Updated January 2020

Michael Bruhn Barfod: Curriculum Vitae

Current position

Associate Professor at the Department of Management, Technical University of Denmark (DTU).

Education

2012: PhD degree with thesis entitled: *Optimising Transport Decision Making using Customised Decision Models and Decision Conferences*, Department of Transport, DTU, February 2012.

2006: M.Sc. in Engineering, with master thesis entitled: *Assessment of Alternatives for a new Hornsherred Connection*, Centre for Traffic and Transport, DTU, June 2006.

Main Employments

2016-current: Associate professor at the Department of Management, DTU, within decision support systems, assessment methodologies, decision analysis, and transport planning.

2012-2016: Assistant professor at the Department of Transport, DTU, within decision support systems, assessment methodologies, decision analysis, and transport planning.

2008-2012: Part time PhD student and part time scientific assistant at the Department of Transport, DTU – both positions within decision support systems, assessment of transport projects and decision analysis.

2006-2008: Scientific assistant at the Centre for Traffic and Transport within the Decision Modelling Group, DTU.

Key qualifications

My main activities lie within transport planning, customised decision support systems, group decision making, sustainability assessments and applied multi-criteria decision analysis. I hold in-depth knowledge about assessment methodologies concerning transport infrastructure projects, initiatives and policies – both in respect to research and teaching. My research in particular applies theory in practice, and has often been carried out using real case data in various projects. These projects have besides articles (national as well as international) lead to the research results being applied both in industry and in the education provided at DTU.

Michael Bruhn Barfod, Vasevænget 19, 3600 Frederikssund, Denmark, Phone: +45 3050 8447, Email: mbbarfod@gmail.com

My main competences are:

- Applied research within transport planning, assessment methodologies, normative multi-criteria decision analysis, sustainability assessments, and customised decision support systems
- Composite assessments of transport project, initiatives and policies taking into account both conventional monetary impacts as well as wider strategic impacts
- Problem structuring and construction of decision support models through active participation from stakeholders and decision makers
- Construction of decision support models from initiation to implementation of various methodological approaches and data treatment
- Intelligent transport systems (ITS) and the appliance in urban areas towards sustainable development of the transport system
- Planning and teaching of several courses for both MSc, BSc and BEng students within assessment methodologies, decision support, planning theory and Geographical Information Systems (GIS) as well as supervisor for several MSc, BSc and BEng students

Grants

- Recipient of Professor P.H. Bendtsen's Traffic Research Award 2012, awarded for traffic and transport researchers under the age of 40. The award was given for the article '*An MCDA Approach for the Selection of Bike Projects based on Structuring and Appraising Activities*' published in European Journal of Operational Research.

Memberships of scientific committees, review panels

- Chairman for the assessment panel of the PhD dissertation of Rasmus Jørgensen, DTU's PhD programme
- 2016-2018: Managing guest editor of special issue in European Journal of Transport Infrastructure Research
- 2018: Chairman for the assessment panel of the PhD dissertation of Liva Abele, DTU's PhD programme
- 2015: Opponent for the doctoral dissertation of Katja Estlander, Aalto University's Doctoral Programme in Science

Education and Training

2014: Education in University Teaching at DTU. The course issued by LearningLab at DTU (UDTU) covers approximately a work load of 250 hours distributed on 4 modules. The modules are covering subject matters such as teaching and learning, teaching methods and planning, feedback and evaluation methods and a teaching development project. The latter contains two written reports and an examination.

Language skills

	Reading	Speaking	Writing
Danish	Native language	Native language	Native language
English	Perfect	Perfect	Perfect
Spanish	Good	Limited	Limited
German	Good	Limited	Limited

Experience record

The following presents an overview of selected projects in which I have played (and play) a major role:

SolutionsPlus: Integrating Urban Electric Mobility Solutions (2020-2023)

SolutionsPlus is a Horizon 2020 project under the Inco Flagship Innovation Action on "urban mobility and sustainable electrification in large urban areas in developing and emerging economies. The project aims at integrating urban mobility solutions in the context of the Paris agreement, the sustainable development goals and the new urban agenda.

Project owner: EU, H2020
Project form: Research project
Project Leader DTU: Subash Dhar/Michael Bruhn Barfod

MASSHIP: MRV-related information for Advancing Sustainable Shipping (2019-2020)

MASSHIP aims to support the evidence-based policy dialogue on greening international shipping by analysing available Monitoring, Reporting and Verification (MRV) data on fuel consumption and CO2 emission from leading Danish companies. The analysis will be used to compare the approaches that the EU and IMO follow in enhancing shipping sustainability, to assess the effectiveness of the proposed performance indices and to draw policy and R&D recommendations on the subject.

Project owner: Orients Fund
Project form: Research project
Project Leader DTU: Michael Bruhn Barfod

EUFAL: Electric Urban Freight and Logistics (2018-2020)

The overall purpose of the EUFAL research project is to define measures and policies to promote the use of electric vehicles in city logistics (commercial transport). This includes electrification of existing vehicle fleets in logistic systems, and optimisation of these systems towards the use of electric vehicles. The project seeks to develop a platform for the exchange of knowledge and experience for actors within industry, policy and research.

Project owner: The Danish Innovation Fund

Project form: Research project
Project Leader DTU: Dario Pacino

CyberShip: Cyber Resilience for the Shipping Industry (2017-2019)

The purpose of CyberShip is to a gain a wider understanding of the possible cyber threats related to commercial ships. Through a larger knowledge and understanding of the specific threats, the project will identify and map these threats for ships and propose a number of measures to reduce the threats. Thus, the overall research question for CyberShip is how to reduce threats from cyber attacks for commercial ships.

Project owner: The Danish Maritime Fund & Orients Fund
Project form: Research project
Project Leader: Michael Bruhn Barfod

POTENTIAL: Potential for quantification of disruptive impacts in public transport (2016)

The purpose of POTENTIAL is to develop a GIS based operational tool for quantification, modelling, visualisation and analysing the impacts of a public transport system. A number of models are developed that contributes with information by uncovering opportunities and potential. The background is the current lack of methodology that can assist planners in meeting the transport demands as they exist for people under specific socio-economic-geographic conditions.

Project owner: Aarhus Light Rail
Project form: Public sector consultancy
Project Leader: Michael Bruhn Barfod

SUSTAIN: National transport planning – sustainability, institutions and tools (2012-2017)

The goal of SUSTAIN is to establish a research- and dialogue based National Sustainable Transport Planning (NSTP) framework that ensures a cross-disciplinary and comprehensive approach to sustainability. SUSTAIN will combine social and technical sciences within planning research following three dimensions: 1) sustainability, 2) institutions and 3) tools.

Project owner: The Innovation Fund (former Danish Council for Strategic Research)
Project form: Public research project (Danish Agency for Science Technology and Innovation)
Project Leader: Michael Bruhn Barfod

SELECT: Suitable electromobility for commercial transport (2012-2015)

SELECT provides an in-depth research on the suitability of electric vehicles for commercial transport and is based on the results of projects such as Green eMotion or tests in pilot regions such as “e-mobility Berlin”, “E-City Logistics” in Berlin, “VLOTTE” in Austria or “Test an Elbil” in Denmark. In order to achieve its objectives SELECT: 1) Runs empirical research trials in Austria, Denmark and Germany based on detailed

surveys and questionnaires in different companies and sectors. 2) Develops a methodological fleet management framework for electric vehicles and mixed fleets. 3) Develops recommendations for vehicle manufacturers, governmental organisations as well as commercial transport organisations.

Project owner: The Danish Council for Strategic Research
Project form: Public research project (Danish Agency for Science Technology and Innovation)
Project Leader DTU: Sigal Kaplan

UNITE: Uncertainties in Transport Project Evaluation (2009-2013)

The project analyses forecast accuracy based on an extensive empirical study that is referred to an organizational context. Recommendations and guidelines for model use are given. This is used as a context, within which models can be addressed with regard to uncertainties on cost estimates, traffic forecasts and cost-benefit analyses. The project was expected to improve Danish transport model and planning practice by eliminating systematic model bias and by quantifying and reducing model uncertainties for decision support.

Project owner: The Danish Council for Strategic Research
Project form: Public research project (Danish Agency for Science Technology and Innovation)
Project Leader: Otto Anker Nielsen

CPP I-III: Principles and methods for prioritizing of bike projects (2009-2011)

The frame of the projects consisted of the development of principles and a methodological approach in connection with the prioritization of bike funds in Denmark. In January 2009 an agreement with regard to green transport policy was initiated where among other things a frame of 1 billion Danish Kroner (DKK) was assigned for any bike related projects over a five year period (2009-2014). The overall technical prioritization task was to develop a framework model to handle and prioritize the funds set available. Thus, the model should be able to captivate various impacts from bike related projects whether they consisted of traditional bike paths, whole bike cities, safety initiatives, etc.

Project owner CPP I-III: The Danish Road Directorate
Project form CPP I-III: Public sector consultancy
Project Leader CPP III: Kim Bang Salling
Project Leader CPP I-II: Steen Leleur

Øresund ECO-MOBILITY - Knowledge and innovation for climate friendly transport in the Øresund Region (2010-2012)

The Øresund EcoMobility project strived to gather competencies in a unified network of universities, industries and regional authorities within the region. Amongst others a cross-disciplinary decision support priotization tool was set out integrating impacts especially non-monetary within a framework setting containing multi-criteria decision analysis and decision conferencing

Project owner: EU Interreg

Project form: Public sector consultancy and research project
Project Leader DTU: Steen Leleur

ITP: Prioritising ITS projects in Denmark (2010)

The frame of the projects consisted of the development of principles and a methodological approach in connection with the prioritization of funds for ITS (Intelligent Transport Systems) in Denmark. The overall technical prioritisation task was to develop a framework model to handle and prioritise the funds set available. Thus, the model should be able to captivate various impacts from ITS related projects.

Project owner: The Danish Road Directorate
Project form: Public sector consultancy
Project Leader: Michael Bruhn Barfod

Assessment of public transport projects in Sweden (2008-2009)

The goal of the project was to address the problems associated with the assessment of impacts of certain public transport investments in Sweden. Besides the known socio-economic impacts a number of more soft impacts are also influencing the decision making. The project made an attempt to develop a methodology for taking such impacts into account along with the socio-economic analysis. The approach was applied to two different public transport projects in Sweden.

Project owner: VINNOVA
Project form: Public research project
Project Leader DTU: Steen Leleur

TEN CONNECT Task 4B (2007-2009)

The TEN CONNECT project concerned an overall uniform and coherent tool to assess the major transport corridors in EU27 member countries and their extension into the neighboring countries and to other major trade partners. The project amongst others contained the initiation of a decision support tool both capable of assessing monetary and non-monetary impacts. A result from the project was a set of decision support models, CBA-TEN and MCA-TEN and a guidance report.

Project owner: European Commission (DG TREN)
Project form: Public sector consultancy
Project Leader DTU: Steen Leleur

STMØ: Strategic transport management for the Øresund region (2006-2008)

Strategic Transport Management in the Øesund region, focused on optimising sustainable development of transport in the Øresund Region, and was organised in four barrier teams identifying Logistical and technological barriers, Economic and structural barriers, Infrastructural, planning and environmental barriers and finally in the barriers caused by differences in Legal practices.

Project owner: EU Interreg IIIA
Project form: Public research project
Project Leader DTU: Steen Leleur

MOTOS: Transport modelling: Towards operational standards in Europe (2006-2007)

The goal of MOTOS was to support transport policy in Europe by defining common good practice principles for national and regional transport modelling. These principles were to satisfy the immediate needs of model developers in the new member states, and contribute to establishing a standardised approach for transport modelling in the European Union.

Project owner: EU Commission
Project form: Public research project
Project Leader DTU: Otto Anker Nielsen