

Project Proposal

Impacts of COVID-19 Pandemic on the Airline Industry in the US

Jin Liang, Maisara Mackeen, Andy Prempeh
Group BC-7
INFO 201

Story Pitch:

For the final project, we chose to research the impacts of the pandemic on the airline industry. As we all know, COVID-19 impacted a large majority of the business industries but one of the hardest hits was on the airline industry. Since its inception, the invention of the airplane has led to an increase in the average person's access to other parts of the world, and with such an exciting prospect/possible business, people ran to take advantage of this new mode of travel, leading to the birth of the airline industry. As airline travel began to boom, so did the innovation around the planes that were being built, leading to the creation of jet engines and larger, more commercial planes. As we begin taking a look at the modern airline industry, it was projected to have over 7.2 billion passengers by 2035, but then its progress, along with that of the world, was brought to a halt by the global pandemic.

During the pandemic, we saw how negatively the airline industry was impacted as country after country went into lockdown. The unfathomable outbreak at the time barred anyone from even going out of their houses as scientists continuously looked for solutions to minimize the risk of the virus. People who frequently traveled from city to city for work were now constrained in their homes. Those who flew to visit their relatives could only meet through their screens. Those who planned their vacations had to scrap their plans of a relaxing trip overseas. Consequently, airline travel hit an all-time low ever since its rise. Businesses formulated significant changes to accommodate the new lifestyle every one adopted during the pandemic, including the airline industry. As vaccinations became more accessible, businesses began to open up their operations again centering around the new norm. As the world slowly works its way through this new norm, the after-effects of the pandemic are still ongoing. For the airline industry, the number of passengers traveling by air for the year 2023 has yet to reach the number of passengers before the pandemic.

With that, we focused our research on the effects of the pandemic on the airline industry in the United States as there have been tremendous changes, apparent or not, indirectly impacting us, the consumers, as well. At one point, more and more people are familiarizing themselves again with flying and compensating for the time they were

restricted from doing so. Airlines have seemed to offer more leniency and options with the selling of their tickets. Despite that, the number of travelers post-pandemic have yet to catch up to those of pre-pandemic. We would like to find the correlation between the COVID-19 cases and the number of passengers, domestically and internationally, utilizing the data sets we found on both topics respectively. We aim to recognize and seek answers to the patterns we observe from them in order to come up with a conclusion to the topic of our research.

Data:

- https://www.transtats.bts.gov/Data_Elements.aspx?Data=4
 - This dataset is from the United States Department of Treasury
 - This dataset provides us with the number of passengers in each month starting from Oct 2002 to July 2023. The passengers are divided into domestic and international passengers from all U.S. carriers and all airports.
 - There are 5 columns in the dataset
 - There are 273 rows in the dataset
- <https://github.com/nytimes/covid-19-data/blob/master/us.csv>
 - This dataset is from The New York Times and we downloaded the data from their GitHub archive through the URL above.
 - This dataset contains information about the cumulative daily Covid-19 cases in the United States from January 2020 to March 2023. The data was tracked by The Times in real time as the test results were identified.
 - There are 3 columns in this dataset
 - There are 1158 rows in this dataset

Background Research:

- <https://www.forbes.com/sites/suzannerowankelleher/2022/03/12/covid-changed-business-travel/?sh=677d51b953a0>
 - This article describes how the business travel world was influenced by the pandemic and expectations to come as time goes by.
 - Contrary to our belief, a larger percentage of those who frequently traveled for work are now more comfortable with working from home.
- <https://commercial.allianz.com/content/dam/onemarketing/commercial/commercial/reports/agcs-aviation-trends-post-covid-19.pdf>
 - This article discusses nine issues of the aviation trends post covid and rather than only discussing about the ticket sales, it consider other angles such as plane maintenance.
 - Pilots have reported an increase in reports of “mechanical glitches and human errors” as they return to their jobs after months of abandoning their planes.
- <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-industry/loans-to-air-carriers-eligible-businesses-and-national-security-businesses>
 - This article from the U.S. Treasury Department talks about the 4003 Loan Program established by the CARES Act to alleviate eligible businesses impacted by the pandemic by providing emergency credit lines.
 - As presented in the website, multiple airlines applied to the loan in order to maintain their business during the pandemic.
- <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/back-to-the-future-airline-sector-poised-for-change-post-covid-19>

- This article from McKinsey & Company inform us of the debt that many airline had to loan out to stay in business and the impact of the loan is to the airline industry and to us
- It also gives us a new angle into why the airline industry is affected, as the article states that leisure passengers cover the fixed cost while the business travelers are the ones to make profit and these types of travelers have decreased due to the pandemic.
- <https://www.iata.org/en/iata-repository/publications/economic-reports/understanding-the-pandemics-impact-on-the-aviation-value-chain/>
 - This is a report discusses about the impact of the pandemic on the aviation value chain bringing up new angles to consider from how the pandemic has affected the aviation industry.
 - We knew that many airline businesses had to take up a debt to stay in business and that addition debt that is added, move their credit rating down. These credit rating are crucial because it determines whether the business is worth investing in.