



Category: Finance, Business, Management, Economics and Accounting

ORIGINAL

Consequences of COVID-19 on aviation industry: a menace to global airlines

Consecuencias del COVID-19 en la industria aviación: una amenaza para las aerolíneas mundiales

Srividya Iyengar¹ , R. Venkatesh² 

¹Research Scholar, VIT Business Scholar, Vellore Institute of Technology, Chennai, India.

²Professor - Higher Academic Grade, VIT Business Scholar, Vellore Institute of Technology, Chennai, India.

Cite as: Iyengar MS, R DV. Consequences of COVID-19 on aviation industry: a menace to global airlines. Salud, Ciencia y Tecnología - Serie de Conferencias. 2024; 3:687. <https://doi.org/10.56294/sctconf2024687>

Submitted: 09-12-2023

Revised: 12-03-2024

Accepted: 05-05-2024

Published: 06-05-2024

Editor: Dr. William Castillo-González 

Corresponding author: Dr. R. Venkatesh 

ABSTRACT

Introduction: the aviation industry has been considered one of the major contributors to the economy of nations for several decades.

Objective: as a sub-sector of the aviation industry, airlines are considered the fastest mode of transportation for passengers and cargo across the globe.

Material and Method: since its invention, airlines have served millions of people to move from one country to another as well as within the country.

Results: despite natural calamities and global war affairs, the airline industry has achieved immense growth in recent decades. In addition to the progress of airlines, coronavirus disease 2019 (COVID-19) has become a major hindrance to providing services to people around the world. Due to the rapid spread of deadly diseases, several airline firms have halted their air travel services in many parts of the world.

Conclusion: as lockdowns and travel restrictions were enforced, this article examines the crisis of the airline industry after the onset of the COVID-19 pandemic.

Keywords: Coronavirus; Aviation Industry; Airlines; Travel Restrictions.

RESUMEN

Introducción: la industria de la aviación se considera uno de los principales contribuyentes a la economía de las naciones desde hace varias décadas.

Objetivo: como subsector de la industria de la aviación, las aerolíneas se consideran el modo de transporte más rápido para pasajeros y carga en todo el mundo.

Material y método: desde su invención, las aerolíneas han servido a millones de personas para trasladarse de un país a otro, así como dentro del propio país.

Resultados: a pesar de las calamidades naturales y los asuntos bélicos mundiales, la industria aérea ha logrado un inmenso crecimiento en las últimas décadas. Además del progreso de las aerolíneas, la enfermedad por coronavirus 2019 (COVID-19) se ha convertido en un gran obstáculo para la prestación de servicios a personas de todo el mundo. Debido a la rápida propagación de enfermedades mortales, varias firmas de aerolíneas han detenido sus servicios de viajes aéreos en muchas partes del mundo.

Conclusiones: en este artículo se examina la crisis de la industria aérea tras el inicio de la pandemia de COVID-19, debido a la imposición de cierres patronales y restricciones a los viajes.

Palabras clave: Coronavirus; Industria Aeronáutica; Aerolíneas; Restricciones de Viaje.

INTRODUCTION

Since their first flight, airlines have become one of the prominent sub-sectors of the aviation industry and have made significant contributions to the welfare of global nations. In recent years, the airline industry has experienced a number of economic shocks due to epidemic issues such as severe acute respiratory syndrome (SARS) and Middle East Respiratory Syndrome (MERS), natural disasters, wars between nations, and terror attacks. Despite this economic hindrance, the airline industry managed to surpass and continue to be very effective in terms of business progress. Similar to these kinds of issues, “novel coronavirus (COVID-19)”, one of the deadly viruses that alarmed the global economy fell in a short period of time, leading to a global crisis at the beginning of 2020. As COVID-19 originated in Wuhan, China, the disease started to spread across the entire nation at the end of 2019. Eric et al. (2020) stated, “The new decade began with numerous countries shutting down their borders in response to the arrival of the Novel Coronavirus (COVID-19) outbreak. This was subsequently followed by the introduction of multiple restrictions and regulations that limited the free movement of individuals in an attempt to curb the spread of the virus”. Johns Hopkins University (2020) reported that the disease affects more than 53 million people with 1,38 million deaths worldwide. Such a rate of mortality has led countries to impose lockdowns and travel restrictions across the borders of nations as well as inside the nations. Such restrictions have had a considerable impact on the aviation and tourism industry.

Objectives:

- This study addresses the challenges confronted by the airline industry immediately after the awakening of the deadly virus (COVID-19).
- Furthermore, the research highlights certain strategies followed by airlines to ensure the safety and security of passengers ahead of the pandemic.

In addition, the study investigates how the airline industry can redesign its businesses, despite the impact of COVID-19.

Background of the Study

Concerning advancements in technology and innovations, the aviation industry in recent years has witnessed a constant rate of growth due to the steady growth in cargo and tourism worldwide. Moreover, in many parts of the world, the aviation industry has become a major developing sector that contributes to social and economic growth. As one of the crucial categories of the aviation sector, airlines play a significant role in developing the economy because they employ millions of skilled people to carry out their business, Dube et al (2020), Tretheway et al (2014).

Airlines, one of the fastest modes of transportation have allowed people to move from one place to their desired destinations for more than a century. O’Connell (2019) stated that the “airlines industry took 50 years to achieve the milestone of one billion passengers in 1987 and attained a considerable rate of growth in the next couple of decades, surpassing two billion by 2005 and three billion by 2013 and 4,5 billion passengers by 2019”. (The United Nations World Tourism Organization (UNTWO) (2020) reported that the fair price of air travel ensures that low and middle-class passengers utilize flight services for faster transportation. It has also been reported that the airline industry reached 54 % growth in 2019 and 14 % growth in recent decades. Subsequently, the condition of the aviation industry changed in 2020 due to the spread of coronavirus. Within a few months, Lai et al. (2020) reported that the virus was enrooted in China and spread across 214 countries across the world.

The deadly virus (COVID-19) has not only affected people but also triggered an economic balance worldwide. Because of the virus, several SMEs shuttered their businesses many people became jobless and productivity decreased. In particular, developing countries such as India have been dragged to the 30-year economic stage. This imbalance in the economy was due to the strict imposition of rules and restrictions to keep people away from the disease. In terms of travel restrictions, the article addresses the worst phase encountered by the airline industry around the world.

Literature Review

(i) Aviation industry and impacts of pandemic issues

Soon after the rapid spread of coronavirus, countries around the world shuttered their borders to prevent further spread of the disease, as there was a maximum possibility of transmission of the virus occurring through people traveling from one country to the other. Researchers have revealed that “air transport facilitates the spread of virus throughout the world”, Tatem et al. (2006). Therefore, nations have enforced serious travel restrictions that halt the effective operations of the aviation and tourism industry. According to Jaap Bouwer et al. (2022), “airlines became the biggest destroyer of value among all the aviation subsectors”.

Wen et al. (2005), revealed that “SARS had an adverse effect on tourists’ willingness to travel due to the health risk associated with the travel activities”. This issue is reflected in the decrease in visitor arrivals in a number of countries, according to Kuo et al. (2008). In their approach, Rosello et al. (2017) quantified that

pandemic such as SARS and MERS became vulnerable to the aviation and tourism industry because they reduced the average arrival of visitors to different destinations. This study revealed that airborne disease (COVID-19) has a greater impact on the airline industry than SARS and MERS. Owing to the outbreak of coronavirus, the mobility of people to their desired places was restricted during 2020 and 2021.

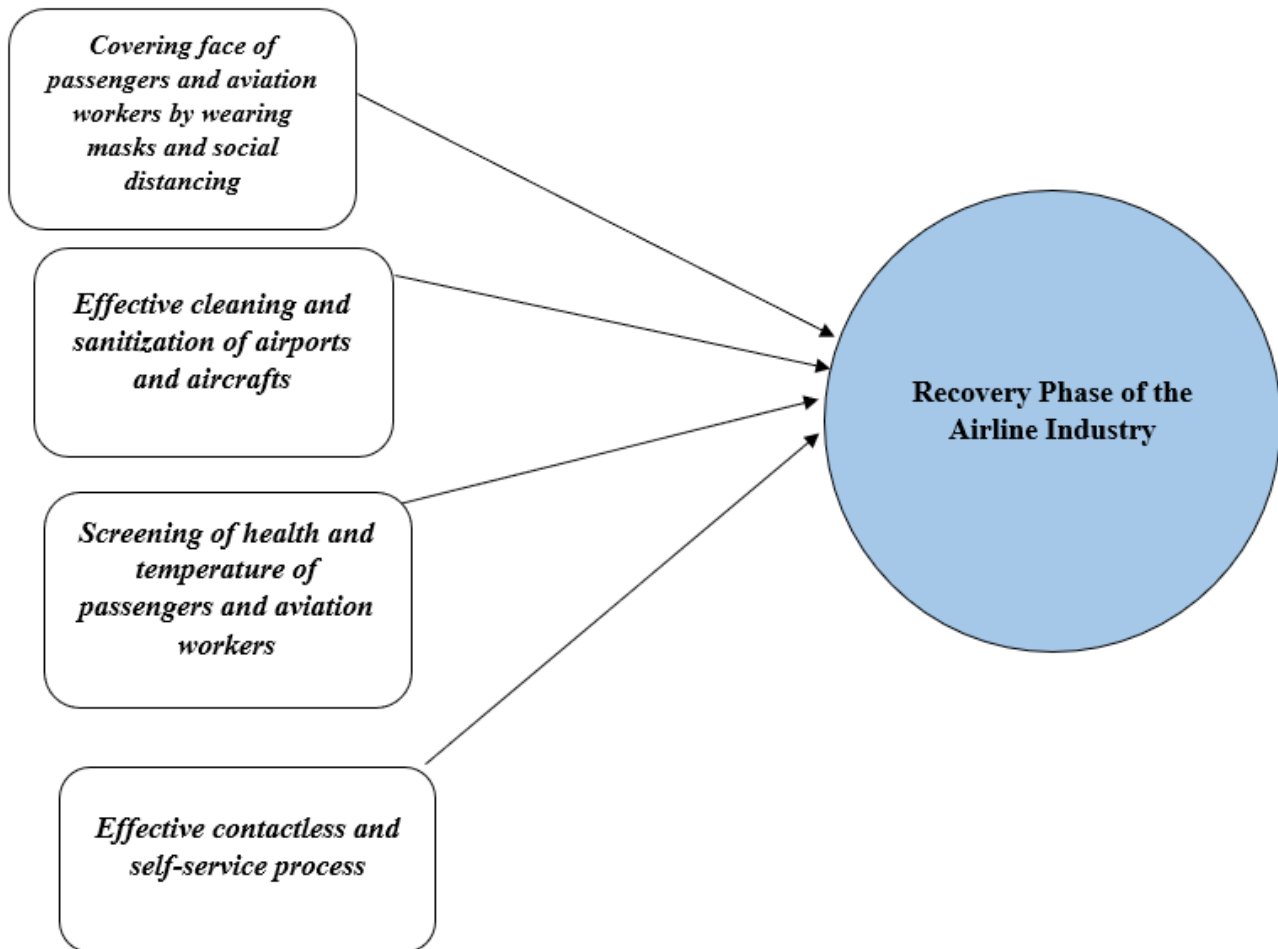


Figure 1. Recovery Phase Framework for the Airline Industry
Source: Kiatano Dube et al. (2020)

(ii) Progress of the airline industry during the pandemic

Since 2019, the airline sector has had considerable profits across nations. After the pandemic, both freight and passenger categories in the airline sector experienced severe business losses. This led to threatening positions for several airline firms to lead their businesses in a favorable way. Dunn (2020 a) stated that “the COVID-19 pandemic caused an unprecedented crisis for the world’s airlines”. With the immediate effects of lockdowns, bans of travel, and shutdowns, most airline firms also implemented social distancing to prevent passengers from being infected with the virus. Hollinger (2020) predicted that more than sixty percent of airlines around the world would halt their flight services due to the spread of COVID-19. According to Dube et al. (2020), Gossling et al. (2020) and Suau-Sanchez et al. (2020), “COVID-19 triggered broad sector challenges caused by border closures and restrictive measures as countries battled to contain and better prepare to deal with the pandemic’s fallout. Earlier assessments show that the pandemic’s impact on air transport and other sectors of the tourism industry was rapid and significant across the world”.

(iii) Coronavirus and its impacts on the Airlines Sector

According to reports from the IATA, coronavirus played a significant role in decreasing the share of the airline industry. According to Nhamo et al. (2020a&b), “This is projected to have a substantial effect on shareholders and the capital value of the global aviation sector. The epidemic had a disastrous effect on North American, European, Asian, and other global airline share prices. Asian airlines were the first to suffer losses in January, as there was already concern about the pandemic after China declared the disease’s emergence at the end of

December 2019. The Asia region, particularly China, was the pandemic's inception and first epicenter. China was the very first country to go into hard lockdown, contributing to the aviation sector's early poor performance during February and March”.

(iv) Revenue loss in the airline industry due to coronavirus

(According to International Air Transport Association IATA) (2020), evasion of the coronavirus led passenger airlines to face a severe decrease in revenue of 314 billion USD in 2020. This decrease in revenue reflects a 55 percent decrease compared with that of the previous year (2019). According to Statista (2022), airports in Europe are estimated to have experienced a revenue loss of 39.7 billion USD in 2021, followed by a loss of 43.8 billion USD after the outbreak of coronavirus. Considering the rapid recovery of world nations from the pandemic it has been estimated that airlines around the world will have a revenue of 51.5 billion USD by the fourth quarter of the year 2022. At the beginning of January 2021, the number of flight schedules around the world was 43.5% Globally, coronavirus has affected both passengers and cargo aviation, leading to a loss of revenue of 370 billion USD in 2020. Because of the pandemic, nearly 46 million people in the aviation industry have lost their jobs across the globe. Due to the pandemic and restrictions on air travel, several well-known airlines such as the Virgin Atlantic, have retired their (A340-600) Airbus passenger aircraft and Royal Dutch Airlines retired their Boeing (B747-400) passenger aircraft by the end of March, Casewell (2020).

(v) Safety measurements taken by airlines ahead of COVID-19

According to Dube et al. (2019), “Sustainability is a critical issue that demands the aviation sector’s attention globally. Ensuring customer safety is crucial as it would motivate people to want to travel again, as evidence shows that most people are not as eager to travel owing to health and safety concerns triggered by the pandemic”. According to Global Industry Travel News (2020), to ensure health, safety, and comfort for passengers, 25 leading airlines have adopted nearly ten strategies to take preventive measures against this deadly disease.

Hall et al. (2020) suggested that the airline industry by adopting numerous strategies to ensure the health and safety of passengers during the pandemic will achieve sustainability. Several preventive measures are taken by the airline sector for the protection of travelers across the globe. Sanitizing the aircraft entirely and implementing high-efficiency particulate air (HEPA) system can destroy 99% of COVID-19 virus particles inside the plane.

In addition to the HEPA system, the airline industry-imposed seating arrangements for passengers inside the aircraft, enabling no face-to-face seating facilities. Eldin et al. (2020) reported that face-to-face contact with passengers can be vital for the spread of the virus, among other factors. With respect to social distancing, the seating systems were arranged inside the planes where travelers can be seated at a definite distance from each other. Previously, recent day travelers with negative COVID-19 test reports as well as vaccinated travelers were allowed to travel only on flights.

(vi) Recovery phase of the airline industry

As the pandemic increased, the cash flow of the airline industry became very low and in the next two months, the cash flow became even worse, Nhamo et al. (2020), IATA (2020). In addition to the low cash flow, the airline sector initiated rebuilding its business operations, which paved the way for the recovery phase of the reliable industry. As the airline industry recovers, it must streamline operations and deploy the most efficient and eco-friendly aircraft on the market to reduce financial and environmental costs. Considering that the recovery is expected to be modest, the installation of small and medium-sized aircraft can deliver maximum profitability for airlines, as demand is expected to be moderate. The industry may also exploit the suspension of large aircraft, which was spurred by a desire to cut costs, to lower its environmental impact by permanently retiring obsolete aircraft.

Airlines must adapt their bookings and cancellation policies to enable customer flexibility, considering that passengers may have to make last-minute modifications to their travel itineraries. Transparency in customer treatment at diverse destinations is also necessary for the sector, as most passengers are apprehensive about being restricted in places upon arrival. In that regard, all airports, in partnership with their local government health departments, must be able to conduct reliable rapid screening at least 24 hours before passengers depart. This may require airports to receive Biosafety Trust certification, which authorizes airports for applying prevention activities aimed at resolving COVID-19.

CONCLUSION

This research analyzed the impact and recovery of the global airline industry following the outbreak of the COVID-19 pandemic. Excluding China, the recovery process of air travel started to maintain sustainability in their businesses. Geographically, the recovery process has a slower, trajectory due to the rise and fall of

COVID-19 infection rates across countries. The recovery is entirely based on the travel policies imposed by different government bodies to minimize the impact of coronavirus on the airline sector. In addition, the study also revealed that the recovery phase is based on the domestic and regional demands of the airline sector. By practicing COVID-19 prevention measures and fixing prices economically, this study suggests that the airline industry can be capable of attaining positive cash flow in the future.

REFERENCES

1. Eric TN, Semeyutin A, Hubbard N. Effects of enhanced air connectivity on the Kenyan tourism industry and their likely welfare implications. *Tourism Management*. 2020 Jun; 78:104033.
2. Dec 28 TP / P, 2020. Pandemic sends airline revenues plummeting [Internet]. The Hub. 2020. Available from: <https://hub.jhu.edu/2020/12/28/airline-business-recovery-after-pandemic/>
3. Dube K, Nhamo G. Major Global Aircraft Manufacturers and Emerging Responses to the SDGs Agenda. *Sustainable Development Goals Series*. 2020;99-113.
4. Tretheway MW, Markhvida K. The aviation value chain: Economic returns and policy issues. *Journal of Air Transport Management*. 2014 Oct; 41:3-16.
5. Graham A, Frédéric Dobruszkes. *Air transport : a tourism perspective*. Amsterdam, Netherlands: Elsevier; 2019.
6. UNWTO. Impact assessment of the COVID-19 outbreak on international tourism | UNWTO [Internet]. www.unwto.org. UNWTO; 2022. Available from: <https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-on-international-tourism>
7. Lai CC, Shih TP, Ko WC, Tang HJ, Hsueh PR. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *International Journal of Antimicrobial Agents*. 2020 Feb;55(3):105924.
8. Tatem AJ, Rogers DJ, Hay SI. Global Transport Networks and Infectious Disease Spread. *Advances in Parasitology* [Internet]. 2006; 62:293-343. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3145127>
9. Bouwer J, Krishnan V, Saxon S, Tufft C. Taking Stock of the Pandemic's Impact on Global Aviation [Internet]. McKinsey & Company. 2022. Available from: <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/taking-stock-of-the-pandemics-impact-on-global-aviation>
10. Wen Z, Huimin G, Kavanaugh RR. The Impacts of SARS on the Consumer Behaviour of Chinese Domestic Tourists. *Current Issues in Tourism*. 2005 Jan 15;8(1):22-38.
11. Kuo Hsiao-I, Chen CC, Tseng WC, Ju LF, Huang BW. Assessing impacts of SARS and Avian Flu on international tourism demand to Asia. *Tourism Management* [Internet]. 2008 Oct 1;29(5):917-28. Available from: <https://www.sciencedirect.com/science/article/pii/S0261517707002191#sec5>
12. Rosselló J, Santana-Gallego M, Awan W. Infectious disease risk and international tourism demand. *Health Policy and Planning* [Internet]. 2017 Jan 18;32(4):czw177. Available from: <https://academic.oup.com/heapol/article/32/4/538/2926036>
13. Subscribe to read | Financial Times [Internet]. www.ft.com. Available from: <https://www.ft.com/content/3fe8a876-7d7c-11ea-8fdb-7ec06edeef84>.
14. Gössling S, Scott D, Hall CM. Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism* [Internet]. 2020 Apr 27;29(1):1-20. Available from: <https://doi.org/10.1080/09669582.2020.1758708>
15. Suau-Sanchez P, Voltes-Dorta A, Cugueró-Escofet N. An early assessment of the impact of COVID-19 on air transport: Just another crisis or the end of aviation as we know it? *Journal of Transport Geography* [Internet]. 2020 Jun 1;86(102749):102749. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/>

PMC7269949/#bb0005

16. Nhamo G, Dube K, Chikodzi D. COVID-19 and Implications for the Aviation Sector: A Global Perspective. Counting the Cost of COVID-19 on the Global Tourism Industry. 2020;89-107.

17. Nhamo G, Dube K, Chikodzi D. Impact of COVID-19 on the Global Network of Airports. Counting the Cost of COVID-19 on the Global Tourism Industry. 2020;109-33.

18. Cargo volumes - next 12 months Pax volumes - next 12 months [Internet]. Available from: <https://www.iata.org/en/iata-repository/publications/economic-reports/airline-expectations-for-2020-improve-ahead-of-virus-outbreak/>

19. COVID-19 impact on airports by region and quarter 2020-2022 [Internet]. Statista. [cited 2024 Apr 22]. Available from: <https://www.statista.com/statistics/1106985/coronavirus-impact-airports-region>.

20. Lufthansa to permanently retire selected A380, A340 and B747 aircraft [Internet]. Business Traveller. [cited 2024 Apr 22]. Available from: <https://www.business traveller.com/business-travel/2020/04/07/lufthansa-to-permanently>

21. Dube K, Nhamo G. Climate change and the aviation sector: A focus on the Victoria Falls tourism route. Environmental Development. 2019 Mar; 29:5-15.

22. Hall CM, Scott D, Gössling S. Pandemics, transformations and tourism: be careful what you wish for. Tourism Geographies. 2020 Apr 28;22(3):1-22.

23. Eldin C, Lagier JC, Mailhe M, Gautret P. Probable aircraft transmission of Covid-19 in-flight from the Central African Republic to France. Travel Medicine and Infectious Disease. 2020 Apr;101643.

FINANCING

No financing.

CONFLICT OF INTEREST

None.

AUTHORSHIP CONTRIBUTION:

Conceptualization: M. Srividya Iyengar, R. Venkatesh.

Research: M. Srividya Iyengar, R. Venkatesh.

Methodology: M. Srividya Iyengar, R. Venkatesh.

Project management: M. Srividya Iyengar, R. Venkatesh.

Supervision: M. Srividya Iyengar, R. Venkatesh.

Validation: M. Srividya Iyengar, R. Venkatesh.

Drafting - original draft: M. Srividya Iyengar, R. Venkatesh.

Writing - proofreading and editing: M. Srividya Iyengar, R. Venkatesh.