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## What Factors Influence the Imposter Phenomenon amongst Collegiate Flight Students?

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# What Factors Influence the Imposter Phenomenon amongst Collegiate Flight Students?

By-

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# Background

- The need for commercial airline pilots has been increasing significantly, and with the mandatory retirements projected in the next decade, the airline pilot workforce will have an injection of younger pilots.
- Imposter Phenomenon is the feeling that an individual is a fraud, characterized by a sense of fear of not living up to others' expectations of them (Clance, & Imes, 1978).
- Previous research has studied the effects and prevalence of the Imposter Phenomenon (IP) in young professionals, especially graduate students, and academics. The phenomenon is particularly prevalent for female graduate students and academics (Cowie, et al., 2018).



## Purpose & Significance

- The purpose of this study is to observe the presence of the Imposter Phenomenon in collegiate pilots.
- The study seeks to identify predictors of Imposter Syndrome in pilots.
- By gaining the knowledge of which factors influence the Imposter Syndrome in pilots, steps can be taken by the industry to address the same.



# METHOD

IRB Approval

113 participants, with 96 usable cases (Mean age = 20.35, SD = 2.50)

Participants from amongst all levels of collegiate flight students enrolled in a 4-year aviation university in Florida.

Participants level of Imposter Phenomenon was measured using the 20-question validated Clance (1985) Imposter Phenomenon scale

12 factors were tested as potential predictors (independent variables) in the study. These are age, gender, ethnicity, education level, income, total flight hours, type of flight school training, pilot certification level, personality, measure of self-efficacy, measure of self-handicapping, and perceived organizational support.



# Operational Definitions

- Age - Years
- Gender – Male, Female, Other
- Ethnicity - Caucasian (white, non-Hispanic), African descent, Asian descent (Includes India), Latino/Hispanic descent, Other
- Income – US Dollars
- Education Level - High School Diploma, Associate's degree, 4-year Bachelor's degree, Master's degree, Doctorate
- Total flight hours – Hours
- Type of flight school training – Part 141, Part 61
- Pilot certification level - Student Pilot License, Private Pilot License, Commercial Pilot License, Air Transport Pilot License, Other
- Personality – Mini IPIP (International Personality Item Pool) Scale (Goldberg, et al., 2006)
- Measure of self-efficacy – Self-Efficacy Scale (Chen, Gully, & Eden, 2001)
- Measure of self-handicapping – Self-Handicapping Scale (Strube, 1986)
- Perceived organizational support - Survey of Perceived Organizational Support (SPOS) (Eisenberger, Huntington, Hutchison, & Sowa, 1986)
- Imposter Phenomenon - Imposter Phenomenon Scale (Clance, 1985)



# Research Design & Data Analysis

- The study employed a correlational design.
  - Participant scores on the Clance (1985) IP scale were used as the DV
  - The 12 predictive factors being tested were used as the IVs.
- The data was tested using a multiple linear regression (backwards stepwise regression) to determine which factors predicted the Imposter Syndrome in collegiate pilots.



# Research Predictions

Age, gender, ethnicity, education level, income, total flight hours, type of flight school training, pilot certification level, personality, measure of self-efficacy, measure of self-handicapping, and perceived organizational support of the pilot are significant predictors of collegiate pilots' Imposter Syndrome when controlling for each other.





# Results

$$Y = 32.72 - 9.77 X_1 + 1.03 X_2$$

- Y represents predicted scores on the Clance (1985) IP scale
- $X_1$  represents type of flight school training, Part 61 vs Part 141
- $X_2$  represents participants measure of self-handicapping
- The data analysis revealed an  $R^2 = .317$  (adjusted  $R^2 = .300$ ).
- The results of the analysis showed a statistically significant model with  $F(2,78) = 18.14$ ,  $p < .001$ .



# Results

- The results implied that approximately 31.70% (30.00% adjusted) of the variance in collegiate pilot Imposter Phenomenon was accounted for by the type of flight school training and the measure of self-handicapping of the participant.
- The results also implied that while holding all other variables constant:
  - Part 141 trained pilots have IP scores 9.77 points lower than their Part 61 trained counterparts, on average.
  - 1 unit increase in a pilot's self-handicapping self-evaluation will have a 1.03 point increase in IP, on average.



# Discussion

- The predictions of two of the tested factors were supported by the data. The first was that type of flight training (Part 61 vs Part141) would influence Imposter Phenomenon. The data showed that Part 141 trained collegiate pilots showed lower scores of Imposter Phenomenon.
  - A plausible explanation of the same could be that students trained under part 141 feel more confident in their skills as a pilot, and this may have an indirect influence on overall Imposter Phenomenon.
- The second predictor that was supported by the data was the pilot's measure of self-handicapping. Self-handicapping is a psychological characteristic where a person deliberately lacks effort with the belief that this would be a method of protecting the ego, and not being blamed for failure.
  - The plausible cause for this finding is that pilots who deliberately underperform/lack effort as a means of not being found out as an imposter who does not have the necessary skills. Lack of performance can therefore be blamed on lack of effort rather than lack of skills.



# Limitations

- Participants are self reporting levels of each construct, and therefore there is a possibility for not capturing true perceptions of the pilots
- These findings are limited in generalizability due to the fact that they were recruited from a collegiate flight training university. Additionally this only represents collegiate pilots in the US.
- Due to the smaller sample size, no model fit analysis was performed. This will be addressed in the future research section.
- A limited number of variables were tested due to time constraints of the participants completing surveys.



## Future Work

- The regression equation created by this study will be tested by collecting data from another collegiate flight university. This will serve the purpose of determining model fit. Model fit will validate whether this study will be a reliable means of predicting collegiate pilot Imposter Phenomenon.
- Future research will also seek to replicate the methodology with pilots all across the US to determine whether the same or different factors influence the Imposter Phenomenon.
- While this study focused on the aviation industry, the methodology could be replicated in other industries as well to understand the prevalence and factors that influence Imposter Phenomenon.
- Future work should also be focused on removing the limitations that were present in this study. One method could be to test different predictor of this phenomenon.



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