Assessing Trust in Air Traffic Controllers: A Pilot Study
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Abstract
The safety of the National Airspace System is reliant upon the partnership between pilots and air traffic controllers facilitated through verbal communications. When the partnership based on trust is strong, the pilot is able to better manage the complexities associated with flying in congested airspace; errors may be reduced and system efficiency increased. Understanding the components of a pilot’s trust in controllers is an important first step towards developing trust-building and trust-enhancing strategies to ensure strong partnerships. Further this knowledge may reduce errors and improve system efficiency.

Methodology
Part I – Developing the Scale. The five-stage procedure used in Rice, Mehta, Steelman, & Winter (2014) and Rice, Mehta, Winter & Oyman (2015) form the methodology basis.

Stage 1: Word Generation
• Using the Delphi method (Bolger & Wright, 2011) comprised of a team of aviation experts, a series of words or phrases representing trust in controllers will be compiled.

Stage 2: Nominal Paring
• The list produced in Stage 1 will be narrowed by the Delphi experts; words not judged by a majority of the team to represent trust are pared out.

Stage 3: Likert-scale Paring
• Using the results of Stage 2, the Delphi experts will further narrow the word list through Likert-scale scoring. Those items scoring the highest will be retained.

Stage 4: Scenario-based Testing
• In stage 4, participant will be presented with a scenario and asked to use the proposed words to rate the scenario. Results will be subjected to a Principle Component Analysis. Words that strongly load together will form the scale.

Stage 5: Scenario-based Experiment
• A simple experiment will be used to determine if the scale can discriminate between perceptions of a trustworthy or untrustworthy air traffic controller.

Part II – Conduct a Pilot Study. This study is quantitative and non-experimental. Using a correlational approach and predictive design, the objective is to determine variables that appear to predict trust in air traffic controllers using the newly developed Trust in Air Traffic Controllers Scale as the measurement instrument.

Research Questions
RQ 1 – Given trust is a latent variable, what observed variables can be used as a surrogate measure of a pilot’s trust?
RQ 2 – What variables are valuable in predicting a pilot’s trust in air traffic controllers?

References

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Status
Stages 1 – 3 of the scale development are complete. The experts came to 100% agreement on six words for the Stage 4, Scenario-based Testing. Having received IRB approval, Stage 4 data collection is currently in progress.

Do you trust your air traffic controller?