

# The Avianca airline collapse: a complex network evolution analysis

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Airline companies structure their network based on connections between airports, using strategies chosen according to population demand, distances, airport prices, aircraft maintenance locations, among others. In this way, each company builds its air network, which is nothing more than its network of connections between airports. Given this scenario, the objective of this work was to contribute to the understanding of the collapse of Avianca based on an in-depth study of the dynamics of its domestic air network. The monthly evolution of Avianca's network was analyzed from April 2010 to April 2019, when the company went bankrupt and closed. Our results show that the Company sought to optimize its network, serving more cities, but not increasing the number of flights at the same pace. Within this expectation, Avianca increased the number of passengers, but failed to improve financial costs and thus collapsed.