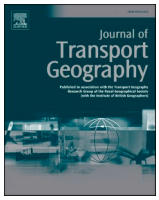
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Book review

Karen Lucas and Karel Martens with Floridea Di Ciommo and Ariane Dupont-Kieffer. (Eds.), Measuring Transport Equity, Elsevier (2019). ISBN. (9780128148181).

The purpose of the book is to set out a range of practical methods and evaluation tools to allow readers to select appropriate approaches to assist with the measurement of fair allocation of transport resources.

As a UK based professional involved in the appraisal and evaluation of equality and social impacts of transport projects and plans, I found the approaches and tools in this book to contain innovative and practical ideas that could be applied to a range of transport interventions, particularly where formal guidance and methodologies for the measurement of transport equity is limited. Although unable to provide detail for every chapter, I have highlighted chapters with approaches that could have most relevance to my specific area of work.

The book is divided into five parts with Part One, the *Introduction*, providing an overview of the key dimensions to be addressed in the development of equity indicators; benefits and burdens of indicators, distinguishing and defining population groups and policy relevance. It also sets out the key components, framings and metrics for measuring transport equity. Parts Two, Three and Four include 16 chapters in total, with each one including: an introduction to a transport equity issue, a methodology for assessment or measurement, a case study example of the applied methodology, the policy relevance of the measure (including potential for improvement and adaptions) and further reading.

Part Two includes ideas for measuring the *Benefits of Transport: Accessibility*. In Chapter 3 Karen Martels and Jeroen Bastiaanssen provide an approach for an index to measure accessibility poverty risk, a useful tool which can help policy makers set a standard from which to assess equity impacts of transport interventions. Chapter 6 Can the Urban poor reach their jobs? Evaluating equality effects of relocation and public transport projects in Ahmedabad, India (Mark Brussel, Mark Zuidgeest, Frans van den Bosch, Talat Munshi and Martin van Maarseveen) sets out a useful methodology, which not only evaluates accessibility with regards to the transport system, but within wider context of land use allocation for housing developments. This approach could be applied to housing projects globally, particularly in cities such as London, where new centrally located residential development can often be to the detriment of displaced social housing residents with regards to accessibility and mobility. In Chapter 7, Imuentinyan Aivinhenyo and Mark Zuidgeest examine the affordability impact on destination accessibility measures for low-income societies. The proposed measurement tool includes a Hansen based gravity model comprising an affordability component, which in practical application could be used by public transport operators or authorities to develop a suitable approach for determining equitable zone-based public transport fare structures or subsidy schemes.

In Part Three, authors describe approaches to measure the *Burdens of transport: Health, environment and other externalities*. Chapter 8 (Haneen Khreis and Mark J. Nieuwenhuijsen) examines a potential quantitative approach to measuring distribution of health impacts of urban transport. This chapter highlights the current lack of equity considerations in health impact assessments, especially with regards to qualitative assessment. There is certainly potential for integration of health and equality impact assessments using this approach to measure transport related health impacts in the context of environmental impact assessment and sustainability appraisal work.

Chapter 12 (Tanu Priya Uteng, Yamini Jain Singh and Tiffany Lam) describes three very interesting case studies for improving the safety and daily mobilities of women in urban areas in an urban planning context. The case studies include METRAC's community safety audit tool, Mexico City's Safe City and Safe public spaces for women and girls program and the use of the smartphone app-based tool, 'Safetipin' in Delhi, Bogota and Nairobi.

Part Four sets out methodologies for measuring *Social outcomes from transport interventions*. Chapter 17 (Floridea Di Ciommo, Francesc Magrinyá, Gianni Rondinella and Yoram Shiftan) describes a behavioural framework for needs-based transport assessment. This framework can be applied to assessment and evaluation processes to understand the extent to which identified needs were met before and after the implementation of transport interventions.

In Chapter 18, Alex Karner and Aaron Golub propose a GIS-based approach to assessing the equity impacts of a transportation investment program, with case studies provided in the United States context of Civil rights, environmental justice and regional planning. This of timely relevance given the Black Lives Matter movement and the new US administration's issuing of an Executive Order on advancing racial equity and support for underserved communities through the Federal Government. The approach is useful in considering the components of an investment program as a whole whilst identifying multiple dimensions of impacts at a project level to provide a more meaningful equity analysis.

For practitioners in transport and spatial planning, this book provides a valuable collection of tools and approaches for measuring equity of social, economic and environmental outcomes. The nature of the approaches allows for further development or adaption and application to a range of scenarios and geographical areas. The policy relevance sections within each chapter also provide useful suggestions of practical application with further reading sections directing to relevant and additional methodologies for consideration. However, the availability or validity of specific spatial, demographic and socio-economic datasets to support such approaches could limit practical application in some cases. Primary research can help to fill data gaps, particularly with regards to understanding the travel behaviours and needs of different groups, but many governmental organisations often lack the resources to undertake such data collection exercises. Many of the approaches are developed using GIS software and spatial analysis techniques. This requires skills

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sets usually found within GIS teams of government organisations with software such as ArcGIS also being widely utilised. However, it is important that the GIS specialist has a clear understanding of the desired purpose and outcomes of the approach and relevance as a real world scenario. This is something that could be improved by further developing advanced GIS skills amongst transport practitioners. Detailed guidance, with step by step methodology as well as academic support in some cases could also help with the robust implementation of the tools and approaches.

The measurement of transport equity has not been a priority of most governments in transport policy and projects. Even where social and equality outcomes form part of a transport appraisal framework, decision making is often made on an overall economic basis with limited regard for how economic benefits are distributed amongst the population. However, the Covid-19 pandemic has clearly highlighted existing transport equity issues and created new challenges and opportunities for governments. In many countries, the existing transport system has failed to provide safe and equitable access to employment, education, healthcare and social support networks. As such, transport interventions are also becoming an important part of Covid-19 recovery, including a more equitable allocation of road space, infrastructure investment and reviews of policy and legislation.

In their closing remarks, the editors urge the reader to join them in the quest to make the transport sector fairer and more socially inclusive. This book, although published prior to the pandemic, contains valuable ideas that could contribute to the reducing inequity for some of the most vulnerable in society, especially where the gap has been amplified as a result of the cumulative impacts of the Covid-19 pandemic (and responses to the pandemic). It also paves the way for future development of approaches and research in this area within the wider global climate, political, economic challenges ahead.

Please note that the views expressed in this review are my own and may not reflect those of AECOM.

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