Announcing the Final Examination of Mohammad Alsowayigh for the degree of Doctor of Philosophy

Time & Location: July 1, 2014 at 11:30 AM in Engineering 2 312L
Title: Assessing Safety Culture among Pilots in Saudi Airlines: A Quantitative Study Approach

In high-risk industries, such as aviation, safety is a key for organization survival. Most accidents involve human losses and bring substantial cost to organizations. Accidents can devastate the reputation and profitability of any organization. In aviation, more than 80% of aircraft accidents are related to human errors. Safety culture has substantial impact on the success of any organization. Employees' performance and behaviors are influenced by their perception of safety culture within their organization. In the aviation industry, pilots are considered the last resort to prevent accidents or mishaps in the air or ground. The focus on pilots' perception of safety culture is vital to understand how the airline can influence pilots’ behaviors in the flight deck, and provide opportunities to minimize risk or unsafe behavior in the future.

The present study examined the effect of safety culture on safety performance among pilots of Saudi Airlines. Safety performance was measured by pilot attitude toward violations and pilot error behavior. The study further analyzed the mediating role of pilot commitment to the airline between safety culture and measures of safety performance. The study used a quantitative approach using survey questionnaire to collect the data. A total of 247 commercial airline pilots, captain and first officer, flying at Saudi Airlines voluntarily participated in the study. Confirmatory factor analysis was conducted to validate each latent construct. The study used structural equation modeling (SEM) to analyze the relationship between all variables in the study using AMOS 22 software.

The study results revealed that safety culture had a direct effect on pilot attitude toward violations and indirect effect on pilot error behavior. Moreover, safety culture had strong effect on enhancing pilot commitment to the airline. The mediating role of pilot commitment to the airline was not significant, and could not mediate the relationship between safety culture and measures of safety performance.

The present research contributed to the current state of knowledge about the significant role of safety culture as a main predictor of safety performance in civil aviation. The present study contributes to aviation psychology by analyzing the effect of safety culture as a predictor for improving pilots' commitment to the airline. In addition, this research analyzed the effect of safety culture on pilot attitude toward violations and pilot error behavior. Study findings can be used by airline management to better identify causes of unsafe behavior inside the cockpit. The outcomes of this research emphasize the role of management in shaping and affecting employees' behaviors and attitudes.

Major: Industrial Engineering PhD

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Bachelor's of Aerospace Engineering, BS, 2002, Embry Riddle Aeronautical University
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Dr. Gene Lee, Industrial Engineering and Management System
Dr. Peter Hancock, Psychology
Dr. Piotr Mikusinski, Mathematics

Approved for distribution by Dr. Waldemar Karwowski, Committee Chair, on June 12, 2014.

The public is welcome to attend.