

ACRP Problem Statement: 7

Recommended Allocation: \$450,000

Air Passenger Values of Time and Qualitative Travel Attributes

Click here to see problem statement in IdeaHub: <http://ideascale.com/t/UKsrZBPoU> (Note: you must be a registered user in myACRP/IdeaHub.)

TAGS: Airport Planning, Customer Experience, Design, Landside

STAFF COMMENTS

The proposed research builds on previous ACRP results, including the research conducted for WOD 22: Passenger Value of Time, Benefit-Cost Analysis and Airport Capital Investment Decisions.

AVERAGE INDUSTRY RATING SUMMARY

	Committees¹	Airport Community²
Achievable	3.50	3.80
Applicable	3.00	3.55
Implementable	4.00	3.50
Understandable	3.50	3.90
OVERALL	3.50	3.70

Notes: 1. Includes TRB aviation committees and committees from ACI-NA and AAAE.

2. Includes airport employees serving on active ACRP project panels.

[USE THIS LINK TO SEE DETAILED INDUSTRY RATINGS.](#) Click on the arrow in the Problem Statements dropdown menu in the upper right and select the problem statement number.

[USE THIS LINK TO SEE DETAILED INDUSTRY COMMENTS.](#) Click on the arrow in the Problem Statements dropdown menu in the upper right and select the problem statement number.

ACRP OVERSIGHT COMMITTEE (AOC) DISPOSITION

The average AOC rating among its voting members was 2.5 on a scale of 1 to 5. There was no discussion. The problem statement was not selected for ACRP funding and will be returned to the idea collection phase of ACRP's IdeaHub.

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OBJECTIVE

The objective of the proposed research is to update and extend the estimated values of travel time savings determined in ACRP Project 03-19 and broaden the scope to include not only travel time savings but also other quantitative service attributes, such as walking distance, and the perceived values attributed by air passengers to improvements in qualitative levels of service, such as ride quality and comfort. One important objective of the research is to explore the importance of travel time variability relative to changes in the average travel time, as well as to better understand how air passengers make allowances for variability in travel times and delays in their trip planning. Improved understanding of air passenger values of travel time savings and other service attributes will benefit airports through more detailed benefit-cost analysis of capital investment decisions and assessment of factors to be considered in operational decisions.

BACKGROUND

"The implied values that air passengers attribute to travel time, walking distances, and qualitative travel attributes such as ride quality, comfort, and convenience can have a significant influence on their use of ground transportation or internal airport circulation modes. This travel behavior in turn influences the design of airport ground access mode choice and airport choice models, as well as such issues as the fares and rates to charge for airport ground transportation or other airport services. Even where no fare is charged directly, the benefits that air travelers derive from reduced travel time or improved level of service can form a major component of benefit-cost analysis used to justify airport development projects.

A recent ACRP project (03-19) documented in ACRP Web-Only Document 22 Passenger Value of Time, BenefitCost Analysis, and Airport Capital Investment Decisions developed estimates of air passenger values of time for different components of the journey from trip origin to destination, including airport ground access, time spent in various activities within the airport passenger terminal, including security screening and waiting at the gate, and time spent flying to the destination, including any flight delays. These estimates were derived from a set of stated preference choice experiments conducted as part of a web-based survey of household members who had taken a domestic air trip in the past six months.

However, this survey had a sample size of about 1,170 respondents due to project budget constraints (the survey was only one part of a more broadly scoped project). Although adequate for the analysis undertaken for the project, this limited the ability to explore differences in the values of time for different subsets of the air traveler population, since those subsets would have had too small a sample size for statistically significant estimates of the implied values of time. It was also decided to separate the choice experiments into two different sets of stated preference experiments to avoid presenting the survey respondents with an excessively complex set of choice alternatives. One set of experiments examined different alternatives for the flight from the origin to the destination airport while the other examined different alternatives for the components of the trip from the ground origin to the airport departure gate. A consequence of this experimental design is that it is unclear whether the estimated values of time for different components of the flight (flight time, time making an intermediate connection, and any delays) are consistent with the estimated values of time for the ground access and airport terminal components of trip, since these came from different stated preference experiments. The experimental design also provided no opportunity to estimate perceived values of qualitative level of service attributes, since this would have unduly complicated the choices faced by survey respondents and the sample size did not allow different attributes to be addressed in separate choice experiments.

APPROACH TO RESEARCH

The proposed approach to the research would be based on the design and conduct of a much larger sample web-based survey or other experimental approach that would allow more complex choice experiments by segmenting the choice alternatives in different ways in order to explore different aspects in subsets of the overall sample. As was done in the survey conducted as part of ACRP Project 03-19, this web-based survey or other approach would collect detailed household characteristics as well as details of the most recent air trip undertaken by the survey respondents or study participants and their air travel frequency over the prior year. These survey or study results would provide a large-sample profile of air travel characteristics at a national level, something that has not been done since the 2001/2002 National Household Travel Survey.

In order to broaden the pool of survey respondents to ensure that they provide a representative sample of the air traveling public, consideration should be given to supplementing the use of commercially available Internet survey panels by recruiting additional survey participants from segments of the flying public who may be underrepresented in Internet survey panels, such as members of airline frequent flier programs.

The larger survey sample size or number of study participants compared to the previous research would allow greater segmentation of the survey respondents or study participants and the use of different stated preference experiments to explore values of travel time in additional segments of total the air trip, such as time spent at the destination airport compared to the origin airport or time spent on the return trip compared to the outbound trip.

The proposed research would consist of the following tasks:

Phase I

Task 1 Literature review – Update the literature review undertaken as part of ACRP Project 03-19 to address subsequent literature

Task 2 Experimental design – Identify the issues to be addressed in the web-based survey or other experimental approach, prepare an experimental design to define the choice experiments to be performed, and specify the alternatives to be used in the choice experiments

Task 3 Survey design – Prepare a draft survey or other experimental instrument, review with Project Panel and revise to address comments and suggestions, and implement prototype survey or experimental approach

Task 4 Test survey or experimental methodology – Perform a pilot survey or experiments to test the survey instrument or experimental approach and experimental design

Task 5 Interim Report - Prepare and submit draft Interim Report and meet with Project Panel to review Phase I results and plans for Phase II

Phase II

Task 6 Recruit participants for the web-based survey or other experimental approach

Task 7 Conduct the survey or other experimental approach

Task 8 Analyze the results of the survey or other approach addressing the previous air travel by survey respondents or study participants and the relationship with respondent or participant household characteristics

Task 9 Analyze the results of the survey or other approach to determine how representative the survey respondents or study participants are to the national air travel population

Task 10 Estimate choice models from the results of the survey or other choice experiments and determine implied values of time, reliability, walking distance, and qualitative level of service attributes

Task 11 Final Report – Prepare draft Final Report documenting the project findings, submit for Project Panel review, revise to address comments and concerns, and coordinate with ACRP staff to publish final version.

COST AND JUSTIFICATION

It is estimated that 14 person-months of effort would be required to undertake the proposed tasks. Together with costs for travel and data acquisition, the funding required for the research is estimated at \$450,000. This includes \$80,000 for Internet survey panel costs and \$20,000 for travel and other direct expenses.

The level of effort is based on assigning person-months of effort to each of the above tasks and an average cost of \$25,000 per person-month based on the budgeted cost for a current ACRP project.

It is envisaged that the proposed research could be conducted over a period of approximately 24 months, including allowances for project panel review of draft intermediate and final deliverables.

RELATED RESEARCH

In addition to the research undertaken for ACRP Project 03-19 and the prior research documented in the literature review performed as part of that project, there have been a number of subsequent studies that have addressed air traveler values of time directly or indirectly through airport ground access mode choice or airport choice models. Two such papers were presented at the 2017 TRB Annual Meeting: Karina Hermawan and Amelia Regan, "On-Demand, App-Based Ride Services: An Emerging Ground Transportation Mode at Los Angeles International Airport" (Paper 17-01061); and Duncan Kisia, "Understanding Issues in Airport Ground Access Modeling: Lessons from a Revealed Preference Study of New York Metropolitan Area Airports" (Paper 17-06882). Both papers developed airport ground access mode choice models that allow the calculation of implied values of air traveler ground access time. In particular, the paper by Duncan Kisia includes a fairly detailed analysis of how household income influences perceived values of ground access travel time.

IDEA CREATOR

Person who first shared the idea with the IdeaHub community.

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OWNER/SUBMITTER

Person who volunteered to be responsible for developing the idea into a problem statement.

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