LITERATURE SURVEY

Airlines Data Analytics for Avaition Industry

S.NO	TITLE OF THE PAPER	AUTHOR	PUBLISHED YEAR	ABSTRACT
1	Big Data Analytics in Airlines : Efficiency Evaluation using DEA	Zudha Aulia Rachman and Arviansysh	July 2019	Airline schedule planning is a crucial issue in airline operation typically designed most efficiently and effectively. Even so, the plan execution, including recovery actions to any prevailed irregularities, has a considerable impact on airline efficiency. Those activities produce a vast amount of operational data which contains valuable insights for businesses. This study aims to quantitively evaluate the operational efficiency in the airline scheduling and execution process by implementing big data analytics approach. Parameters for calculation are obtained from prior studies. These parameters are calculated using Data Envelopment Analysis (DEA) method to get efficiency scores for each operation process every month. Finally, we argue that the data analytics approach is beneficial to be implemented in airlines and find a decreasing trend in the efficiency score of the sample airline during 2017-2018.

LITERATURE SURVEY

| 2 | Predictive Analytics Platform for Airline Industry | P. H. K Tissera; A.N.M.R.S.P. llwana; K.T. Waduge; M.A.l. Perera; D.P. Nawinna; D. Kasthurirathna | December 2020 | The research is to develop accurate demand forecasting model to control the availability in Airline industry. The primary outcome of the model is that the Airline organization can maximize the revenue by controlling the availability. The product in airline industry is the seat, which is an expensive, unstock able product. The demand for the seats is almost uncertain, the capacity is constraint and difficult to increase and the variable costs are very high. Hence the priority of the expected demand forecast is very high for airline industry. An accurate mechanism to predict the revenue for future months of ODs (Origin destinations) is done using fare and passenger data. The revenue is derived by the number of passengers and the fares they pay which vary for each flight. Airline travel is very susceptible to the social, political and economic changes. Therefore, passenger buying patterns change quite dynamically. Hence, it is challenging to develop an accurate method to project the revenue for each route. To overcome this, we are going to use semi-supervised learning mechanism. We have the current ticketed revenue plus we have the current booked passengers. We also have the ticketed passenger details of previous flights. Hence most of the information is available, however changing market conditions is an unknown variable which can have a significant impact on passenger travel patterns. Through this research We are going to design and develop the best fit model to forecast flight OD level |

				passenger demand based on the historical data..
3	Exploratory Data Analysis on Aviation Dataset	Saba Firdous ; Haseeba Fathiya; Lipsa Sadath	March 2021	The usage of big data analytics is booming today, with its ability to be used to draw useful insights from past data research. Its uses in the aviation industry have a wide array of applications ranging from predicting flight delays to detecting faults in airplane parts. In this paper, we conducted exploratory data analysis on flight dataset to draw inferences on arrival and departure delays and to identify relationships between flight timings and delays. Using the flight delay data, we identified which flight is mostly prone to delays. The arrived upon conclusions are useful for selecting flights in the future.
4	Flight Traffic Visual Analytics during COVID-19	Chollakorn Nimpattanavong; Ponlawat Khamlae; Worawat Choensawat; Kingkarn Sookhanaphibarn	Mar 2019	During the spread of COVID-19, one of the businesses that were affected is the flight business. In this situation, each country had its policy to control the spread of the virus that includes international and local transport restrictions that cause many airlines to change their flight schedule. In this work, we collected the flight traffic of each airport and the COVID19 spread of each country into our database. Its purpose is for analysis to see the behavior of flight traffic for the countries that were affected by COVID-19. We also provided the data visualization website for

LITERATURE SURVEY

				those whom were interest to answer their hypothesis of the relationship between flights and the COVID-19 infection. The findings were that the date on 13 March had the maximum number of flights with 679 flights while the date on 18 April had the minimum number of flights with six flights, and the number of domestic flights was increasing to 87 during the Post-COVID.
5	State-Of-Art Machine Learning Techniques to Predict Airlines Delay	Sai Sharan; M Sriniketh; Harsha Vardhan; Dannana Jayanth	December 2021	Nowadays everyone is becoming extremely busy that makes them follow the time very precisely. In the commercial aviation sector, flight delays are a significant cause of dissatisfaction with customers. So, the prediction of flight delays plays a pivotal role in travelers' comfort and alleviates the airline's economic losses. This paper analyzes the performance of the machine learning algorithms such as Random Forest, AdaBoost, and XGBoost classifier to handle the delay time prediction of flight by considering multiple parameters such as weather conditions, flight schedule, etc., that are responsible for flight delay. The paper does a detailed comparative analysis of the algorithms used. Our study can also be applied to various other applications, such as predicting demand-based airline fares.