



RESEARCH PROJECT CAPSULE [16-1PF]

February 2016

TECHNOLOGY TRANSFER PROGRAM

Development of a Guidebook for Determining the Value of Research Results

JUST THE FACTS:

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Duration:

24 months

End Date:

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Funding:

SPR: Pooled Fund: TT-Fed

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POINTS OF INTEREST:

Problem Addressed / Objective of Research / Methodology Used / Implementation Potential

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The RAC Region II has initiated a collaborative research program consortium through the Transportation Pooled Fund (TPF) Program. The research program is called the Southeast Transportation Consortium (STC) and is intended to encourage coordination among member states and provide resources and management of collaborative studies. The consortium intends to address high priority transportation research topics of common interest to the southeastern and adjoining states. Louisiana serves as the lead agency in the STC.



PROBLEM

The mission of the United States Department of Transportation (DOT) and state DOTs is to provide a fast, safe, efficient, and environmentally sound transportation system in order to enhance quality of life and facilitate economic growth. The research programs of state DOTs are intended to improve the understanding of local, regional, and statewide problems in all areas of transportation and to find solutions to those problems so that transportation agencies can establish more efficient strategic planning based on federal transportation appropriations.

Measuring the value of transportation research is vital to justify program efficiency and quality. There is a growing need for aggregating each state's research benefits at the national level in order to develop and support requests for future federal funding of transportation research. However, only a small number of state DOTs have a systematic and transparent approach to determine the value of their research programs.

Based on a review of current literature, the research team identified some major obstacles that inhibit state DOTs from developing approaches to evaluate research benefits. Those obstacles include: data scarcity; intangible qualitative benefits, benefits that are quantifiable only after years since research completion; and diverse interests (e.g., public agencies, political leaders, communities, and researchers).

It is important to provide solutions to overcome (or at least minimize) these obstacles through the application of quantification methods and measures based on data availability and research outcomes, so that a systematic, transparent, and practical guidebook can be developed for determining value of transportation research.

OBJECTIVE

Through this study, research projects may be categorized based on the types of information needed for determining and evaluating research benefits. The primary objective of this study is to develop a consistent approach for measuring and documenting the value of completed research.

METHODOLOGY

A survey of state DOTs and related research groups will be conducted to investigate existing procedures and future plans for evaluating the value of research. The survey will consist of an internet-based questionnaire and follow-up telephone interviews with selected respondents. Information collected from the survey and from continued literature review will be summarized, facilitating recognition of patterns or regularities in the research evaluation process.

Initially, a research project category hierarchy will be developed. The categories must be clearly defined, mutually exclusive, and collectively exhaustive. The hierarchy must include clear description of category attributes for consistent classification of projects.

Measures will be defined for determining research value. Development of a measurement process is dependent on data availability for the selected measure and practicality of the measurement process. By identifying all possible research objectives (e.g., improved safety, reliability, capacity, and efficiency), a list of potential measures can be developed. Research outcomes (e.g., technical products, guidebooks/manuals, summaries of current knowledge) must also be considered, as

different measures may apply for each. Methods for determining research value ratings should include a process for integrating various quantitative and qualitative measures. To do so, data types must be identified (e.g., quantitative percentages, qualitative ranks), measurement approaches must be standardized, relative weights among benefit categories must be introduced, and assessment tables must be developed to assist with the rating process.

Prior to developing the guideline document, a summary report of this research will be delivered to managers of this research for feedback about practitioner acceptance of the recommended process. Ultimately, the guidebook will include lists of project categories, research outcomes, potential benefits, and evaluation measures. Relationships among the lists will be described with tables, graphs, and/or diagrams. Guidance for determining research value ratings by integrating various measures and by developing assessment tables will be provided. Validated examples for each of the categories are also planned for the guidebook.

IMPLEMENTATION POTENTIAL

Findings from this project will be provided in a guidebook that contains procedures and examples for measuring and documenting value of completed research projects. Groups that may benefit from the guidebook include transportation agencies, their research programs, and other users of transportation research results.