Literature Survey

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S.No	Authors	Topic	Description	Limitation
1.	P. Baumgarten, R. Malina, and A. Lange	"The impact of hubbing concentration on flight delays within airline networks: An empirical analysis of the US domestic market." Transportation Research Part E: Logistics and Transportation Review, 66(Supplement C):103–114, June 2014. ISSN 1366-5545.	It explores the relationship between hubbing activities and flight delays in the United States from an airline-specific network perspective. Airline hubbing is measured with the Hubbing Concentration Index. We estimate the impact of hubbing behavior on delays, using three measures of delay, two based on delay against schedule, and the third based on buffer-corrected excess travel times.	Airlines use buffer times to mitigate passenger-perceived delays against schedule that would, without buffers, arise from more complex network operations.

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2.	E. Balaban, I. Roychoudhury, L. Spirkovska, S. Sankararaman, C. Kulkarni, and T. Arnon	"Dynamic routing of aircraft in the presence of adverse weather using a POMDP framework". In 17th AIAA Aviation Technology, Integration, and Operations Conference, 2017.	The objective of this problem is to route an aircraft to its destination airport in presence of convective weather in its direct path, while observing safety rules and optimizing for flight time and fuel consumption. Another (simpler) variant of this problem is to guide an aircraft through a region of convective weather but not land, thus not requiring routing to a specific point	It is difficult for airline dispatchers and pilots to optimize flight routes given the uncertainties in weather forecasts and traffic congestion. Similarly, it is difficult for air traffic control (ATC) traffic flow managers to optimize delay management initiatives and for flight controllers to optimize the sequence of aircrafts given the uncertainties in weather forecasts.

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3.	A. Kim and M. Hansen	"Deconstructing delay: A non-parametric approach to analyzing delay changes in single server queuing Systems." Transportation Research Part B: Methodological, 58(Supplement C):119–133, Dec. 2013. ISSN 0191-2615.	This introduces an empirically driven, non-parametric method to isolate and estimate the effects that changes in demand and changes in throughput have on delay – in particular, arrival and departure flight delay at airport runways. Classic queuing concepts were used to develop a method by which an intermediate, or counterfactual, queuing scenario could be constructed, to isolate the delay effects due to shifts in demand and throughput.	When both demand and throughput performance shift simultaneously, it can be difficult to quantitatively estimate how much the resulting change in delay should be attributed to either. In turn, it can be difficult to isolate the role of the air navigation service provider's performance from the role of flight demand in effecting delay changes.

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4.	A. Evans, B. Sridhar, and D. McNally	"Improving operational acceptability of dynamic weather routes through analysis of commonly used routings." In 16th AIAA Aviation Technology, Integration, and Operations Conference, 2016.	The Dynamic Weather Routes (DWR) tool is a ground-based trajectory automation system that continuously and automatically analyzes active in-flight aircraft in enroute airspace to find simple modifications to flight plan routes that can save significant flying time, while avoiding weather and considering traffic conflicts, airspace sector congestion, special use airspace, and FAA routing restrictions. This analyzes the historical usage of different flight routings, varying from simple waypoint pairs to lengthy strings of waypoints incorporating jet routes, in order to improve DWR route acceptability.	Some DWR advised routes to flight crews as proposed route change requests, many are not accepted by air traffic control, or are modified before implementation as Center route amendments. Such actions suggest that the operational acceptability of DWR advised route corrections could be improved, which may reduce workload and increase delay savings

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5	Y. Ding	"Predicting flight delay based on multiple linear regression." In IOP Conference Series: Earth and Environmental Science, volume 81, 2017.	This study proposes a method to model the arriving flights and a multiple linear regression algorithm to predict delay, comparing with Naive-Bayes and C4.5 approach. Experiments based on a realistic dataset of domestic airports show that the accuracy of the proposed model approximates 80%, which is further improved than the Naive-Bayes and C4.5 approach approaches	The result testing shows that this method is convenient for calculation, and also can predict the flight delays effectively. It can provide decision basis for airport authorities

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6.	B. Zou M. Hansen.	"Flight delay impact on airfare and flight frequency: A comprehensive assessment. Transportation Research Part E: Logistics and Transportation Review, 69(0):54 – 74, 2014. ISSN 1366-5545.	This paper presents a comprehensive empirical analysis of flight delay impact on airfare and flight frequency in the US air transportation system. We model airfare and flight frequency as functions of cost and demand characteristics, competition effects, and flight delays at origin, destination, and intermediate hub airports.	Higher delay at origin, destination, and connecting airports leads to higher airfare. Higher delay has an upward effect on flight frequency. Delay effects on both fare and frequency are in general small. Counterfactual delay reduction scenarios could result in fare reduction benefits in billion dollars each year.