

Editorial

Making equity work: implementing socially-targeted urban transport policies

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1. Introduction

Lower income and other socially vulnerable groups are more prone to be negatively affected by urban transport decision making. Recent initiatives from governments and international development agencies at different scales have attempted to redress social inequalities associated with urban transport. Despite this being a recurrent phenomenon in most parts of the global north and south there is a gap in the literature regarding the management, finance and policy considerations in making progressive transport policies a reality. Although there is a wide range of literature documenting emerging socially-targeted urban transport plans, policies and projects, there is little debate and reflection in academic circles around the administrative, governance and financial considerations for the implementation and sustainability of such policies.

The concept of equity can be understood as the absence of systemic inequalities between different social groups, and it embodies a concern to reduce systematic discrimination and marginalisation (Wiles and Kobayashi, 2009). Examples of systemic inequalities include differences between population groups, geographical areas, and social identities in outcomes such as health and healthcare, access to employment and employment, education and social support, and safety from crime and environmental hazards. This Themed Volume and the contributions that constitute it part from the recognition that transport plays a differentiating role in each of these different areas.

The concept of equity is closely related to that of (in)equality. Arithmetically, inequality involves people receiving disproportionately less quantity of some attribute within a certain distribution. Inequality therefore refers to quantifiable imbalances based on personal attributes of members of a given group (Smith, 1987). Such imbalances are the reflection of

levels of discrimination towards some groups that become disproportionately better or worse off than others in relation to elements of social (dis)advantage such as income, wealth, opportunities, or health. As such, these imbalances have a moral and normative dimension (DeVerteuil, 2009).

The spirit of this moral dimension of inequality is captured by the notion of equity (DeVerteuil, 2009). Both equity and (in)equality often overlap as some distributions can be unjust and unequal, such as an uneven distribution of wealth, while others can be equal but not equitable, such as a uniform distribution of resources despite higher needs of specific social groups within a given society. Examining these inequities from economic, social, and spatial perspectives (Manderscheid and Bergman, 2008; DeVerteuil, 2009; Adama, 2012) in the context of urban transport decision making can shed light on the knock-off implications of specific policies and practices from different actors in the transport system for citizens with various degrees of (dis)advantage. The focus on equity in its different forms is a necessary one for the maximisation of the positive consequences of transport planning and management.

The focus of this Themed Volume is directly aligned with the Journal's theme of transport management as it contributes to the body of knowledge and evidence base about how the management of transport systems and policies within different socio-economic, regulatory, governance and functional environments can lead to a more (or less) progressive and equitable urban development. This Themed Volume comprises eight papers seeking to address issues related to equity in transport with a focus on the specific challenges faced by cities in the global south. As part of this Volume aspects of public transport operations, vehicle automation and electrification, commuting and paratransit are covered.

2. Framing the need for equity centred research in transport business and management in rapidly growing economies

The planning, development and management of transport infrastructure and services, and the definition of policies influencing urban mobility in cities of the global south has been historically governed by principles of efficiency, resource maximisation and assumptions of direct links between economic growth and infrastructure investments. Arguably, this is the result of a longstanding tradition of planning adopted mainly from North America and Europe which has since been imported and adapted, with various degrees of success, in rapidly developing contexts (Dimitriou and Gakenheimer, 2011; Levy and Dávila, 2017; Oviedo and Guzman, 2020; Oviedo and Nieto-Combariza, 2021). The critique to traditional principles of urban transport planning has led to growing emphasis in both research and practice on more socially nuanced and redistribution oriented planning and delivery of infrastructure and services for urban mobility (Levy, 2013; Lucas and Jones, 2012; Martens, 2018).

While there is growing focus on redistribution and equity as relevant criteria in the assessment of urban transport decision making, a significant volume of research in this area has been produced from and about the global north, often overlooking the complexities inherent to urban development processes in emerging economies with higher rates of urbanisation, population growth, structural inequalities and levels of informality than their more industrialised counterparts. Furthermore, traditional approaches to design, construction and operation of public transport systems in cities in regions such as Latin

America, Africa and various parts of Asia still respond to planning criteria and regimes grounded in behavioural economics and on aggregated data sources that focus on the average user, seeking to maximise the number of beneficiaries of decision making while often bypassing minorities, vulnerable groups, and those unable to participate in planning processes (Levy, 2013).

Many of the contributions of this Themed Volume address and reflect efforts for understanding how transport modes and systems influence peoples' capacity to access goods, services and activities, and their interactions with complex and rapidly changing land use systems and technologies for urban transport. These are aligned with global objectives for sustainable development such as the reduction of inequalities and decarbonisation or urban development. The Sustainable Development Goals (SDGs) agreed by the United Nations (2015) place transport explicitly as a mechanisms for achieving these objectives, as best illustrated by goal 11 (Sustainable cities and communities), which aims to "by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, ...with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons" (UN, 2015, p.21). This target has an explicit dimension of accessibility and equity highlighting the role of transport in bridging disparities across social groups and socio-economic conditions. Targets of the United Nations' New Urban Agenda also highlight the promotion of equitable access, with emphasis on low income and peripheral urban populations to sustainable transport that enables participation in both social and economic activities (Caprotti *et al.*, 2017).

These considerations are further compounded by the rapid evolution of technologies and the emphasis from global, national and local actors in the modernisation of transport to reduce carbon emissions (Jennings, 2020). Many structural challenges for sustainable and inclusive transport such as high dependency of informal employment for securing livelihoods in large segments of urban populations in the global south (Günther and Launov, 2012), the need for public transport reforms that address longstanding inefficiencies and externalities associated with traditional and, often informal, public transport systems (Cervero and Golub, 2007; Gómez-Lobo, 2020; Behrens, Chalermpong and Oviedo, 2021), and the significant gaps in accessibility between rich and poor (Bryceson, Mbara and Maunder, 2003; Slovic *et al.*, 2019) remain across cities of the global south. Despite such structural challenges, the emergence of new forms of urban mobility in the shared economy and new technologies for urban transport as relevant considerations for policy, planning and management are also growing in scale and complexity in global south cities (Marsden *et al.*, 2019; Priye and Manoj, 2020; Acheampong, 2021; Sabogal-Cardona *et al.*, 2021). All these challenges require a lens of equity to inform their future evolution and their role in contributing to fair redistribution of access and opportunities.

3. An emerging research agenda: content of the themed volume

3.1. Public transport as a driver of (in)equity

The role of public transport investment is key to reducing equity related concerns among vulnerable groups. In their paper, Juan Pablo Bocarejo and Luis Felipe Urrego assess the changes brought about by improvements in public transport in the city of Bogota over a twenty year period and the impacts on equity through better accessibility and lesser

externalities. Between the period 1999 and 2019 there are evident improvements to the public transport system in the city including the extension of the Transmilenio Bus Rapid Transit (BRT), the implementation of an Integrated Public Transport System and the introduction of subsidies for the most vulnerable in the population. The results show an increase in the overall generalised cost of commuting due to congestion, but with little impact on low income groups who rely mostly on public transport. Access to opportunities for the poorest has increased through better accessibility and emissions and road fatalities have reduced.

Yilin Wang, Mengqiu Cao, Yuqi Liu, Runing Ye, Xing Gao and Liang Ma study public transport equity in Shenyang, China using structural equation modelling. In their paper they aim to explore the effects of public transport equity in relation to public transport quality, public participation and policy related to public transport. The analysis shows three latent variables representing the main characteristics of public transport equity: accessibility, affordability and social impacts. At the same time public transport quality, public participation and policy all influence positively public transport equity. Furthermore the study finds that public participation has a significant positive influence on quality and policies related to public transport. Their paper suggests policies that are designed to improve the quality of public transport services, including the fare concessions and the promotion of public participation in decision making. And whilst these findings and recommendations resonate with the case study city of Shenyang, these could be transferred to other cities in China and beyond.

3.2. Transport and land use integration and management from an equity perspective

The need to integrate land use considerations is key to public transport planning. This is demonstrated in the paper by Jhair Manrique, Ruben Cordera, Emilio G. Moreno and Borja Alonso Oreña when analysing equity in the Bucaramanga Metropolitan Area in Colombia. The lack of integration between land development in the city and the transportation system has resulted in traffic congestion and car dependency. As a result, the authorities implemented the Metrolinea Integrated Transport System Bus Rapid Transit to support a modal shift to public transport use. The study proposes a new methodology that integrates the transport model developed using VISUM and a land use model implemented in Python to analyse accessibility to the public transport system. The model is based on four sub-models that integrate transport, residential location, location of economic activities and finally, accessibility. The analysis uses social indexes to measure the demand for services and infrastructure. The findings point towards areas where the Bus Rapid Transit system is inefficient and where there is potential demand considering socio-economic variables, land use and new infrastructure needs.

Inequalities are triggered also by other structures particularly those linked to housing and employment. In specific cases, such as in China where housing registration systems and schemes are put in place by institutions, inequalities in the form of commuting burden can be considerable. This role of employment and housing system constraints are the focus of the analysis on commuting burden inequalities by Chen Liu, Mengqiu Cao, Tianren Yang, Laing Ma, Meiling Wu, Long Cheng, Runing Ye. They focus their study on Tianjin, China where the Hukou housing scheme and the Danwei institutional context provide for significant impacts on commuting times. The study finds that those that are registered with Hukou and are part of the Danwei systems benefit from housing which is closer to places of employment, and

thus reducing commuting time. However the study also sheds new light on the constraints caused by institutional barriers on the job-housing balance, especially for high skilled immigrants, something which is not experienced by local residents and low skilled immigrants that have more housing choices. It is clear from the study that commuters seek a more equitable housing subsidy scheme, improvements in housing benefits, in public transport and in the planning of housing and workplace environments. The study finds that institutional discrimination causes inequalities and suggests ways to help and support planners and decision makers in developing sustainable urban development.

3.3. Informal paratransit and its role in urban transport equity

The challenges faced by cities, particularly in the Global South, to handle informal paratransit services and formalise public transport services through the implementation of systems such as Bus Rapid Transit remain largely under-researched. The paper by Christopher Plano and Roger Behrens shed some light into the difficulties of integrating paratransit services with developments in other more structured systems, the Bus Rapid Transit in Cape Town, South Africa. The mis-match between services has a consequence on service quality and cost to both operators and city authorities. Their work looks at paratransit drivers and vehicle owners and investigates through a multi criteria analysis, seven potential interventions found in the literature and expert interviews conducted as part of the study. The results point towards less costly and least onerous changes to the current operation, including the operation of deficit payment and improved terminal security to be most successful. The study suggest these measures as being far more effective than plans to remove para transit completely.

The informal organisation of public transport operators is the subject of the paper by Daniel Oviedo, Yiseth Scorcia, Pablo Guerrero, Michael Delansheer, Raul Rodriguez-Molina and Raphael Dewez. They focus their research on an area which is significantly under-researched, the Caribbean. The challenges of informality in transport, within the Caribbean context stands out from the wider literature coming from areas such as Central and South America. This paper provides a first look into the public transport supply and operators in Haiti's Metropolitan Area of Port-Au-Prince (PAP) where acute poverty, vulnerability and social inequity are significant. The paper looks at informal transport from a functional perspective, but also from a space-time and social context, thus contributing to the Global South literature. The study investigates drivers of Tap-Tap, a privately owned and operated collective transport service. The study shows low levels of representation and organisation, limited roles for driver associations, an old fleet and a masculine, unequal and exploitative system. The results of the interviews shed some light into these systems and provide evidence to support policy development, especially where urban transport planning investments are prioritised.

3.4. Informal paratransit and its role in urban transport (in)equity

In the last two papers of this Themed Volume, the authors have focused more on technologies that will impact transport equity in the Global South. The first paper by Frédéric Blas, Gabriel Giacobone, Thomas Massin and Florencia Rodríguez Tourón deals with the impacts of vehicle automation on public revenues and transport equity, using the case study of policies in Buenos Aires, Argentina. The paper investigates the potential implications of revenue losses from conventional vehicles where taxes are paid on registration, fuel, parking, property, traffic violations and so on. These revenues tend to supplement investment in transport, and

support public transport systems for the poorest in society. The current inequalities in the transport system can indeed grow as access to opportunities decline with the introduction of shared and electric autonomous vehicles and the increased reliance on private motorization and underfunding of public transport systems. Using the fiscal structure of the transport system of Buenos Aires, the study identifies the potential impact on the city's finances and considers distributional effects as a result. The paper concludes with policy recommendations and policy instruments that could support more equity in future transport.

The last paper in this Volume uses the case study of India to investigate adoption intention of electric vehicles considering environmental concerns among other factors. This paper by Nikunj Kumar Jain, Kalyan Bhaskar and Sourabh Jain highlight the factors affecting adoption intention using the Unified Theory of Acceptance and Use of Technology (UTAUT). Factors such as performance expectancy and facilitating conditions, such as government support positively affect adoption intention of electric vehicles in India. This work contributes to the literature on the Global South with respect to the electrification of transport and recommends measures that could be taken to promote adoption of electric vehicles.

The range of papers presented in this Themed Volume reflect on some of the issues on transport equity that concern cities, regions and states in the Global South. The need for further research into what causes and promulgates transport inequality and the analysis and monitoring of new infrastructure and services is necessary to inform future policies on sustainable and equitable transport systems.

4. Conclusion

The adoption of equity in the rhetoric, framing and operationalization of urban transport research, policy and practice as shown throughout this Themed Volume reflects not only recent paradigm shifts in urban and transport studies, but growing research capacity and interest in addressing equity challenges in transport planning and management in the global south. However, the contributions described above also reflect that cities in the global south grapple with the challenge of adopting such new paradigms and streamlining recent concerns about accessibility, sustainable transport and the distributional consequences of urban mobility in mainstream urban transport policies. The emphasis on equity in the analysis of issues at different scales (from the city to the individual) and the assessment of both old and new problems faced by cities in the global south such as informal paratransit and electrification, is likely to inform dialogues and practices in a sector that involves a myriad of voices and actors shaping and influencing discourses and decision making.

References

Acheampong, R. A. (2021) 'Societal impacts of smart, digital platform mobility services—an empirical study and policy implications of passenger safety and security in ride-hailing', *Case Studies on Transport Policy*. Elsevier Ltd, 9(1), pp. 302–314. doi: 10.1016/j.cstp.2021.01.008.

Adama, O. (2012) 'Urban governance and spatial inequality in service delivery: A case study of solid waste management in Abuja, Nigeria', *Waste Management and Research*, 30(9), pp.

991–998. doi: 10.1177/0734242X12454694.

Behrens, R., Chalermpong, S. and Oviedo, D. (2021) 'Informal paratransit in the Global South', *The Routledge Handbook of Public Transport*. Routledge, pp. 236–251. doi: 10.4324/9780367816698-20.

Bryceson, D. F., Mbara, T. C. and Maunder, D. (2003) 'Livelihoods, daily mobility and poverty in sub-saharan Africa', *Transport Reviews*. Taylor & Francis Group, 23(2), pp. 177–196. doi: 10.1080/01441640309891.

Caprotti, F., Cowley, R., Datta, A., Castán Broto, V., Gao, E., Georgeson, L., Herrick, C., Odendaal, N. and Joss, S. (2017) 'The New Urban Agenda: key opportunities and challenges for policy and practice', *Urban Research and Practice*, 10(3), pp. 367–378. doi: 10.1080/17535069.2016.1275618.

Cervero, R. and Golub, A. (2007) 'Informal transport: A global perspective', *Transport Policy*. Pergamon, 14(6), pp. 445–457. doi: 10.1016/j.tranpol.2007.04.011.

DeVerteuil, G. (2009) 'Inequality', in *International Encyclopedia of Human Geography*. Elsevier, pp. 433–445. doi: 10.1016/B978-008044910-4.00963-9.

Dimitriou, H. T. and Gakenheimer, R. (2011) *Urban transport in the developing world: A handbook of policy and practice*, *Urban Transport in the Developing World: A Handbook of Policy and Practice*. doi: 10.4337/9781849808392.

Gómez-Lobo, A. (2020) 'Transit reforms in intermediate cities of Colombia: An ex-post evaluation', *Transportation Research Part A: Policy and Practice*. Elsevier Ltd, 132, pp. 349–364. doi: 10.1016/j.tra.2019.11.014.

Günther, I. and Launov, A. (2012) 'Informal employment in developing countries: Opportunity or last resort?', *Journal of Development Economics*, 97(1), pp. 88–98. doi: 10.1016/j.jdeveco.2011.01.001.

Jennings, G. (2020) 'An exploration of policy knowledge-seeking on high-volume, low-carbon transport: findings from expert interviews in selected African and South-Asian countries', *Transportation Research Interdisciplinary Perspectives*. Elsevier Ltd, 5, p. 100117. doi: 10.1016/j.trip.2020.100117.

Levy, C. (2013) 'Travel choice reframed: "deep distribution" and gender in urban transport', *Environment and Urbanization*, 25(1), pp. 47–63. doi: 10.1177/0956247813477810.

Levy, C. and Dávila, J. D. (2017) 'Planning for mobility and socio-environmental justice: The case of Medellín, Colombia', in *Environmental Justice and Urban Resilience in the Global South*. Palgrave Macmillan, pp. 37–56. doi: 10.1057/978-1-137-47354-7_3.

Lucas, K. and Jones, P. (2012) 'Social impacts and equity issues in transport: an introduction', *Journal of Transport Geography*, 21, pp. 1–3. doi: 10.1016/j.jtrangeo.2012.01.032.

Manderscheid, K. and Bergman, M. M. (2008) 'Spatial Patterns and Social Inequality in Switzerland—Modern or Post-modern', *The Social Fabric of the Networked City*. Routledge

London, pp. 41–65.

Marsden, G., Anable, J., Bray, J., Seagriff, E. and Spurling, N. (2019) *Shared mobility - where now, where next?* Centre for Research into Energy Demand Solutions (CREDS)
<https://www.creds.ac.uk/publications/where-now-where-next/>

Martens, K. (2018) 'Ageing, impairments and travel: Priority setting for an inclusive transport system', *Transport Policy*. Elsevier Ltd, 63, pp. 122–130. doi: 10.1016/j.tranpol.2017.12.001.

Oviedo, D. and Guzman, L. A. (2020) 'Should Urban Transport Become a Social Policy? Interrogating the Role of Accessibility in Social Equity and Urban Development in Bogotá, Colombia', in *Urban Mobility and Social Equity in Latin America: Evidence, Concepts, Methods*. Emerald, pp. 11–32. doi: 10.1108/S2044-994120200000012005.

Oviedo, D. and Nieto-Combariza, M. (2021) 'Transport Planning in the Global South', *International Encyclopedia of Transportation*. Elsevier, pp. 118–124. doi: 10.1016/B978-0-08-102671-7.10624-4.

Priye, S. and Manoj, M. (2020) 'Exploring usage patterns and safety perceptions of the users of electric three-wheeled paratransit in Patna, India', *Case Studies on Transport Policy*. Elsevier, 8(1), pp. 39–48. doi: 10.1016/j.cstp.2020.01.001.

Sabogal-Cardona, O., Oviedo, D., Scholl, L., Crotte, A. and Bedoya-Maya, F. (2021) 'Not my usual trip: Ride-hailing characterization in Mexico City', *Travel Behaviour and Society*. Elsevier, 25, pp. 233–245. doi: 10.1016/J.TBS.2021.07.010.

Slovic, A. D., Bogado Tomasiello, D., Giannotti, M., de Fatima Andrade, M. and Nardocci, A.C. (2019) 'The long road to achieving equity: Job accessibility restrictions and overlapping inequalities in the city of São Paulo', *Journal of Transport Geography*, 78, pp. 181–193. doi: 10.1016/j.jtrangeo.2019.06.003.

Smith, D. M. (1987) *Geography, Inequality, and Society*. Cambridge University Press.

Wiles, J. and Kobayashi, A. (2009) 'Equity', in *International Encyclopedia of Human Geography*. Elsevier, pp. 580–585. doi: 10.1016/B978-008044910-4.00944-5.