

# **An Airline Yield Management Simulation Model for a Single Leg Flight with Multiple Fare Classes Allowing Cancellations, No – Shows, and Chance Passengers with an Assessment of Different Booking Policies**

**Aissa Mae Villanueva**

*Intel Philippines*

*Email: [ais\\_villanueva@yahoo.com](mailto:ais_villanueva@yahoo.com)*

**Bryan Gobaco**

*Industrial Engineering Department*

*De La Salle University*

*2401 Taft Avenue, Manila, 1004 Philippines*

*Email: [gobacob@dlsu.edu.ph](mailto:gobacob@dlsu.edu.ph)*

## **ABSTRACT**

In order to address the inherent complexities of current solution techniques employed in the study of airline revenue / yield management, there is a need to develop a simulation model that will provide a flexible and realistic assessment of the actual behavior of the various booking policies employed by the airline industry. This study is primarily based on a single leg flight with multiple fare classes that allows cancellations, no – shows and chance passengers with an assessment of the different booking policies, such as the non – nested seat allocation, nested booking limit, and overbooking policy.

The main objectives of the study are to identify and assess the distinguishing effects of the different booking policies, which include the non – nested seat allocation approach, nested booking limit and overbooking policy, reviewed from the literature to revenue, and to ascertain how variations of customer behavior variables, identified as the inter-arrival time of the regular passengers, cancellation probabilities, no – show probabilities and chance passengers' arrival distribution, affect the revenue across the different booking policies. At the same time, the impact of the interaction of these policies and customer behavior variables to the revenue to be generated in the system will be determined.