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Book review

**Hickman R., Givoni M., Bonilla D., Banister D. (Eds) (2015) *Handbook on Transport and Development.* Edward Elgar, Cheltenham, UK & Northampton MA, USA. ISBN 978 0 85793 724 5 hardback; xxv & pp. 698. £205. Elgaronline ISBN 978 0 85793 726 1**

The changing nexus between transport and development is the focus of this important 45 chapter handbook, and it is appropriately dedicated to the seminal work of the late Professors Sir Peter Hall and Piet Rietveld. The likely development impacts of transport infrastructure projects are examined, together with psychological and cultural factors surrounding travel. Development often follows transport infrastructure investment, especially historically when most traffic was captive, but sometimes development form helps to shape transport investment. Lower density, dispersed cities are more reliant on road investment, whereas more compact, higher density cities depend more on public transport, walking and cycling. However these linkages between transport and development are complex and contested.

The handbook's four Editors have brought together an impressive group of 75 leading contributors to transport and development research from 11 countries in 5 continents, mainly from the United Kingdom, the United States of America, The Netherlands and Australia. It is therefore surprising and disappointing that the Global South is largely ignored, as are impacts of limited access highways and fixed link bridges and tunnels on spatial development. Freight transport is limited to one chapter. Unfortunately many of the chapters are rather dated, fail to include much recent research and read as though they were written at least two or three years ago. Three chapters contain no references published later than 2010, 12 other chapters have 3 or fewer recent references, whilst only 9 chapters have 10 or more such references. This is a particular concern with dynamic topics such as transport's oil burning emissions, telecommunications and travel, e-retailing and oil vulnerability. The handbook's largely urban focus should have been recognised in the title, as Transport and Urban Development would have been a fairer reflection of the multi-faceted research it reports on.

Following the introduction, the handbook is divided into four sections: Part II on Urban Structure and Travel (13 chapters) examines research on the built environment and its relationship with travel behaviour from an international perspective; Part III explores varied perspectives on Transport and Spatial Impacts (16 chapters); Part IV examines Wider Dimensions in Transport and Development relationships (14 chapters); Part V, Summary and Conclusions, synthesizes the wide range of historic and future perspectives on transport and development relationships and points to prospective changes in urban development and future research agendas.

In Part II, Stoker et al. differentiate regional and neighbourhood scales and measure and relate sprawl to vehicle miles travelled and modal shares. Travel demand elasticities are derived from density, diversity and design and related to destination accessibility and distance to transit. Newman and Kenworthy analyse transport energy consumption, carbon dioxide emissions and reduction strategies. Transport in Atlanta, USA with 6 people per hectare and high GDP per capita emits 75 times more carbon dioxide than Ho Chi Minh city in Vietnam with 350 people per hectare and much lower GDP per capita. Headicar argues, from an Oxfordshire example, that policymaking overlooks the strategic dimension of commuting to jobs outside the local settlement. Hickman and Banister use longitudinal analysis to measure relationships between built environment, socio-economic status and commuting in Surrey, UK, with 'stayers' using less transport energy than 'inmovers' or 'outmovers', but increasing transport energy use over time as their car use grows. Lower density areas are increasing transport energy consumption. Gordon and Lee find that average US commuting times increase with urban size but overall commuting and non-work travel remain despite increases in city size and sprawl. Mutual accessibility is a factor in choice of homes, workplace and other activities. Echenique and Donald find that in SouthEast England only high employment concentrations attract high public transport mode share and longer trip distances. Næss compares Hangzhou, China with Copenhagen, Denmark and finds a closer relationship between urban structure and travel choices, modified by specialist job skills, interests and time availability. Curtis in Perth, Australia finds network connectivity and better service frequency as key to achieving higher public transport mode shares. Cao explores self-selection effects on neighbourhood type and travel in northern California. Van Wee and Mokhtarian also review the role of attitudes in terms of residential self-selection and travel behaviour. Krizek et al. find that 54% of respondents in the Twin Cities, Minnesota USA move to neighbourhoods similar to their previous neighbourhood. Handy finds that community design impacts on the use of walking and cycling and considers what policies, investments and mechanisms are more supportive. Finally, Marshall et al. analyse street connectivity, street network density and street patterns in 24 Californian cities with up to 100,000 residents to establish associations with less car driving and more walking and cycling.

Part III examines different perspectives on the spatial impacts of transport investments. 'Before' (ex-ante) research far outweighs the far too few 'After' (ex-post) analyses. Impact is seen mainly in economic terms. Rietveld and Bruinsma revisit transport's historic role as a main driving force in urban development and theories that examine how transport investment can affect spatial change and development. Scale is important and local gains may be offset at regional or national levels. Impacts can be negative. Iacono and Levinson examine evaluation methods and the limitations of cost-benefit analysis. They advocate the use of regional economic analysis tools and changes in land values. Holvad and Leleur consider how wider economic impacts can be integrated into project appraisal. Effects of improved accessibility can be assessed through computable general equilibrium modelling (CGE). Hensher and Li consider traffic congestion as the largest challenge facing urban freight distribution on roads and at transfer points, and advocate multi-modal hubs at key locations. Feitelson and Rotem-Mindali assessment of the mixed impacts of light rapid transit (LRT) and bus rapid transit (BRT) on car dominated cities shows little impact beyond the local (micro) level, but this chapter is weakened by reliance on a very dated reference list.

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Chen and Hall analyse the wider impacts of high-speed trains in market-led Britain and interventionist France on reducing inter and intra-regional inequality. Results are mixed and critical factors are national political economy, governance and planning approaches, local political leadership and city type. Jones' ex-post analysis of the wider impacts of London's Jubilee Line Extension reveals impacts of increased land and property values and faster development in London's former Docklands, contradicting the initial ex-ante low cost-benefit ratio. However few prior local residents found employment. Mejia-Dorantes finds that Madrid's new Metrosur line increased economic activity around stations like Getafe nearer the centre rather than at Fuenlabrada furthest away. Hidalgo and Munoz discuss the recent very rapid increase in BRT systems in less developed countries and BRT's benefits of low-cost urban mobility, reliability and comfort. However, they fail to explain why there has been little adoption and some abandonment of BRT in developed countries. Their inclusion of Buses with High Levels of Service (BHLS) is confusing as these systems have very different capabilities to BRT. Goetz examines Denver International Airport as an 'aerotropolis' - a hub for new city development and increased agglomeration economies – but poses questions about environmental sustainability. Cantarelli and Flyvbjerg examine the decision-making process for major infrastructure projects, consider cost and benefit misinformation, reject ownership type as a factor in project performance and show the importance of contracting strategy and the amount of private financing. The scarcity of ex-post analysis is highlighted. Annema considers the effectiveness of road pricing in reducing traffic congestion and alleviating negative impacts of road investment. Politicians' short-term re-election goal is an important factor in investment decisions. Stokes examines the relationship between travel behaviour and poverty and accessibility planning is offered as a way to improve equity outcomes. Kenyon explores the role of transport in social wellbeing and lack of transport as a barrier. Hamiduddin reviews the impact of cars at the neighbourhood level, historic UK and USA design principles and case studies of approaches to community designed housing in Germany. Finally, Geurs and Halden review location, person and utility-based accessibility planning in the Netherlands and UK. The choice of accessibility measures is critical and moves towards transport user perspectives of travel time and delay are noted.

Part IV explores the wider non-physical context that influences mobility patterns and how e-technology may influence the need to travel. Jensen shows that travel is more than a derived demand and there are psychological, sociological and cultural contexts to travel and development, in addition to spatial and temporal impacts. Matthies and Klockner suggest that car-fixation could explain the difficulty in reducing car usage. Cognitive mechanisms and socialization processes influence travel behaviour habits. Strategies are proposed to change behaviour when home or job moves occur or through incentives such as free travel cards. Much fuller consideration is needed of Anable's segmentation of car drivers into four groups ranging from car addicts to environmentalists. Cohen-Blankshtain examines the potential of ICTs for changing travel behaviours, but finds that they do not directly replace cars and have varied effects. Rotem-Mindali finds that e-retailing varies greatly by product type and consumer and ICT use can generate more shopping trips. Dowling examines automobilities and travel with children from an Australian context where there is often little alternative to car use. Hjorthol and Nordbakke assess car driving amongst older people, lifecycle changes, mobility patterns and wellbeing in Scandinavia, and the negative impacts of loss of car use. Dane et al. examine activity participation, travel behaviour and travel expenditure amongst the elderly in the Netherlands. Activity patterns become more flexible and off-peak but travel time and distance can increase. Dodson et al. examine 'oil price vulnerability' in Brisbane, Australia with the greatest impacts on lower income families in the suburbs. Holden and Linnerud suggest that sustainable passenger transport policies aimed at reducing energy consumption and carbon dioxide emission may have unintended consequences by ignoring the massive increase in leisure travel. Hillman warns that fossil-fuel dependence causes climate change and huge ecological problems and raises the idea of personal carbon allowances and aggregate emission caps. Geerlings and Avelino assess the role of transition management in sustainable development and difficulty of finding participants and leaders for change. Holzapfel and Meyfahrt examine Kassel's regional tram-train system and its role in strengthening central city functions and promoting accessibility to smaller municipalities. Stead discusses EU Transport Policy since 1950 with liberalization of transport markets and investment in Trans-European Transport Networks to reduce border constraints on interaction. Outcomes include a road building focus and little regard for sustainability, environment, health and safety. Finally, Schwanen assesses transport research and temporality. Part V concludes on research in transport and development over the past 30 years and into the future.

This handbook draws together deep insights into the multi faceted relationships between urban development and transport. It should be essential reading for anyone researching or teaching transport and development relationships.

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