


## Mobility in times of Covid-19: Effects of immobility on air transport

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### ABSTRACT

The year 2020 brought with it several changes in society as a result of the emergence of the pandemic caused by the new Corona Virus (SARS CoV-2), initially an epidemic located in the province of Wuhan in China, but which quickly spread to the whole world, becoming a pandemic that has caused thousands of deaths, impacts on human life and economy of most countries around the globe. Like

many sectors of the world economy, the airline industry is facing a severe economic crisis in the pandemic scenario due to travel restrictions (physical immobility) and border closures around the world. Based on the current situation experienced by air transport, this study aims to verify how the restrictions of physical displacement of individuals in the current pandemic scenario have impacted the Brazilian air industry through bibliographic research. As a result, Brazilian air transport has lost a significant number of passengers and that, although it is in a moment of crisis, it will need to devise strategies to survive the pandemic chaos and invest in adapting to the post-pandemic scenario.

**Keywords:** Pandemic, Mobilities, Tourism, Airports.

## 1 INTRODUCTION

The year 2020 brought with it several changes in society as a result of the emergence of the pandemic caused by the Corona Virus (SARS CoV-2), initially an epidemic located in the province of Wuhan in China, identified at the end of 2019, but which quickly spread to the whole world, becoming a pandemic that has caused thousands of deaths, impacts on human life and economy of most countries around the globe.

In addition to the millions of lives lost due to the disease, several sectors of the economy have suffered great losses, mainly due to border blockades and social isolation, measures that seek to reduce the number of contagion and flatten the contagion curve, which overload the health system (IACUS et al, 2020). Because of the mandatory isolation, mobility, purchasing power, employment opportunities, including the right to come and go have been drastically reduced. The order is for everyone to stay at home, a factor that contributes to the reduction of contagion, however it reinforces the existing inequalities in society, such as Cheibub and Freitas (2020), among other authors, as well as human egoism.

Among the most affected sectors, the air and tourism sectors stand out. Panosso Netto et al. (2020), Coelho and Mayer (2020), Mecca and Gedoz (2020) among other authors, show in their studies the fragility of the tourism sector in the face of external problems. For these authors, tourism, one of the first sectors to be stopped, has no return forecast, which implies job losses and impact on the entire

production chain, such as hotels, restaurants and air transport, especially in regions that have tourism as the main economic activity (PANOSSO et al, 2020). Rodrigues (2020), as well as other authors, argue that air transport and tourism were responsible for rapidly spreading the virus to the whole world by providing displacement of people.

Cruz (2020) argues that the airline industry has already been going through several crises before the pandemic, such as the price of kerosene for aviation, sensitive to the fluctuations of oil activity. The loss of thousands of passengers traveling daily severely impacts the financial stability of the sector, since it needs large investments to function. With aircraft on the ground, unable to carry passengers, airlines find themselves at risk of bankruptcy, especially in Brazil.

Based on the current situation experienced by air transport, this study aims to verify how the restrictions of physical displacement of individuals in the current pandemic scenario have impacted the Brazilian air industry through a bibliographic research.

## **2 PANDEMIC AND ITS IMPLICATIONS ON SOCIETY**

Specifically on March 11, 2020, COVID-19 was declared a pandemic by the World Health Organization (WHO). Oliveira Neto et al (2020) explain that the pandemic occurs when a new disease or virus crosses the borders of the country in which it originally arose, contaminating individuals from other nations who are not immune to the disease. Since the pandemic began, the world has been going through days of uncertainty due to the lack of knowledge of the disease, treatment and the race to find a safe and effective immunizer in order to reduce the number of infected by the virus, the deaths and finally manage, as a society, to return to "normal".

For Coelho and Mayer (2020), this pandemic has been "the largest health emergency in recent history" (p. 3701). Thousands of new cases of infection and new deaths are counted every day, causing chaos in the health system. On March 9, 2021, Brazil recorded 1,954 deaths in 24 hours (G1, 2021), in addition to several people waiting for a vacancy for an Intensive Care Unit (ICU) bed.

Oliveira Neto et al (2020) explain that the displacement of infected people and objects facilitates the spread of a disease throughout the world, a factor that is possible thanks to the facilities arising from globalization and growth of mobility, which for De Sá (2020), "cooperated with the virus, which invaded and crossed borders without permission and without consent" (p. 2). Panosso et al (2020), recall that in 2003 the coronavirus (SARS CoV-1), also of Chinese origin, spread to 37 countries through international travel. For this reason, one of the first actions of countries in the face of the pandemic was to close their borders and prevent individuals from other nations from entering their countries, which drastically decreased tourist travel, business, visits to family members, among others.

In an attempt to contain the spread of the virus, governments around the world have been enforcing social distancing measures, urging people to stay home, as well as adopting mask-wearing and distancing of at least 2 meters from one person to another when necessary to be outside the home. In this reality, borders, tourist activity and various establishments needed to have their doors closed, such as universities, companies and commerce, resulting in considerable economic losses for these sectors. In case of non-compliance, fines would be imposed. Over the course of 2020, these measures were being relaxed, a factor that contributed to the increase in the number of infected cases.

With travel restrictions, people having to work from home, no leisure and entertainment options on the streets and commerce and many studying from home, society has been going through delicate times. In addition to the economic crisis caused by the pandemic scenario, polarization of society in relation to social isolation, this pandemic has highlighted the inequalities already existing in society, as well as human egoism, since there are several people who do not respect the safety measures against the virus, putting their health at risk, as well as other people. In addition, this selfishness is made explicit when opening the news or social networks. While some strive to stay in their homes, celebrities continue to travel to beautiful places, attend parties, among others, which corroborates the idea of Cheibub and Freitas (2020):

In this "landscape", socioeconomic classes A and B (occasionally) enjoy the beach, the waterfront, the parks, travel and spread, in addition to the virus, alienation, ignorance, lack of citizenship-solidarity and exploitation of the working class, forcing a significant portion to move on public transport without proper social distancing to work in (even more) precarious conditions (p. 450).

In this scenario described by the authors, the concept of the mobility paradigm of Sheller and Urry (2006) is identified, which, summarized by Araújo and Godoy (2016), "is when the mobility of some occurs at the expense of the immobility (and contamination) of others" (n.p.). Those who are leaving home (furniture) are generating demands so that others have to leave home and stay immobile in their jobs, exposed to risks, to meet these demands.

Cheibub and Freitas (2020) reveal the various forms of inequality that are being highlighted in this context. For the authors, "social isolation as a coronavirus prevention measure has proven to be a privilege in Brazil" (p. 460). First, the fact of the need to stay at home is questioned, which has become a multifunctional space accumulating the function of residence, work and place of leisure. During the time of isolation, most of the leisure options are linked to the internet, home pool, games, among others. But how many poorer people have this vast option in their homes? How many people in Brazil have quality internet or cable TV to enjoy their idle time, without being able to be on the street? For the authors, access to the internet and leisure spaces, such as shopping malls, are unequal. Carneiro

and Allis (2021) reinforce by arguing that the mobilities (physical, virtual, among others) are not equal for everyone.

Another criticism of Cheibub and Freitas is related to the inequality that occurs due to work, an idea reinforced by De Paula and Allis (2020). While some enjoy the possibility of working from home (and go for a walk), many others need to go to the streets to risk contaminating themselves and their families so that these others can stay at home, like food delivery people, since delivery orders have grown significantly at the time of stricter isolation.

## 2.1 PANDEMIC AND ITS IMPLICATIONS FOR TOURISM

If on the one hand there has been growth of some economic sectors due to physical immobility, such as e-commerce, on the other hand several other sectors of the world economy have suffered significant economic impacts, such as tourism and air transport, since both are dependent on the physical movement of people. According to the World Tourism Organization (UNWTO) (2021), by March 2020 the world had already lost 67 million international entries and about 80 billion dollars of revenue from tourism. In Brazil, tourism corresponds to 3.71% of GDP and employs more than 7 million Brazilians (MECCA and GEDOZ, 2020), which will inevitably present significant falls.

Tourism, as well as air transport, was one of the first sectors to stop with the arrival of the pandemic (MECCA and GEDOZ, 2020), and although nations are already immunizing their citizens, there is no forecast of a quick return to the numbers of tourists transiting the globe as in 2019. For Cheibub and Freitas (2020), De Sá (2020) and Cruz (2020), tourism was an important vector for the spread of the virus around the world, due to the mobility of people.

Sheller and Urry (2006), Allis and De Paula (2020) as well as Carneiro and Allis (2021) argue that mobility goes beyond physical displacements. For Carneiro and Allis (2020), it is possible to do tourism without the need for displacement, and this activity is made possible through the internet, by imaginative mobility, widely used in this pandemic period, according to them. However, it is known that this modality does not generate significant economic impacts compared to conventional tourism, which includes displacement. Coelho and Mayer (2020) corroborate by arguing that not all tourism businesses can be offered to the customer online. It is only possible for some activities, such as sales, administrative activities, and operational support.

With the restriction of tourist activity in the pandemic, places that previously suffered from overtourism (excess of tourists in a locality), now suffer from the stagnation of the sector, as can be observed in the work of Panosso et al (2020), entitled "From Overtourism to stagnation". For these authors, as well as Cruz (2020), the negative effects of the absence of tourism will not be felt equally in the locals. The destinations that most depended economically on the tourist activity will suffer more

expressively, such as Spain, Italy, France, some Brazilian destinations such as Maragogi, Jericoacoara, Búzios, Bonito, among others.

From this difficult phase, Panosso et al (2020), as well as Mecca and Gedoz (2020) emphasize the need for learning in relation to the sector. Using tourism as the main economy of the locality is not recommended, since tourism is a sector vulnerable to political, economic, exchange rate changes, seasonality, crises in the production chain, terrorism, natural disasters, as well as epidemics and pandemics. It is necessary to recognize, value and work on economic alternatives.

### **3 IMPACTS OF THE PANDEMIC ON BRAZILIAN AIR TRANSPORT**

Air transport is extremely important for the expansion of tourism worldwide, because, in addition to the possibility of reducing distances quickly, places that were previously difficult to access have become accessible (GOMEZ, 2014). Teles and Sarmiento (2012) point out that in 2008 more than 40% of tourist trips used air transport. A decade later, according to data from the World Tourism Organization (UNWTO), this percentage has increased to 58% (UNWTO, 2020). Teles and Sarmiento (2012) They understand that the relationship between the development of tourism and air transport is so clear that it is difficult to disassociate them.

Giraldo-Velásquez et al. (2016) go further. For them, air transport is what has contributed most to the broad globalization of travel and, to a large extent, to the economic growth of the planet, since the benefits generated by it expand to other sectors of society, such as trade, cargo transportation, food (ALAEERAD and KHOSHNOOD, 2016) and, in the current pandemic scenario established in 2020, of medicines, patients and the vaccine against COVID-19, all of which require speed and safety in displacement, often facing great distances between origin and destination.

On the other hand, because of this ease of rapid movement and the possibility of accessing several locations, air transport was responsible, as well as tourism, for the emergence of the pandemic, because it was through it that infected people and objects, even without knowing it, left their locations carrying the virus to hundreds of others (RODRIGUES, 2020; OLIVEIRA NETO et al, 2020). Panosso et al (2020) recall that in 1968 and 1965, it was through air transport that the Hong Kong flu (influenza) crossed borders and infected thousands of people.

In relation to Brazil, Rodrigues (2020) analyzes that the places that had the most infected people were those that maintained the airflow and that part of the "fault" of this mass contamination in the world, was the lack of an emergency plan for the global air sector, which should have been created by IATA and ICAO.

For this reason, since the beginning of the pandemic, the airline industry has operated on the basis of various restrictions in order to control the spread of the virus. According to Carneiro and Allis

(2021), by April 2020 all countries had already created travel restrictions, which will be relaxed according to the decrease in cases of the disease (KOUR et al, 2020), a factor that exposes the sector to financial crises. Allis and De Paula (2020) point out that in April 2020, there was an 80% drop in international flights, with an expected loss of US\$ 84.4 billion by the end of the year. According to these authors, the sector is expected to reach the level of 2019 only in 2023-2024.

Because they are sectors that complement each other, as well as tourism, the airline industry was extremely economically compromised with the arrival of the pandemic, which imposed the closure of borders and impediment of tourist travel, which move more than half of air demand. Cruz (2020) argues that although the tourism sector is experiencing difficulties in this period, the airline industry was already facing crises before the pandemic, such as the price of kerosene for aviation, sensitive to the fluctuations of oil activity and the high costs to maintain itself. The loss of thousands of passengers traveling daily severely impacts the financial stability of the sector, since it needs large investments to function. With aircraft on the ground, unable to carry passengers, airlines find themselves at risk of bankruptcy, especially in Brazil.

As an example of difficulties, the author cites the Brazilian airlines LATAM and Avianca, which already had difficulties to maintain themselves, at the moment they are already in the process of judicial reorganization, unlike the United States. In this country, former President Donald Trump created the Aid, Relief and Economic Security Act, signed into law on March 27, 2020 (Panosso et al, 2020) with the aim of helping several areas, with the guarantee that the benefited companies would not lay off their employees until September of the same year. Cruz (2020) reports that an initial aid of 25 billion was granted to U.S. companies to maintain themselves.

In relation to airports, large real estate structures that require thousands of people to operate it (SHELLER and URRY, 2006), investment in high technology and, at the present time, sanitary adaptations demanded by the pandemic, continue to work, although travel has been reduced, since air transport also operates in other sectors of society. If these are working, it is still necessary to bear the same expenses, which can be a financial risk, given that fewer companies traveling, results in fewer fees paid to the airport. Fewer passengers, fewer non-airport fees<sup>1</sup> collected through the complementary services offered on the airport site.

In Brazil, the country's main airports suffered exorbitant drops in passengers in 2020 (table 1). In addition, several foreign airlines have stopped flying to Brazil, which results in large monetary losses for the airport.

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<sup>1</sup> Revenues from the concession of airport space for the allocation of shops, parking, food and beverage establishments, advertising, among others.

Table 1: Passenger movements in 2019 and 2020

<b>Airport</b>	<b>Mov. pax 2019</b>	<b>Mov. pax 2020</b>	<b>%<sup>2</sup></b>
Guarulhos - GRU	43.002.119	20.332.520	- 43,9
Brasilia - BSB	16.727.177	7.848.297	- 46,9
Galleon - GIG	13.507.881	4.635.123	- 34,3
Confins - CNF	111.198.78	48.119.42	- 43,27
Viracopos - VCP	10.585.018	73.648	- 0,69

In the table, the busiest Brazilian airports were selected, with the exception of Santos Dumont – SDU and Congonhas – CGH, which did not find data. It is noticed that the airport of Guarulhos, the busiest in Brazil, lost almost half of its annual demand, as well as the airport of Brasília and Confins. The airport that suffered the least loss of passenger movement in the pandemic period was Viracopos.

These significant losses result in large economic gaps for airport administrations, which require high investment to operate, and in the current conjuncture, do not have the expected return. The account does not close, which results in losses. For this reason, Kour et al (2020) understand that in these crises airports are extremely affected, and it is necessary to react and adapt services according to the new reality.

#### **4 FINAL CONSIDERATIONS**

The year 2020 brought with it economic and social challenges, which are extending into the year 2021. Even with the discovery of vaccines against the Chinese virus, the numbers of daily deaths, as well as of infected people, do not stop growing, which, in addition to the sadness for the significant loss of so many lives around the world, postpones the end of the economic and social crisis that the world is experiencing.

Several sectors of the economy are suffering from the restrictions imposed by governments in order to contain the spread of the virus, especially with regard to social isolation, closure of commercial establishments, service, leisure, beyond borders, which make it impossible to travel tourists, visit relatives, dream exchanges, among others. The moment demands that everyone stay at home, despite the social discomfort this causes.

Among the most affected sectors, tourism and air transport stand out, the latter being even more expressive. According to Panrotas (2021), the airline industry was the most affected by this crisis in the year 2020, which has extended to 2021, since there is no prediction, no matter how hard scholars try, for everything to return to "normal". Because it is a sector that requires large investments, proportionally there are risks of losses during crises.

Several authors have sought to understand this moment and to pass, through their studies, forecasts that can contribute to the planning of future actions to reduce the significant losses that worry

<sup>2</sup> The approximation was used.

entrepreneurs and that are responsible for the closure of small and large companies in the market. However, although this chaos affects the whole society with job losses, financial losses for entrepreneurs, among others, it is necessary, as challenging as it may seem, to care about human life, as Cheibub and Freitas (2020) point out.

By the end of 2020, some activities were already being resumed. The return of tourist movement, opening of bars, malls, and beaches, which resulted in a new wave of COVID-19, with numbers of deaths and infections like the beginning of the pandemic.

As understood in this paper, air transport has been drastically affected by the pandemic, however, even with reduced capacity, it has worked. Airlines have been flying and airports are open daily, which exposes workers to the daily risk of contamination. That is, for tourists (mobile), eager to return to travel can do so, workers (real estate) need to expose themselves to the virus. It is necessary that before the yearning for the return of activities and consequently of the profits arising from them, lives are prioritized.

Just like tourism, it is possible to realize that the predictions of return of the "normal" movement of air transport are not immediate. With such significant loss figures, it will take a few years to recover the same movement experienced in 2019. Until then, air transport will have to create strategies to alleviate the effects of the crisis, as well as adapt to the post-pandemic scenario, through more effective health policies and action plans in case of emergence of new health crises (RODRIGUES, 2020), in order to quickly control the spread of a disease around the world.

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