



EUROPE

THE ARTS
CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND
HOMELAND SECURITY
TRANSPORTATION AND
INFRASTRUCTURE
WORKFORCE AND WORKPLACE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

[Jump down to document](#) ▼

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

[Browse Books & Publications](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore [RAND Europe](#)

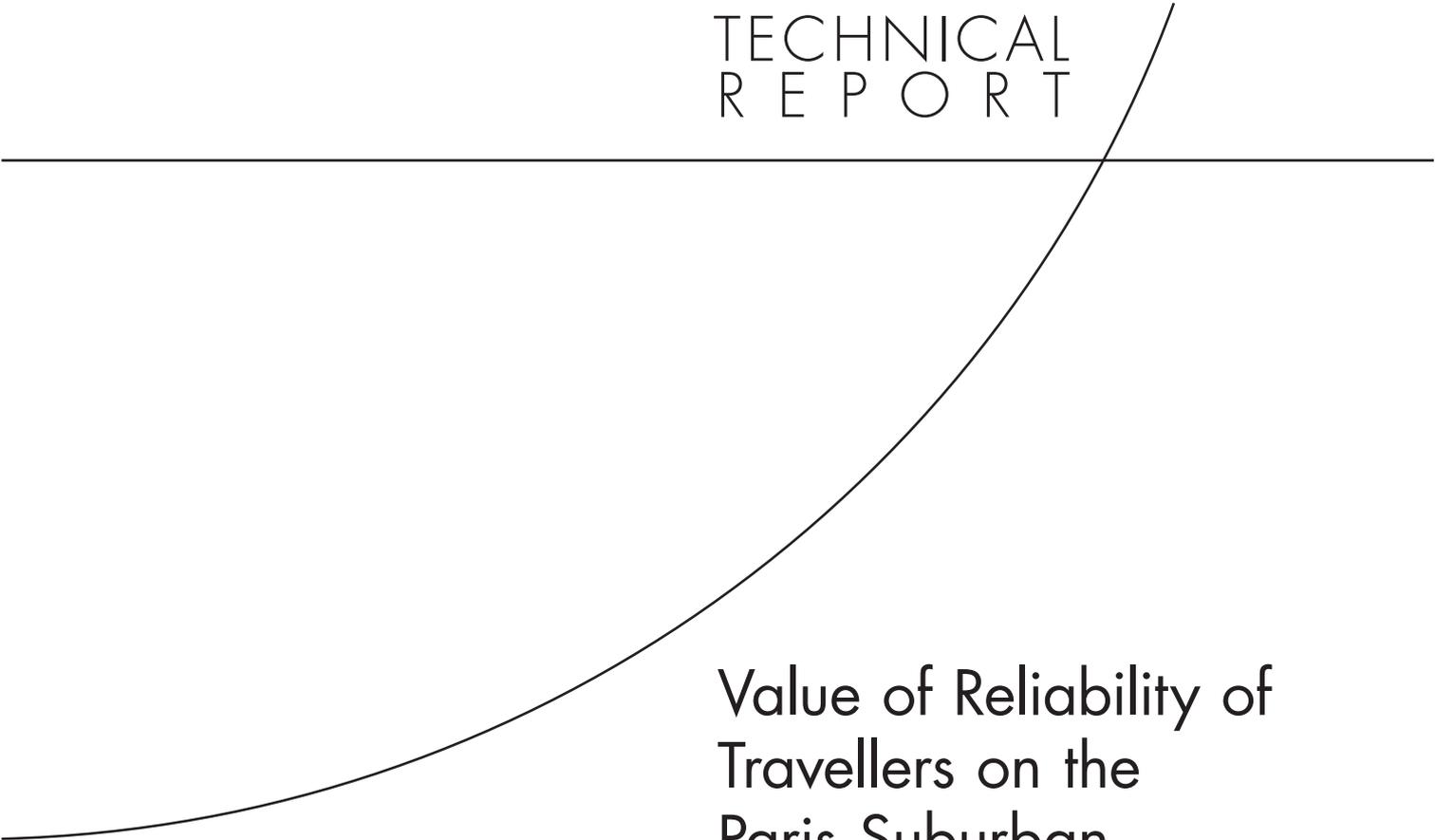
View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use.

This product is part of the RAND Corporation technical report series. Reports may include research findings on a specific topic that is limited in scope; present discussions of the methodology employed in research; provide literature reviews, survey instruments, modeling exercises, guidelines for practitioners and research professionals, and supporting documentation; or deliver preliminary findings. All RAND reports undergo rigorous peer review to ensure that they meet high standards for research quality and objectivity.

TECHNICAL
R E P O R T



Value of Reliability of Travellers on the Paris Suburban Railway Network

Technical Report on the
Data Analysis

Marco Kouwnhoven, Sebastian Caussade, Eric Kroes

Prepared for the Syndicat des Transports d'Ile de France

The research described in this report was prepared for the Syndicat des Transports d'Ile de France.

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2006 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2006 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213
Newtonweg 1, 2333 CP Leiden, The Netherlands
Westbrook Centre, Milton Road, Cambridge CB4 1YG, United Kingdom
Uhlandstraße 14, 10623 Berlin, Germany
RAND URL: <http://www.rand.org/>
RAND Europe URL: <http://www.rand.org/randeuropa>
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

Summary

This technical report presents the estimation results of the models that have been calibrated to obtain the key coefficients needed to determine the values-of-reliability. These estimation results are needed for the development of a robust method to appraise *a-priori* the monetary benefits of different possible measures to improve regularity of the Paris suburban train network. More specifically the use of this methodology is to guide decisions concerning specific projects aiming to make the radial rail lines operate more in line with their published timetables.

The models have been estimated using a large-scale Stated Preference (SP) data set that was collected specifically for this project. In the SP experiment the respondents had to choose between different service alternatives. Each alternative was described by the travel time, the frequency of short delays (delays between 5 and 15 minutes), the frequency of long delays (delays of more than 15 minutes), the comfort level and the level of information on delays. Each respondent had to make 18 choices between two service alternatives. One choice was added as a check question to examine whether the respondent had understood the SP experiment and was using “common sense” when answering the questions.

More than 2000 travellers were recruited to participate in the SP experiment. Each recruited person received a paper questionnaire with the choice pairs. Their choices were recorded during a telephone interview. From those recruited, about 1300 successful interviews were conducted. Of these, about 30 were excluded from the analysis. This was done either because their reported travel time was outside the agreed upon range, or there was some uncertainty whether the recruited person and the person making the choices were the same person, or they did not really trade between the alternatives (this is: they always choose the left alternative, or vice versa). 1273 respondents were remaining. At a later stage it was decided that the 134 respondents who failed to give the “logical” answer to the check question were excluded.

All estimated coefficients in the final model had intuitive signs and sizes. It was discovered that the extra disutility corresponding to each step in the level of delays decreases as the number of delays increases. The disutility of the first delayed train out of 20 is high, but the extra disutility of the 8th delayed train is much less. Furthermore, the analysis showed that the value of time for people commuting or travelling for education purposes is higher than for people travelling for other purposes. In addition, people travelling for travail/etudes purpose dislike short delays slightly more than people travelling for other purposes. On lines with a high regularity, having a seat is mainly valued for longer trip lengths; on lines with a bad regularity, having a seat is always valued highly, disregarding

the length of the travel. Finally, we found that information about the cause of a delay is always valued highly for journeys towards Paris, but for journeys from Paris this information is more valued if the perceived number of short delays is higher.

The model that has been developed here will be used in the application that is part of the next phase of the project and a separate report covering the entire project will follow.