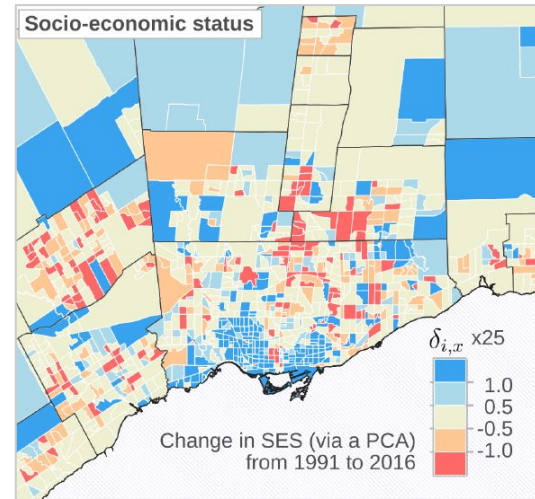
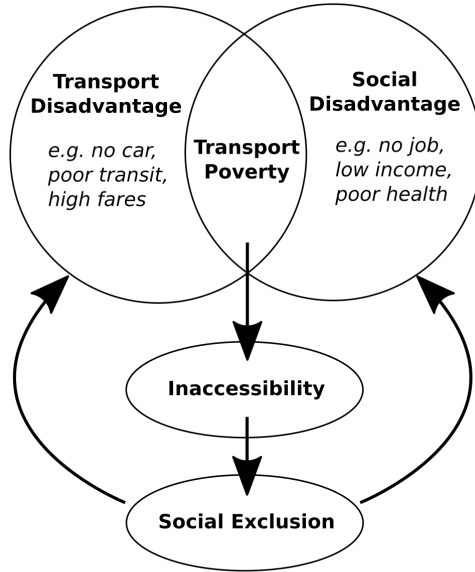


Transportation, Poverty, and Urban Dynamics

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PhD Dissertation Exam
Department of Geography & Planning
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Transport-related social exclusion + Urban dynamics



Empirical Research Questions

- How and where are trends of suburbanization of poverty increasing risks of transport poverty? (ch.3)
- Who are the suburban poor? Where do they come from? (ch.4)
- Are lower-income residents disproportionately moving away from adequate transit service? (ch.5)

Methodological Contributions:

- Advancing quantitative methods for analyzing neighbourhood change - both for neighbourhood and individual level analyses
- First time using large-scale panel dataset (tax records) to examine suburbanization of poverty and its effects

Dissertation Outline

1 - Introduction

2 - Background

3 - Suburbanization of Transport Poverty

4 - Pathways to Suburban Poverty

5 - Are low-income residents disproportionately moving away from transit?

6 - Conclusions

Research Question

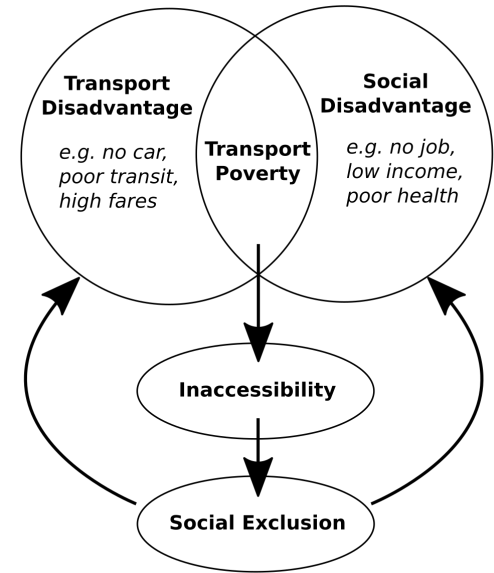
- Are risks of transport poverty and adverse travel behaviour outcomes increasing in the suburbs alongside trends of suburbanization of poverty?

Contributions

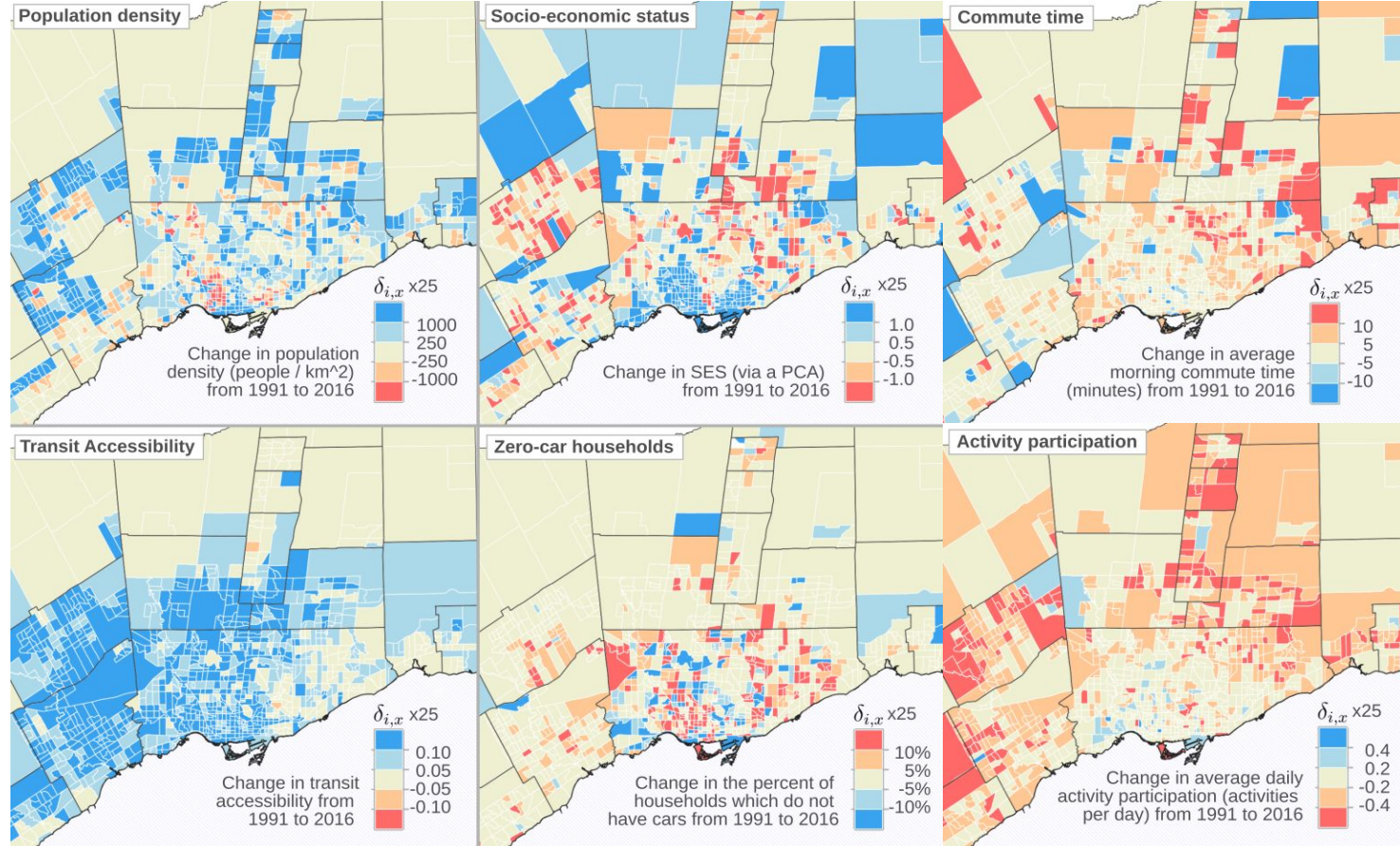
- Neighbourhood-level analysis of transport disadvantage, social disadvantage, and travel behaviour in Toronto
- New methodologies to examine neighbourhood change, e.g.
 - Neighbourhood-specific spatio-temporal models
 - Creating an indicator of change in transport poverty

Status

- Published in Annals AAG



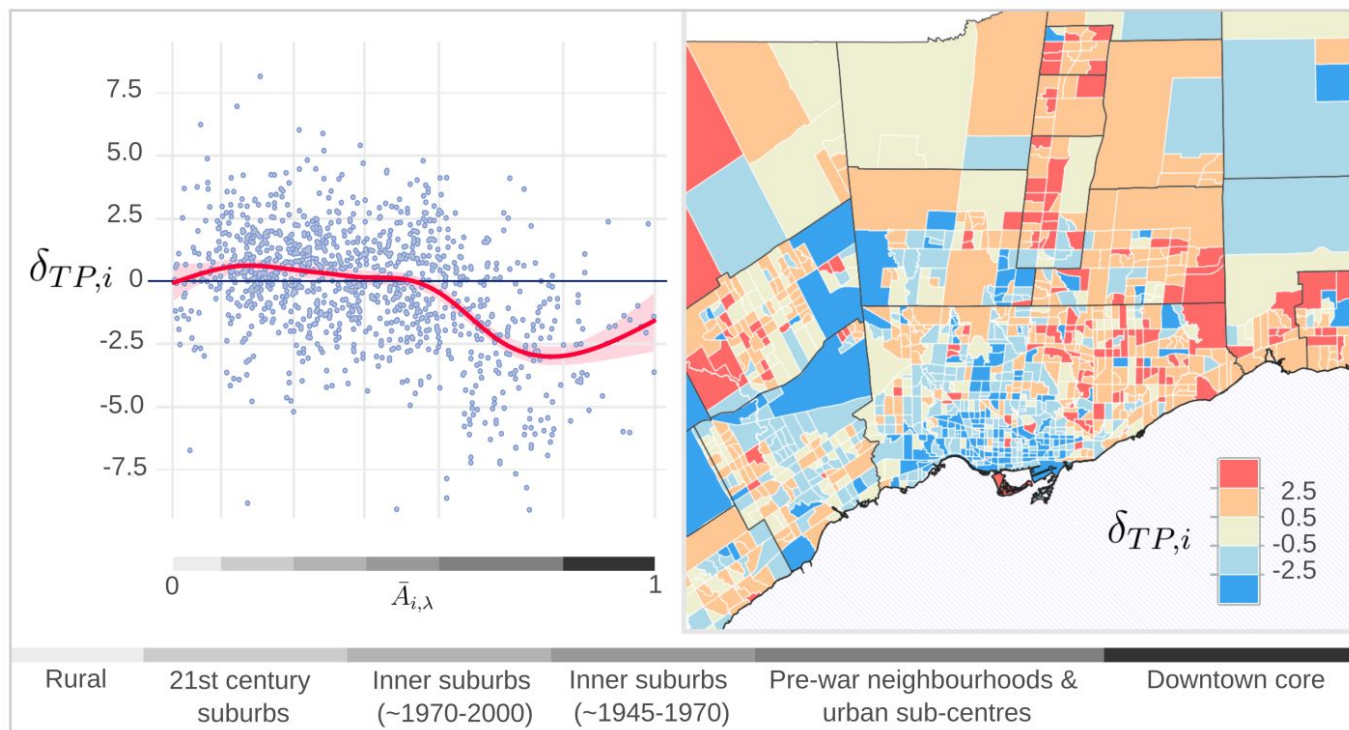
Chapter 3: Suburbanization of Transport Poverty



Chapter 3: Suburbanization of Transport Poverty

Key finding:

- suburbanization of poverty is aligned with increasing risks of transport poverty and adverse travel behaviour in the suburbs



Chapter 4: Pathways to Suburban Poverty

Research Objective

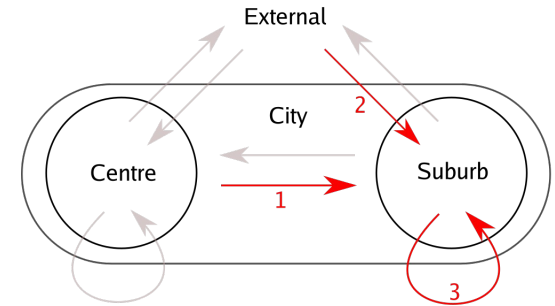
- Document the predominant geographic pathways of becoming poor and living in the suburbs

Contributions

- Developing a conceptual framework about possible pathways to suburban poverty
- Generating a Canada-wide urban neighbourhood-level classification of suburbs
- Analysis of a large panel dataset pertaining to 20% of Canadian tax filers to quantify the extent of different pathways to suburban poverty
 - i.e. moving beyond a neighbourhood-level to show how suburbanization of poverty is being formed

Status

- 2nd revisions at Environment & Planning A



Chapter 4: Pathways to Suburban Poverty

Key finding:

- Transitioning to suburban poverty is much more due to staying or moving within the suburbs compared to external immigration and moving from central neighbourhoods

Prior state, <i>i</i>	Prior poverty status	Current state, <i>j</i>			
		Above poverty line		Below poverty line	
		<i>Centre</i>	<i>Suburb</i>	<i>Centre</i>	<i>Suburb</i>
International immigrant		0.6	0.3	5.2	4.6
Internal migrant	No	1.2	0.9	0.8	0.7
	Yes	0.2	0.1	1.2	1.3
		1.4	1.0	2.0	2.0
Moved from <i>centre</i>	No	5.8	1.2	2.3	0.7
	Yes	1.0	0.2	8.1	2.2
		6.8	1.4	10.5	2.9
Moved from <i>suburbs</i>	No	3.4	6.8	1.7	4.0
	Yes	0.5	0.8	3.8	8.7
		3.9	7.5	5.4	12.7
Stayed in same postal code	No	80.3	85.0	13.1	17.5
	Yes	5.8	3.5	62.3	58.3
		86.1	88.5	75.3	75.8
Births		1.2	1.3	1.6	1.9
Total		100.0	100.0	100.0	100.0

Chapter 5: Are low-income residents disproportionately moving away from transit?

Research Question

- Are low-income residents moving away from good transit accessibility?

Contributions

- Developing a regional approach to examine social inequalities of residents moving away from transit
- Calculating and summarizing changes in accessibility for intra-urban movers for 20% of the population

$$\Delta A_k = A_{i,k,t+1} - A_{i,k,t}$$

i.e. measuring the change in transit accessibility for each mover, k , based on where they lived, i , in years t and $t + 1$

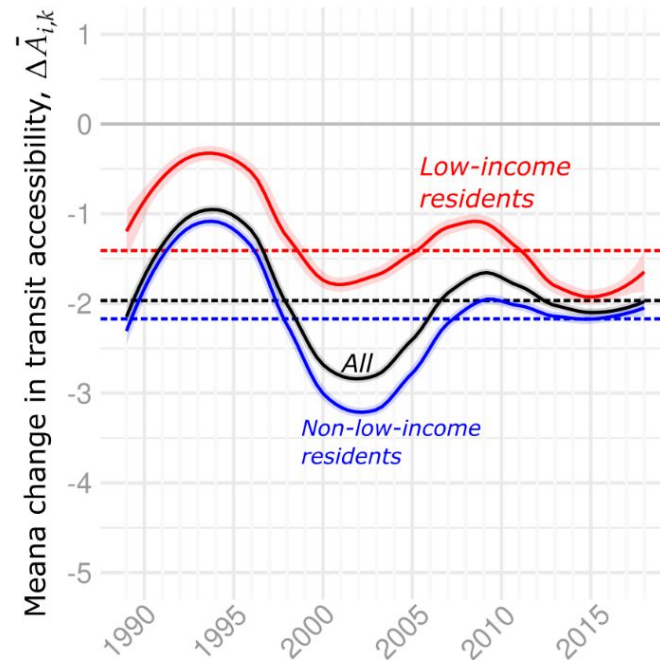
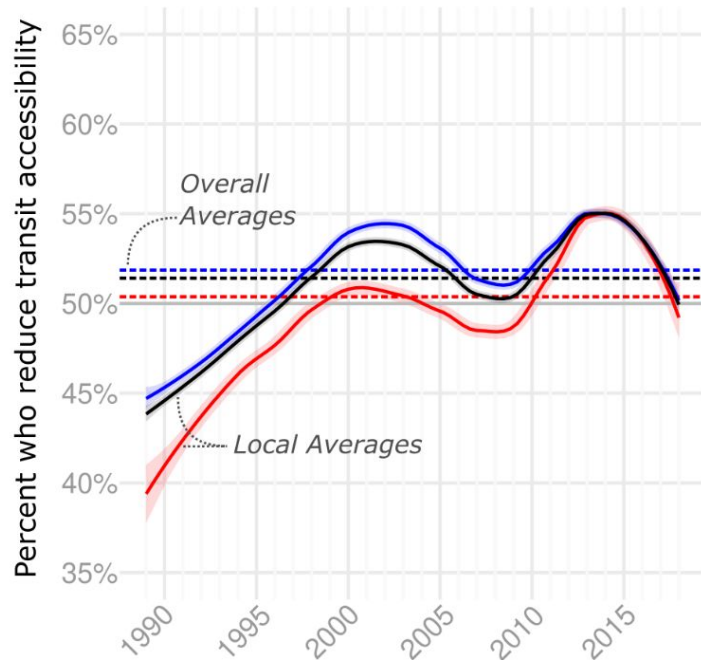
- Novel application of Heckman Selection models

Status

- Sitting on my computer (was accepted at TRB, maybe submit to JTG?)

Key finding:

- find that low-income residents, on average, decrease their transit accessibility when they move, but not as much as higher-income residents



Research Contributions & Implications

- Development new frameworks and/or empirical knowledge...
 - Synthesizing literature on transport poverty, urban dynamics, and suburbanization of poverty (ch.2)
 - Transport poverty increasing alongside suburbanization of poverty (ch.3)
 - Residential mobility pathways to suburban poverty (ch.4)
 - Low-income residents moving away from transit (ch.5)
- Advancements quantitative methods for analyzing neighbourhood change - both for neighbourhood and individual level analyses
- First time using large-scale panel dataset (tax records) to examine the how of suburbanization of poverty
- Overall policy and planning recommendations to improve suburban built environments

Future Research Directions

- Data Limitations
 - Limitations of travel survey (single weekday, proxy reporting) (ch.3)
 - Constraining of analysis temporally (ch.4) and spatially (ch.3 and 5)
- Sensitivity Analyses
 - Dichotomy of key variables (suburbs, low-income status, etc.)
 - Testing various clustering techniques, different types of models, etc.
- Long term benefits (e.g. income mobility, poverty alleviation) of different typology of urban form / transit accessibility
- Residential mobility resulting from specific transit projects (or other urban interventions)
- Map residential mobility flows, by income group, between neighbourhoods.

External Appraiser Comments/Questions

- Spatial Mismatch (ch. 2 & 3)
 - Shifting dynamics of destinations/jobs - growth in centre and some suburbs (not all)
- Survey underrepresentation (ch. 3)
 - TTS is likely under-representing groups (e.g. lack of phone/digital access) and trips (proxy, active travel)
- Theoretical argument for a lagged dependent variable (ch.3)
 - Social connections to/from work locations / travelling to other activities
 - Could look at other models (e.g. Spatial Durbin, Spatial Filtering, etc.)
- Incumbent upgrading (ch. 2 & 4)
 - “Gentrification without displacement” - Clay (1979)
- Tax data limitations (ch. 4 & 5)
 - Lack of demographic data/context, reasons why people move
 - Analysis could be expanded by age-cohort / household composition

Thank you :)