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Developing Model for Fuel Consumption Optimization in Aviation Industry

Authors : Somesh Kumar Sharma, Sunanad Gupta

Abstract : The contribution of aviation to society and economy is undisputedly significant. The aviation industry drives economic and social progress by contributing prominently to tourism, commerce and improved quality of life. Identifying the amount of fuel consumed by an aircraft while moving in both airspace and ground networks is critical to air transport economics. Aviation fuel is a major operating cost parameter of the aviation industry and at the same time it is prone to various constraints. This article aims to develop a model for fuel consumption of aviation product. The paper tailors the information for the fuel consumption optimization in terms of information development, information evaluation and information refinement. The information is evaluated and refined using statistical package R and Factor Analysis which is further validated with neural networking. The study explores three primary dimensions which are finally summarized into 23 influencing variables in contrast to 96 variables available in literature. The 23 variables explored in this study should be considered as highly influencing variables for fuel consumption which will contribute significantly towards fuel optimization.

Keywords : fuel consumption, civil aviation industry, neural networking, optimization
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