

Doctoral Dissertation

**Explorations of Transport-Related Social Exclusion from the
Perspectives of Transport Disadvantaged Groups and Other Stakeholders:
Case Studies of Rural and Disadvantaged Regions in Nepal and Japan**

SUMMARY

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Abstract

For many decades, geographers, sociologists and transport researchers have drawn attention to the unique challenges faced by people living in rural areas due to limited transport options and difficulties in accessing critical activities, services and social networks. Despite their diversity, rural areas share some common characteristics which affect the transportation systems operating there, such as 1) low densities of population; 2) fewer income-earning opportunities; 3) fewer social, economic and government services; 4) longer distances between houses and facilities; and 5) longer distances between houses and transport gateways, such as bus stops. In addition, some rural areas are characterised by difficult terrain, which makes it difficult to construct roads and railways, or challenging and expensive to operate motorized transport.

Given these challenges, some researchers have used the concept of transport-related social exclusion, or TRSE, to frame the relationships between the mobilities of rural residents and the social and economic outcomes they aspire to. This concept asserts that limited access to transportation resources hinders people's access to the various activities, services and destinations they need to get to in order to live. The TRSE literature describes a variety of factors of exclusion, some which have been featured in past accessibility studies, such as distance, travel costs, physical characteristics of vehicles, travel time, and timing of public transport services, as well as new dimensions such as safety, personal security, socio-cultural norms, and other subjective factors which influence people's capacity to travel.

To date, however, most TRSE studies have been conducted in Europe, Australia and North America, with fewer examples from non-Western countries such as Japan, or from low-income countries such as Nepal. Furthermore, most studies focus only on the transport disadvantaged individuals, without considering the relationship between these people and the non-transport disadvantaged stakeholders around them, such as family and neighbours.

To address these gaps, the current research set out to answer the following questions: 1) how can existing conceptual frameworks proposed in the TRSE literature be adapted to reflect a more diverse range of country contexts; 2) how do other stakeholders influence the access of transport disadvantaged individual/groups to critical activities and services; and 3) what kind of constraints prevent other stakeholders from getting involved in helping to improve access of the transport disadvantaged? To do this, it first seeks to clarify the different approaches currently used to analyse rural transport systems and mobilities. It then proposes a conceptual framework for assessing the TRSE of selected groups. The main components of the framework are: 1) the political context, 2) the accessibility context, 3) TRSE factors, 4) individual/subgroup attributes, and 5) the influence of other stakeholders. The first step of an assessment is to describe 1) the political context, namely which groups are of policy concern; what kind of activities are prioritised; and what levels of access are desirable and politically expected. The assessment then looks at 2) the accessibility context, namely the location of origins and destinations of travel; infrastructure; and available modes and transport services. Taking these into account, it then looks at the ways in which the groups in question experience the accessibility context by considering 3) how various TRSE

factors affect these experiences; 4) the influences of specific attributes at the individual or subgroup level; and 5) the influences of other stakeholders.

After describing the research contexts of rural areas in Nepal and Japan in Chapter 3, the current thesis presents the results of four case studies about TRSE using this framework as an organising principle. Chapter 4, *Intra-household time-use and children's participation in educational activities in rural Nepal*, initially set out to investigate the TRSE factors affecting children's travel to school and how these affected their enrolment and attendance in rural Nepal. However, the survey found that the vast majority were attending regularly, so the focus of the study shifted to how children's time-use, such as helping with household chores, affected the time they spent on educational activities. A multilevel GSEM model was used to test these relationships. The same model was extended to incorporate the effects of a parent's time-use on children's time-use and confirmed that most of the time-uses were significant.

Chapter 5, *Interpersonal and socio-cultural norms affecting elderly people's mobilities in Nijo District, Japan*, explored the mobilities of elderly people in Nijo, a small rural district in Shimane Prefecture, Japan. In particular, it investigated how they perceive their travel options, such as how they feel about arranging travel; how they feel about asking other people for lifts; and who they would call for transport in an emergency. In-depth semi-structured interviews with 17 elderly people were conducted. Provisional coding and values coding were used to analyse the interviews, using selected TRSE factors as identified in the TRSE literature as the basis for coding. Through this analysis, the study identified subjective attitudes affecting people's mobility, and proposes that these cultural and social norms can also be viewed as TRSE factors as they influence the willingness of elderly people to ask for lifts, and the willingness of other people to give lifts to elderly people.

Chapter 6, *The potential for Village Hubs to address TRSE: case study of Nijo District, Shimane Prefecture*, continued the investigation of TRSE issues in Nijo District, but this time from the perspective of its traditional Village Hub. Like "compact city" initiatives, the Japanese Government's Village Hubs initiative promotes the concentration of critical economic and social facilities within a limited geographic area in order to consolidate transport links and facilitate access to them. Based on a small household survey, the study looked at current shopping practices of residents and their views on transport services around the traditional hub area of Nijo District. Despite the presence of several shops in this hub and twice-weekly intra-district bus services, the study found that the majority of residents were travelling to Masuda City, some 20 km away, for their shopping. Though important to those who were shopping in the traditional hub, their numbers were so few as to make it difficult to sustain the shops. The study suggested that proximity alone may not facilitate access, and also that people's shopping and transport behaviours need to be assessed together.

Chapter 7, *The potential for transport operators to address TRSE: case study of new services offered by Japanese taxi companies during the COVID-19 pandemic*, presents the result of a study of new types of taxi services started in the context of the COVID-19 pandemic in Japan. Through a survey of taxi companies in the Chugoku region of Japan (Hiroshima, Okayama, Shimane, Tottori, and Yamaguchi), managers of companies which had offered new services were identified and interviewed. The interviews were coded using the key components of the Business Model Canvas (BMC). Through this process, it emerged that one of the main motivations for taxi companies to provide these services was to support elderly customers who they thought were facing difficulties in going shopping during the Covid-19 pandemic. To date, there have been very few studies which involve the views of transport operators on their role in addressing TRSE, but the current study highlighted how the exclusion of elderly people from shopping during the pandemic led private operators to try to respond. The interviews revealed that the new services were not popular nor profitable, but the managers still found value in the experience of trying something new.

Drawing from the four case studies, the thesis concludes with a general discussion of the cross-cutting research questions set out above. It discusses how the proposed TRSE framework needed to be adapted to reflect additional components, such as benchmarks regarding access to opportunities and governance structures. It also draws attention to the influence of other stakeholders in hindering or enabling the access of the transport disadvantaged groups. Regarding policy implications, the case studies suggest that by expanding the range of policy concerns beyond transport, mobility and accessibility issues, the concept of transport-related social exclusion requires more cooperation from different stakeholders. This makes policy responses more complicated but also broadens the policy options that governments can draw upon. One of the limitations of the current thesis was the lack of consideration of appropriate methodologies for analysing TRSE. Although Chapter 5 demonstrated how the TRSE factors could be used as a coding framework for qualitative analyses, further work is needed to improve methodologies to do the TRSE assessments. In addition, further empirical applications of the proposed TRSE assessment framework are required confirm its usefulness as a research and policy assessment framework. The conclusions end by highlighting some of the limitations of the research and suggesting areas for further research.