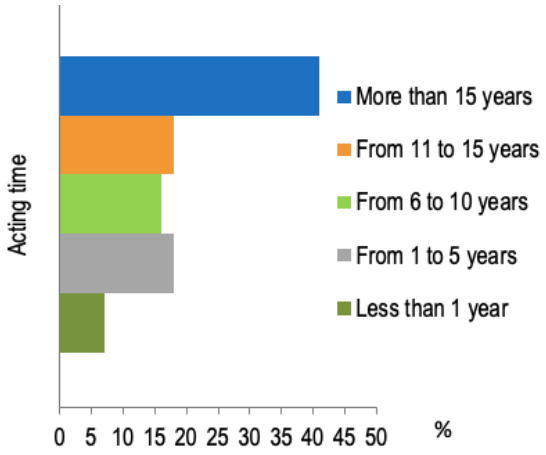
Respondent size	Definition	Proportion (%)
Self-employed	Guides without contract or employment	40.9
Micro-enterprise	Annual gross revenue of up to BRL 360,000	20.5
Individual Micro-entrepreneur	Annual gross revenue of up to BRL 81,000	18.2
Small-sized company	Annual gross revenue of up to BRL 4.8 million	15.8
Medium-sized company	Annual gross revenue of up to BRL 4.8 million, with up to 99 employees	2.3
Large company	Annual gross revenue above BRL 4.8 million, with 100 or more employees	2.3

Source: own elaboration.

We found that the majority of respondents was composed of self-employed professionals, followed by micro-enterprises, individual micro-entrepreneurs, small-sized companies, medium-sized companies, and large companies. Table 1 shows the different categories, their respective definitions and the proportion of their respondents.

Most professionals (41%) interviewed or their institutions have been working in ecotourism in the state of Amazonas for more than 15 years (Figure 1).

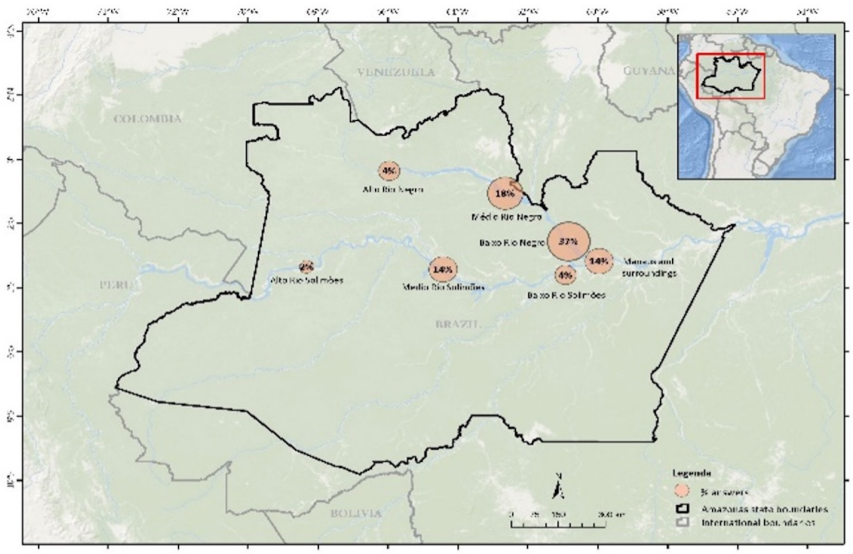
Figure 1: Length of service by the professional or his institution in ecotourism in the state of Amazonas, Brazil.



Source: own elaboration.

The main geographic regions of Amazonas where respondents work are Lower Negro River (37%), Middle Negro River (18%), Manaus and its immediate surroundings (14%), and Middle Solimões River (14%) (Figure 2). A small number of respondents said they work in other regions of the state (7%), but these were not identified, so they are not on the map.

Figure 2: Geographic regions indicated as areas of activity by ecotourism professionals in the state of Amazonas, Brazil.

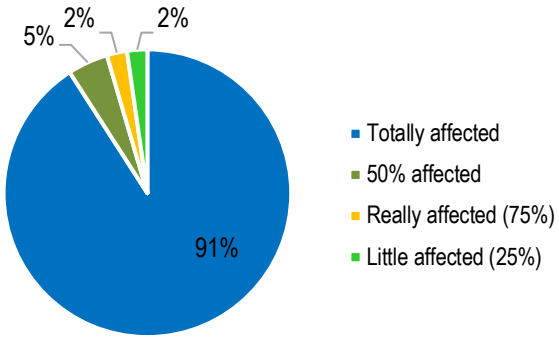


Source: own elaboration.

4.2 Pandemic impacts

Most respondents stated that the company's revenue or their personal budget (in the case of ecotourism guides) was totally affected due to the isolation measures resulting from the COVID-19 pandemic (Figure 3).

Figure 3: Level of impact of isolation measures resulting from the COVID-19 pandemic on business or personal revenue in ecotourism in the state of Amazonas, Brazil.



Source: own elaboration.

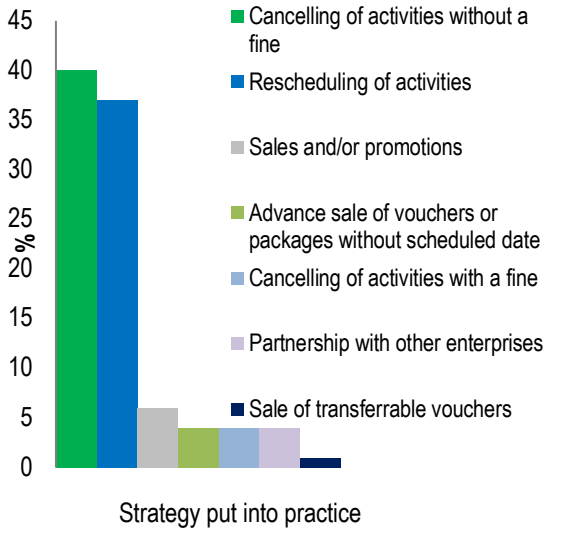
Most (75.8%) owners and administrators of enterprises related to this area stated that it was necessary to dismiss employees, suspend contracts, reduce workload/salary, or take other measures to contain expenses. Among these, most (84%) reported that these measures affected all employees or service providers, and some (16%) stated that the measures affected most of these actors (approximately three quarters of them). On the other hand, a smaller number of respondents (24.2%) stated that it was not necessary to contain expenses in a way that would affect the human resources under their administration.

When asked if it was necessary to close or suspend institutional activities, 53.1% answered that activities were temporarily or permanently suspended, 28.1% answered that they started to work remotely, and 18.8% answered that other strategies were implemented, such as reducing the team and/or working hours.

4.3 Strategies to minimize impacts

Most respondents (97.7%) stated that they developed at least one type of strategy to try to minimize impacts of the pandemic and thus attract or retain customers. The main strategies that these respondents developed were cancelling activities without a fine (39.7%) and rescheduling activities (37.2%) (Figure 4). Only 2.3% of respondents reported that they did not use any strategy to minimize negative impacts.

Figure 4: Strategies developed to minimize impacts of the pandemic on ecotourism in the state of Amazonas, Brazil.



Source: own elaboration.

A significant number of guides and drivers (82.8%) stated that, because of the pandemic, they needed to work in other areas to supplement their income; the other respondents (17.2%) responded negatively to the question. When asked if they needed to request the emergency aid provided by the Federal Government, most responded positively (85.2%).

4.4 Future economic expectations

When asked about the turnover or revenue forecast until the end of 2020, even though the pandemic remains, most participants of the survey stated that it would suffer a very high or high reduction. Only one respondent said he believed in an increase in turnover or revenue until December 2020 (Table 2).

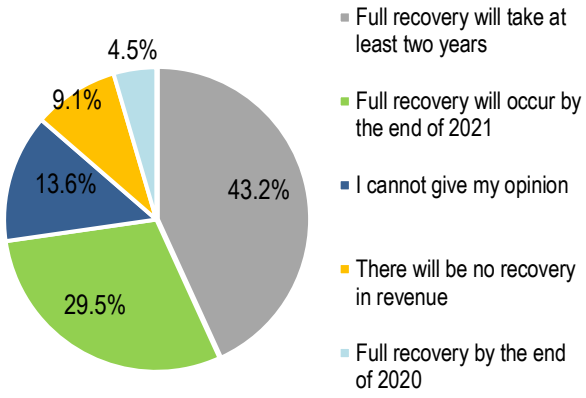
Table 2: Turnover or revenue forecast for the remainder of 2020, according to ecotourism professionals in the state of Amazonas, Brazil.

Change category	Change range	Proportion (%)
Reduction should be very high	Approximately 100%	38.6
Reduction should be high	Approximately 75%	36.5
Reduction should be medium	Approximately 50%	13.6
Reduction should be low	Approximately 25%	4.5
It will remain stable	No change in revenue	4.5
It is possible to increase	No identified range	2.3

Source: own elaboration

Considering a scenario after the end of the pandemic, most respondents believe the recovery of turnover or revenue will take at least two years, followed by those who believe that the recovery will occur by the end of 2021. Some respondents still cannot give their opinion, followed by others who say there will be no recovery in revenue, even after the end of the pandemic. On the other hand, the minority of respondents stated that they believe on a full recovery in revenue by the end of 2020 (Figure 5).

Figure 5: Estimated recovery of turnover or revenue after the end of the pandemic, according to ecotourism professionals in the state of Amazonas, Brazil.

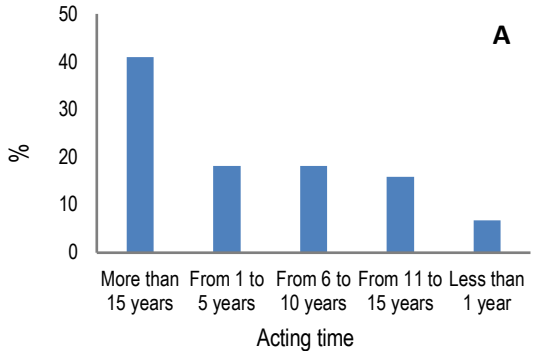


Source: own elaboration.

4.5 Diagnosis and prognosis for the group of self-employed workers

From the 44 respondents of the survey, most work as a self-employed guide or driver, with no employment or employment contract with travel agencies. Most respondents replied that they have been in this market for more than 15 years, that the effects of the pandemic had a full impact on revenue, and that the recovery should take at least two years (Figure 6).

Figure 6. Diagnosis of length of service, impact on revenue and recovery forecast for guides and autonomous drivers in the state of Amazonas, Brazil. A = Length of service; B = Impact on revenue; C = Recovery forecast.



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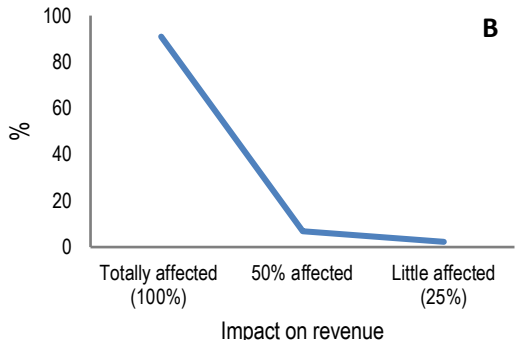

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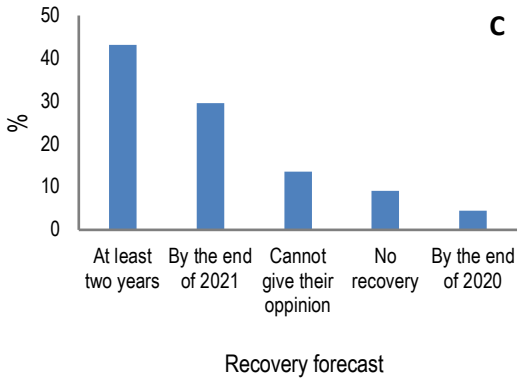

Source: own elaboration.

5 DISCUSSION

Most researchers related to ecotourism do not show the impacts that this segment can cause on the destination's cultural and ecological environments, and do not highlight the economic aspect (Chiutsi et al., 2011). However, several studies suggest that, although socio-cultural and environmental sustainability must be balanced, economic stability is of utmost importance in this context (Goodwin, 1996; Fennell, 2001; Buckley et al., 2003).

Major disasters, such as the COVID-19 pandemic, produce unimaginable socioeconomic changes. There are so many uncertainties at stake that we must prioritize public health, for example, in the face of other non-essential issues or productive activities and, in this case, tourism occupies the last place in the list of priorities (Romero-Padillha et al., 2020).

The crisis that societies around the world are experiencing today is not only due to the fact that the disease affects all countries of the globe, but also because of the saturation of information generated by social networks, transforming these societies of individualistic consumption into societies of fear (César Dachary, 2020).

The world stopped in early 2020 due to the Covid-19 pandemic, and signs of recovery over the current year are still incipient. The mainstream media highlighted the impacts resulting from the COVID-19 pandemic in several regions of the planet, and our study shows that ecotourism has been highly affected in the state of Amazonas and the Brazilian Amazon.

In Brazil, considered a developing country and one of the emerging economies in the world, tourism has a prominent position among income-generating activities. The Amazon, as it comprises the largest block of contiguous rain forests, the largest drainage basin in the world, an inestimable diversity of species, and an enormous cultural wealth, is one of the most visited Brazilian destinations by eco-tourists from different places (Oliveira et al., 2010; Macedo & Castello, 2015; Valsecchi et al., 2017).

After the peak in the number of tourists in 2014, Amazonas experienced a sharp drop in 2015 and a slight decrease in the following two years. In 2018, the number of tourists who visited the state increased again and this trend continued in 2019. But not only has the flow of tourists increased. Tourism companies reported an increase or stability in revenue (74%), number of customers (79%), and number of sales (76%) between 2018 and 2019 (Amazonastur, 2019), generating positive prospects for 2020.

Most respondents stated that they are self-employed guides and drivers, so this group is almost twice as large as the second (micro-companies) is. Medium-sized and large companies would be expected to have greater working capital and, therefore, feel less of the economic impacts, presenting conditions for a faster recovery after the regularization of ecotourism activity. On the other hand, these companies have higher fixed costs, mostly with payroll. The sudden and abrupt decrease in the number of tourists hindered any planning by these companies. Dismiss employees or suspend their contracts were some solutions they found to reduce costs.

Self-employed guides and drivers probably represent the group most economically susceptible to variation in the number of tourists, as the lack of activity directly affects the family's monthly income. It is necessary to consider that most of the actors in our sample do not have an employment relationship and, therefore, to perform their jobs, they depend on their own traditional knowledge, associated with the places where they live. It is this knowledge that combines with the growing demand for ecotourism activities by Brazilians and foreigners in the region.

Regarding the length of service, most respondents stated that for at least 15 years they would have been directly related to ecotourism. Companies or professionals who have been in business for longer, as they are consolidated in the market, are expected to be able to recover more quickly from the effects of the pandemic. However, any scenario of projected recovery at this time would be speculative, because, especially in Brazil—where public policies to control the spread of the virus are weak—, it is not possible to predict when ecotourism activities will be back to normal. In fact, most respondents said that it would take at least a year and a half for turnover to return to pre-pandemic levels.

Although the numbers of ecotourism in the Amazon are not accurate, regarding the number of tourists and where they are from, as well as the preferred places to practice the activity, the Amazon is essential to promote the sustainable development of the region (Alves et al. 2013). In the state of Amazonas, ecotourism activities are largely focused on observing the wildlife, contemplating the nature and having contact with residents of traditional communities (MinTur, 2010; Coelho, 2013; D'Cruze et al., 2017; Santos et al., 2019).

Most of the respondents stated that they work in Lower Negro River, a region that includes a mosaic of protected areas formed by 12 Conservation Units at the federal, state and municipal levels, covering an area of 7,316,799 hectares, inside the municipalities of Manaus, Novo Airão, Iranduba, Manacapuru, Presidente Figueiredo, and Barcelos (ICMBIO, 2017). Except for the free economic zone of Manaus, the Lower Negro River region has few activities economically consolidated.

Moreover, the expressive amount of Full Protection Conservation Units restricts direct exploration activities such as fishing, livestock and logging, which generates great expectations in tourism, especially in interactions with Amazon river dolphins (*Inia geoffrensis*), one of the main attractions of local ecotourism (Vidal et al., 2017). For residents of Novo Airão, the gateway city to the Anavilhanas National Park, interactive tourism with dolphins is an essential activity for the local economy as it attracts visitors and generates local income (Vidal et al., 2019).

In addition to the interaction with the local fauna, the Lower Negro River region has various characteristics that provide an intense flow of visitation both in the Conservation Units for Sustainable Use and in those of Full Protection, which are: scenic beauty; the proximity of these areas to the urban center of Manaus; the formation of beaches during the drought of rivers. All these elements are the base of ecotourism and, in addition to these characteristics, we can also find hotels, lodges, and inns that offer accommodation to the most diverse audiences, not to mention the local communities and their cultural wealth, among other attractions (Simonetti et al., 2018).

The Middle Solimões River region, where some respondents work, shelters the city of Tefé, the gateway to the Mamirauá Sustainable Development Reserve (RDS), a protected area that receives tourists from all over the world who seek to know and interact with the rich local socio-biodiversity (Peralta et al., 2016). Ecotourism activities at Mamirauá RDS became examples for other Conservation Units in the region, such as the Tefé National Forest and Amanã RDS, which started to create their own ecotourism itineraries based on local attractions.

Most (91%) administrators, managers, and/or owners of enterprises related to ecotourism stated that the company's revenue or personal budget was totally affected by the social isolation measures due to the COVID-19 pandemic. Consequently, most respondents had to dismiss employees, suspend contracts, and/or reduce workload/salary (64%). For more than half of the respondents (53%), activities were temporarily or permanently suspended.

In developing countries, tourism is one of the largest export sectors, and also the primary source of earnings from foreign sources in 46 of the 49 least developed countries (UNWTO, 2012). Thus, in many regions of the planet, tourism can be considered one of the main means of voluntary transfer of resources from the rich to the poor (Alves et al., 2013).

In Amazonas, one of the main Brazilian ecotourism destinations, the flow of visitors decreased significantly due to the fear of contagion from COVID-19, the protection measures implemented, such as social isolation, and the suspension of several activities considered non-essential. Although it does not consider the airport of Manaus, capital of Amazonas, a study by the National Confederation of Trade in Goods, Services and Tourism (CNC, 2020) showed a decrease of up to 93% in the flow of passengers at the 16 largest airports in Brazil at the end of March.

Most of these airports are important centers that send tourists to Amazonas, or connect national and international flights to Manaus, the largest receptive center for visitors in the state. Complementing the isolation scenario, the state government suspended river transportation for passengers—essential for the displacement of local residents and visitors between municipalities and tourist attractions (State Decree 42.330/2020).

In relation to the large number of self-employed guides and drivers who needed to request emergency aid from the Federal Government, it is important to consider that this number could be even higher. The difficulty in accessing information, the absence of Caixa Econômica Federal branches in several municipalities, the poor-quality internet, and the low availability of compatible cell phones (smartphones) with online technology may have prevented many of these actors from requesting governmental aid. Our results still suggest labor difficulties for self-employed workers in the sector, as considering that a large portion of them do not have an employment contract, they consequently do not have labor rights, such as severance pay, access to unemployment insurance, and a guarantee fund for length of service (Brazilian FGTS).

Several countries plagued by the COVID-19 pandemic have been faced with the health-economy dichotomy (César Dachary *et al*., 2020). In general, support for small and medium-sized companies was insufficient to enable them to get through the crisis, which is why the asymmetries in the class of tourism workers have been widened. In this way, the dichotomy in the post-pandemic will be to restructure society to balance or to follow the current course of impoverishment and elimination of human beings as direct actors in society (César Dachary *et al*., 2020).

In the face of a very unfavorable diagnosis for the ecotourism in Amazonas, a promising prognosis in the short term is not expected. Most respondents (75%) considered the tendency for a very high (approximately 100%) or high (approximately 75%) reduction in turnover or revenue for the remainder of 2020. In a survey conducted by the State Tourism Company of Amazonas (Amazonastur, 2019), tourism companies and professionals in this state were very optimistic about 2020. Most respondents said they expected an increase in the number of customers (85%), in the market in which they operate (77%), turnover (85%), profit margins (82%), and the number of sales (83%). With the pandemic, this scenario is unlikely to be achieved.

Turnover recovery is expected to occur in at least two years for most (43%) respondents. As in other pandemics, COVID-19 affected the entire tourism chain in most of the world, from aviation to food services. It is almost a consensus that we cannot estimate the time for tourism recovery and how it will occur (Gossling et al., 2020, Janér et al., 2020).

Considering all the characteristic activities of tourism, Fundação Getúlio Vargas predicts that the level of tourism production will reach normality only in November 2021 (FGV/EBAPE, 2020). The same study shows that hotels and inns are expected to reach the normal level of production in December 2021, while agencies and operators only in January 2022. Both of them fluctuating after the resumption.

We believe that the group represented by self-employed guides and drivers is the most vulnerable group in ecotourism in the state. It lacks public policies to support these workers and most of them are not related to any type of association or union representing

them. The abrupt drop-in activities during the pandemic caused not only companies to close their doors and employees to be dismissed, but also several guides and drivers, most of them with at least 15 years of experience, were left without income or future prospects.

The recovery of tourism globally should occur, mainly, with the resumption of domestic tourism (Gossling et al., 2002; Hall et al., 2020). In Amazonas, the target audience of tourism companies is mostly represented (72.31%) by the municipal, state, regional and national spheres (Amazonastur, 2020). This could be a key factor to recover tourism in the state.

However, it is necessary to understand the visitor's choice. Janér (2012) showed a Maslow pyramid, modified for tourism, ranking the tourist's choice for destination. The bottom of the pyramid and the first aspects for decision are health and safety issues. Epidemics or outbreaks of diseases, violence and terrorism are the first points that the visitor considers.

The Amazon already suffers from the stigma of tropical diseases, such as malaria—which records 400,000 to 500,000 cases annually (Katsuragawa et al., 2008)—, and the advance of COVID-19 in the region contributes to negatively impact the arrival of visitors.

When asked about the main threats to the sector in the next three years, tourism companies in Amazonas considered public security (89.23%) and health issues (70.77%). Interestingly, the same survey showed that the negative propaganda of Amazonas (73.85%) and Brazil (76.93%) abroad are also sensible threats (Amazonastur, 2020). This information corroborates Janer's (2012) statement.

Tourism is of great importance in economic terms, both nationally and internationally, and it is impossible to return to the “normality” of pre-Covid growth, either because of the short- and medium-term consequences of the health crisis, or because of the global economic crisis that the pandemic triggered, in the long term (Romero-Padilla et al., 2020). Because the virus puts human health at risk, the future of tourism remains diffuse, dark and uncertain (Pillai et al., 2021).

6 FINAL CONSIDERATIONS

The impact of the COVID-19 pandemic on the world economy has been huge and the forecasts for tourism—destinations, hotels, restaurants, transportation, operators, tour guides—are for a slow and uncertain recovery, and, for many, 2020 was a lost year (Janér et al., 2020). This leads us to believe in a real danger regarding the dependence of some communities and regions on the activity.

In the state of Amazonas, a large number of owners and administrators of ecotourism enterprises dismissed employees, reduced workload/salary, or token other measures to contain expenses. To minimize impacts of the pandemic and thus attract or retain customers, many activities were temporarily or permanently suspended, and a significant number of guides and drivers needed to work in other areas to supplement their income.

It is difficult to consider any recovery scenario for ecotourism in Amazonas. We need to consider the image that Brazil has shown abroad, especially the way in which the government's measures to mitigate the effects of the pandemic have been carried out, associated with the lack of structure in the public health system and the exchange of three ministers of health during the peak of contamination by COVID-19.

Negative effects on ecotourism and tourism in general will be noted for many years, but the moment provides no evidence for assertive conclusions. To organize collaborative operations in different branches (such guides and drivers, accommodation, transportation, and food) is something that might assist in the financial management of ecotourism professionals and in leveraging activities (OECD, 2020).

Government intervention, by developing a social security net, should be a priority to tackle the challenges of tourism (Higgins-Desbiolles, 2020). In view of this scenario, we consider that a more targeted action by the Ministry of Tourism in the state of Amazonas, one of the ecotourism hubs in Brazil, would be welcome, such as promoting attractions at national and international levels, as well as the appreciation of traditional peoples and their activities.

This situation proves that the sudden suspension of the various activities of tourism and, in this case, of ecotourism, is a threat with very serious social and economic consequences and even though companies are perceived as centers for the dissemination of revenues, COVID-19 showed the flaws in the tourism segment that must be seriously revised.

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