ACRP Problem Statement 17-03-01

Airport Managers’ Practical Guide to Connectivity Studies

ACRP Staff Comments

The proposed research overlaps with several ACRP reports and studies, including ACRP Project 03-31, Aligning Community Expectations with Airport Roles; ACRP Synthesis 7: Airport Economic Impact and Models; and ACRP Web-Only Document 20: Guidebook for Estimating the Economic Impact of Air Cargo.

TRB Aviation Committee Comments

AVIATION ECONOMICS AND FORECASTING: The proposed research is needed; there is therefore strong support for the problem statement. There is, however, concern that common definitions for connectivity do not exist which makes research difficult. There have been a number of attempts to measure connectivity values, but we lack an understanding of "connected for what." Supported, but with clarification of scope and focus. Research is needed to better understand how changes in connectivity impact the economy of the region served by an airport and the effect on air travel demand. Reviewing the existing literature on connectivity measures is only the first step. It is unclear how the authors of the problem statement envisage that different connectivity measures would be "evaluated" and how one would decide if one measure is "better" or more informative than another. Past studies to relate improved connectivity to increased air travel have suffered from a failure to disentangle cause and effect -- does improved connectivity result from a growth in air travel demand or stimulate it (or both)? While a practical guide for airport managers would be valuable, this is a complex and tricky issue, and care must be taken in looking for a simple approach not to fall into the "brain surgery for dummies" trap.

Review Panel Recommendation and Comments

Recommended. While not recommended as a stand-alone study, the efforts associated with case studies and previously published evaluations could be incorporated into 17-03-03.

AOC Disposition

This problem statement received an average rating of 3.4 points out of a possible 5 points among voting AOC members. The research efforts for 17-03-01 and 17-03-03 were combined, approved, and funded at $400,000 as ACRP Project 03-44.
Background:

Meeting a community’s or region’s air service needs is of paramount importance to airport managers. These needs can be realized through the number of destinations served by the nonstop routes from an airport; the airport and its region also benefit from the number of destinations that can be reached through connections. This direct and indirect “connectivity” has been found to be closely associated with productivity, economic growth and international trade. Typically, airports express their local and regional economic benefits based on passenger activity, level of employment, and multipliers; this method is helpful but does not necessarily convey the additional benefits that connectivity provides.

The study of connectivity is relatively new. In recent years, several “connectivity” studies and indices have been prepared by various experts to define the magnitude and value of connections that are available from airport hubs or “megahubs” as well as the implication of connectivity for small airports. The methodologies for defining connectivity are varied and rather complex and the studies focus on connectivity at varying scales (airport, region, country, world). Few of the studies provide detailed analysis of the links between connectivity and economic benefit. ACRP Report 132, The Role of US Airports in the National Economy, does focus on the economic benefits from connectivity, but uses a simpler set of connectivity measures. As a result, there is no widely accepted method for evaluating airport connectivity and its benefits.

Objective:

The purpose of this study is to provide a means for airports to identify and evaluate airport connectivity, understand the resulting economic benefits, and relay that information to stakeholders.

Proposed Tasks:

The study would identify the existing studies or reports that have been produced measuring the connectivity of airports; evaluate the models and other connectivity measures used; recommend an existing model or develop a new model to identify connectivity and evaluate resulting economic benefit; and summarize the methodology in a manner that can be easily understood and shared by airport managers. The scope could include consideration of the importance and meaning of connectivity to airports of various sizes; the appropriate geographic boundaries to use in regions with multiple airports; the ability to use connectivity as a means of evaluating the costs and benefits of changes to air service; and the possibility of developing a “connectivity index” at the airport, region, and national scale. The outcome would include a recommended or new model, as well as metrics that airports can use.

Funding:

$400,000

Duration:

12-18 months (depending on whether a new model is developed)
Related Research:


The Air Connectivity Index: Measuring Integration in the Global Air Transport Network
by Jean-François Arvis and Ben Shepherd, published by the World Bank Group, Published June 2011


Global Hub Economic Impact Study a Report Prepared for the Greater Toronto Airports Authority, Frontier Economics, February 2014

Airport Industry Connectivity Report 2015 by Airports Council International Europe in partnership with SEO Aviation Economics, Published June 24, 2015


OAG Megahubs Index, Published October 2015


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