POSTGRADUATE

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Te Whare Wānanga o Otāgo
NEW ZEALAND

SAPERE AUDE

CHRISTCHURCH

Social Impacts of Mode Shift Policy Levers

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Public Health at Otago.

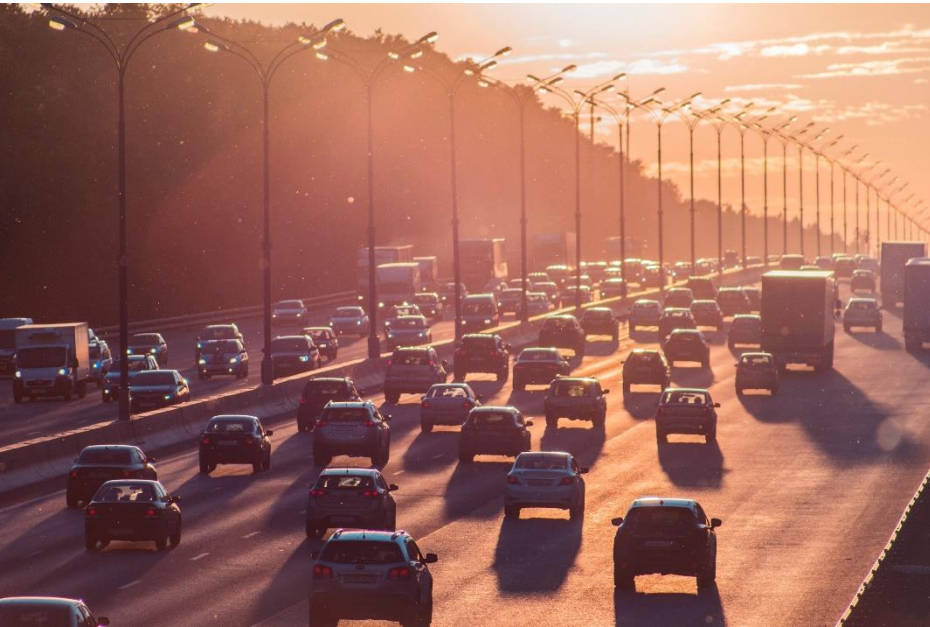Economic prosperity

Environmental sustainability

Resilience and security

Photo by Alexander Popov on Unsplash
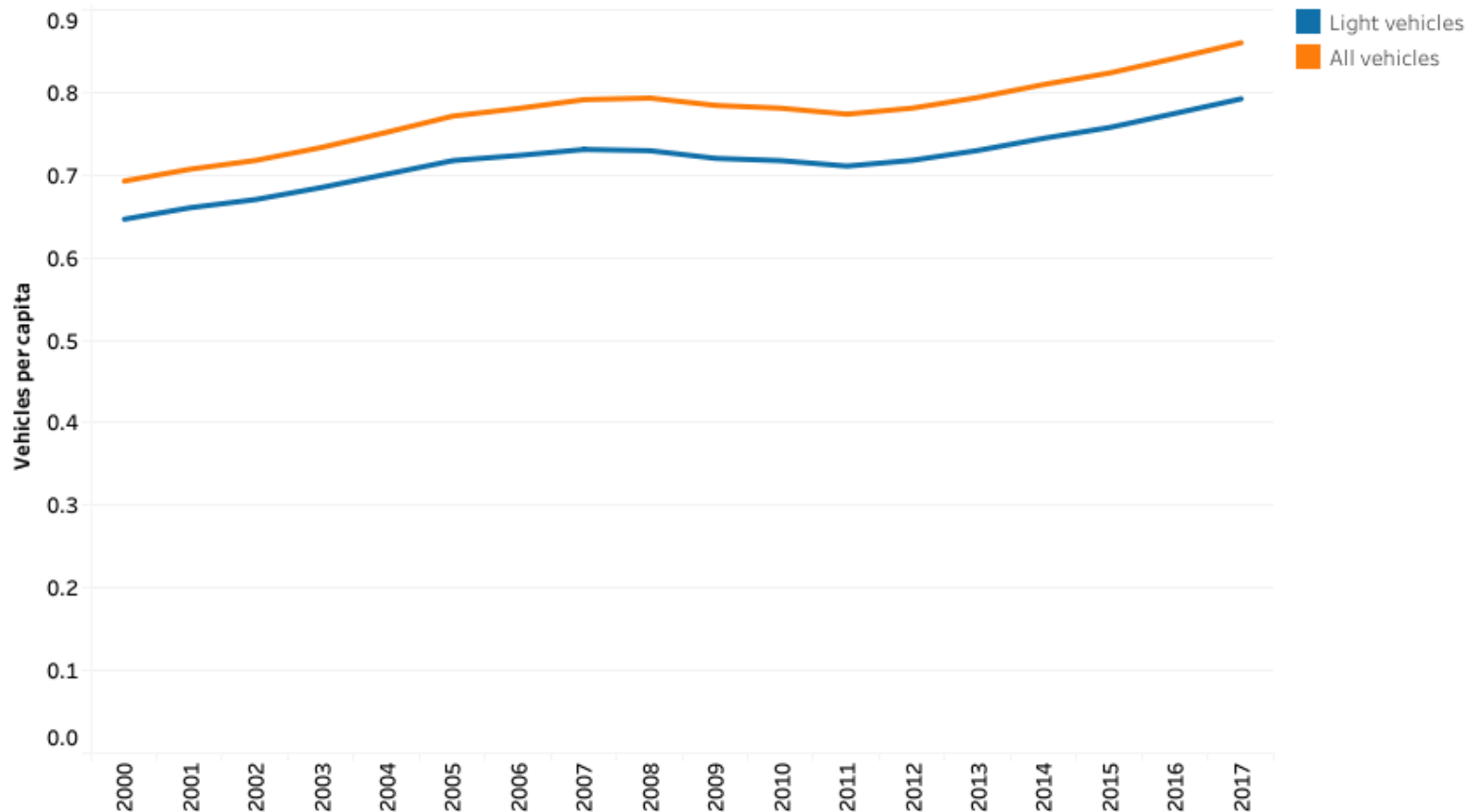

Photo by Artur Kraft on Unsplash

Inclusive access

Healthy and safe people

Starting from a blank slate, one would be hard pressed to design a less efficient, less healthy and more socially and environmentally destructive system for moving people around (Jones 2008).

RD027 - Vehicle ownership per capita

Source: NZ Transport Agency Motor Vehicle Register, Stats NZ (population)

Background

- Waka Kotahi (NZTA) proposing a series of measures aimed at mode shift in six high growth urban areas
- Focussed around three different policy levers:
    - Shaping urban form
    - Making shared and active modes more attractive
    - Influence travel demand and transport choices
- Reducing car dependence will lead to a more sustainable, healthy and equitable transport system
- BUT, the way in which this happens is important
- Tensions between mode shift policies and equity concerns are particularly problematic when car ownership is necessary
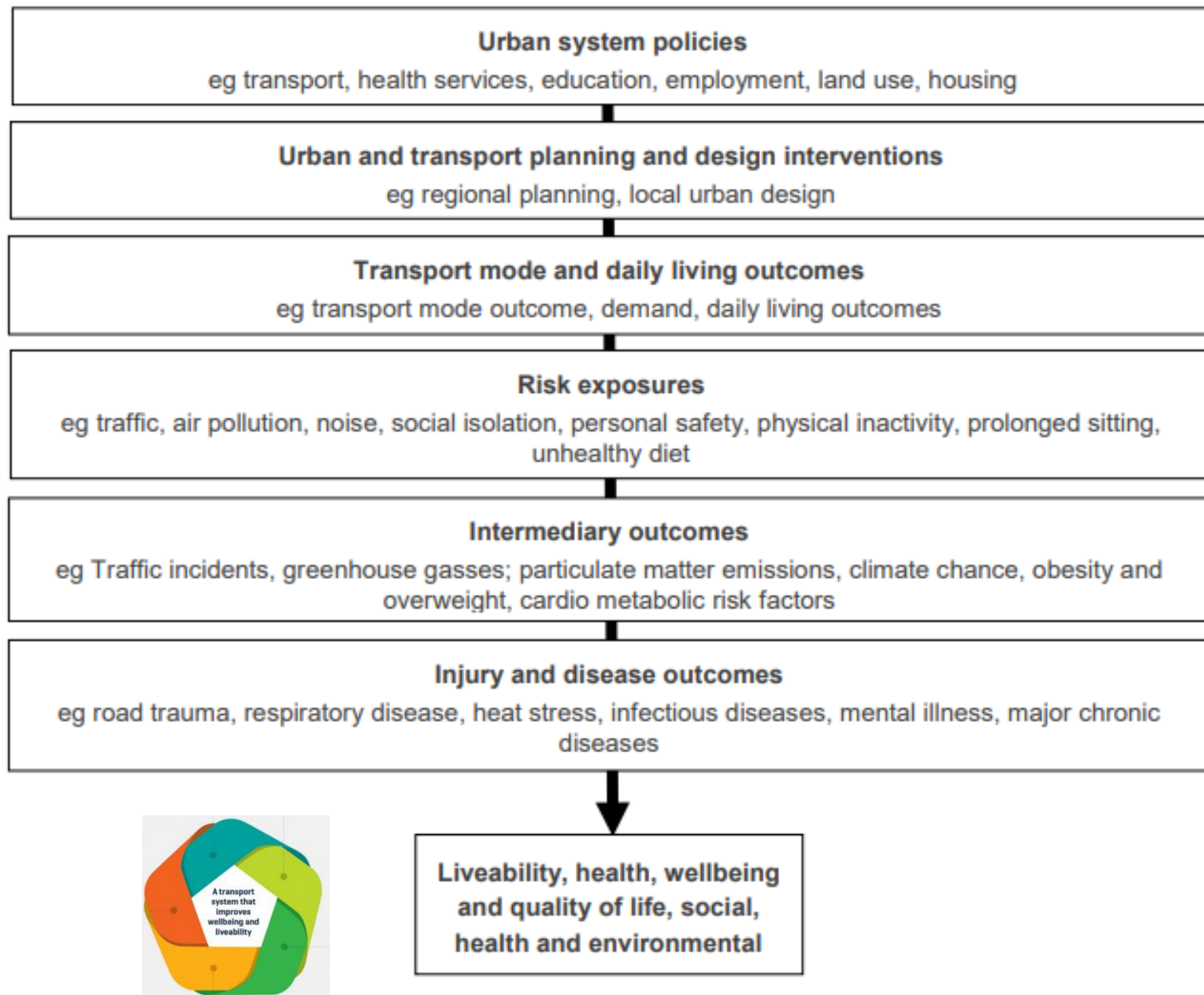
Social Impact Assessment in Transport

- Traditional transport appraisal methods have prioritised mobility over accessibility

- Broader social impacts are not well accounted for

- Environmental and economic impacts have been better integrated

- Omitting social impacts draws into question investment decisions predicated on social outcomes (Searle & Legacy, 2019; Mottee & Howitt, 2018)

- Social impacts are positive too!

Principles of Social Impact Assessment (Vanclay, 2003)

1. To ensure more **sustainable and equitable development**. Impact assessment should promote community development, capacity and social capital.

2. Social impact assessment should take a **proactive approach** to achieving better outcomes, rather than simply seeking to mitigate negative or unintended outcomes.

3. Social impact assessment should inform the design of the policy in an **adaptive** fashion.

4. Social, economic and environmental impacts are connected in a **complex system**. Impact pathways need to be articulated and second and higher order, wider impacts, considered.

5. **Evaluation** is a key component so that future analyses can learn from the results of past activities. The approach is therefore reflexive, evaluative and continually developing.

6. Social impact assessment can be **prospective and retrospective**. For example, the social impacts of unplanned events could be analysed retrospectively.

7. **Participatory processes and local knowledge** should be used to analyse concerns of those affected and use stakeholder knowledge in the assessment of impacts, appraisal of alternatives and monitoring and evaluation processes.

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Urban system policies

eg transport, health services, education, employment, land use, housing

Urban and transport planning and design interventions

eg regional planning, local urban design

Transport mode and daily living outcomes

eg transport mode outcome, demand, daily living outcomes

Risk exposures

eg traffic, air pollution, noise, social isolation, personal safety, physical inactivity, prolonged sitting, unhealthy diet

Intermediary outcomes

eg Traffic incidents, greenhouse gasses; particulate matter emissions, climate chance, obesity and overweight, cardio metabolic risk factors

Injury and disease outcomes

eg road trauma, respiratory disease, heat stress, infectious diseases, mental illness, major chronic diseases

A transport system that improves wellbeing and liveability

Liveability, health, wellbeing and quality of life, social, health and environmental

"Awareness of the differential distribution of impacts among different groups in society, and particularly the impact burden experienced by vulnerable groups in the community should always be of prime concern" (Vanclay, 2003): p7).

- Who benefits, and who loses?
- At its simplest a disaggregation of costs and benefits

Research Objectives

The specified objectives for the research were to:

- consider and describe the potential impact of policy levers to encourage people to change modes from an equity perspective

- provide an assessment of the impact on people with different **income levels** and **geographical/residential distribution**

- outline what, if any, primary research is required for determining the social impact assessment of mode shift and the most appropriate method for this.

Methods

- Review of existing literature, focussed on studies that either:
  - Outline the social impacts of transport for different social groups
  - Examine the social impacts of policy levers
  - Examine the impacts of policies of different groups

Mode Shift Policies

1.   Shaping urban form
   - Spatial and place based planning
   - Policy and regulatory settings
2.   Making shared and active modes more efficient
   - Network design, management and optimisation
   - Investment in infrastructure, platforms and services
3.   Influencing travel demand and transport choices
   - Economic Tools (pricing and incentives)
   - Education, awareness and engagement

Keeping Cities Moving (NZTA)
Better Travel Choices (Auckland Council)
Bay of Plenty Regional Mode Shift Plan
Hamilton-Waikato Metro Area Mode Shift Plan
Wellington Regional Mode Shift Plan
Greater Christchurch Regional Mode Shift Plan
Queenstown Lakes District Mode Shift Plan

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Transport-related resources

- Access to transport resources facilitates the capability to access employment, education, healthcare, recreation, and so on.
- Measuring how transport resources (the means) are distributed amongst the population, describes what people, in the same circumstances could do, but it does not predict how these resources enable different individuals participate in society.
- It is important to consider how transport resources translate into opportunities (or risks) for different groups of society.

Opportunities and risks

- Capabilities depend on the attributes of both individual transport users (including their transport resources) and their environment, and corresponds to both social and spatial accessibility.
- Accessibility is the main way in which transport resources are translated into opportunities.
- Risks, such as pollution, traffic safety and health should also be considered.
- Opportunities and risk influence behaviours (or transport outcomes).

Outcomes

- Observing people's daily travel behaviour measures what people actually do, rather than their capabilities to do the essentials to participate in society and for survival.
- Negative outcomes related to transport might include respiratory disease, or the road toll.
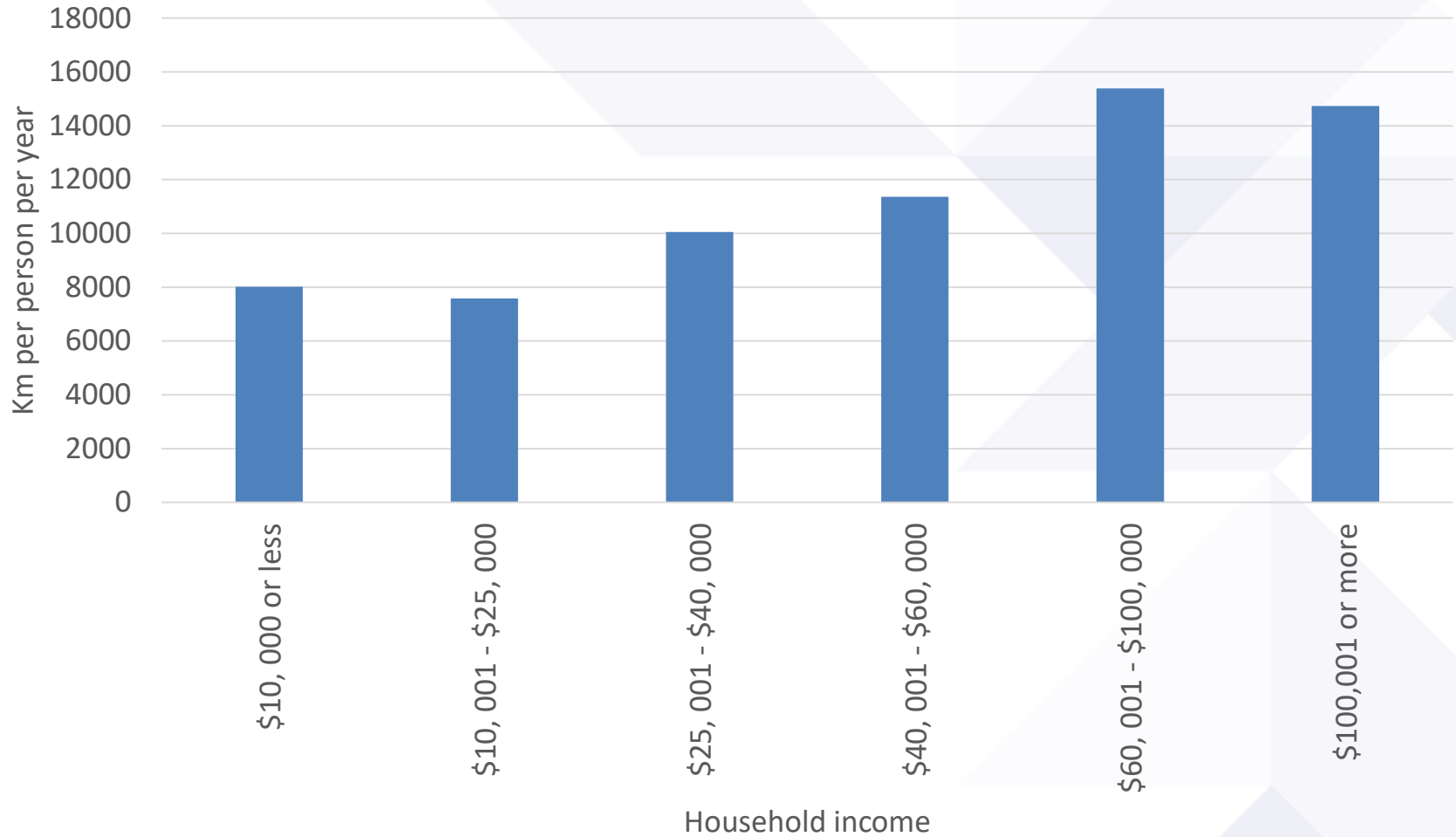
Subjective wellbeing

- Ultimately, all transport policies influence the subjective wellbeing of populations.
- This is best measured by how individuals perceive their wellbeing.
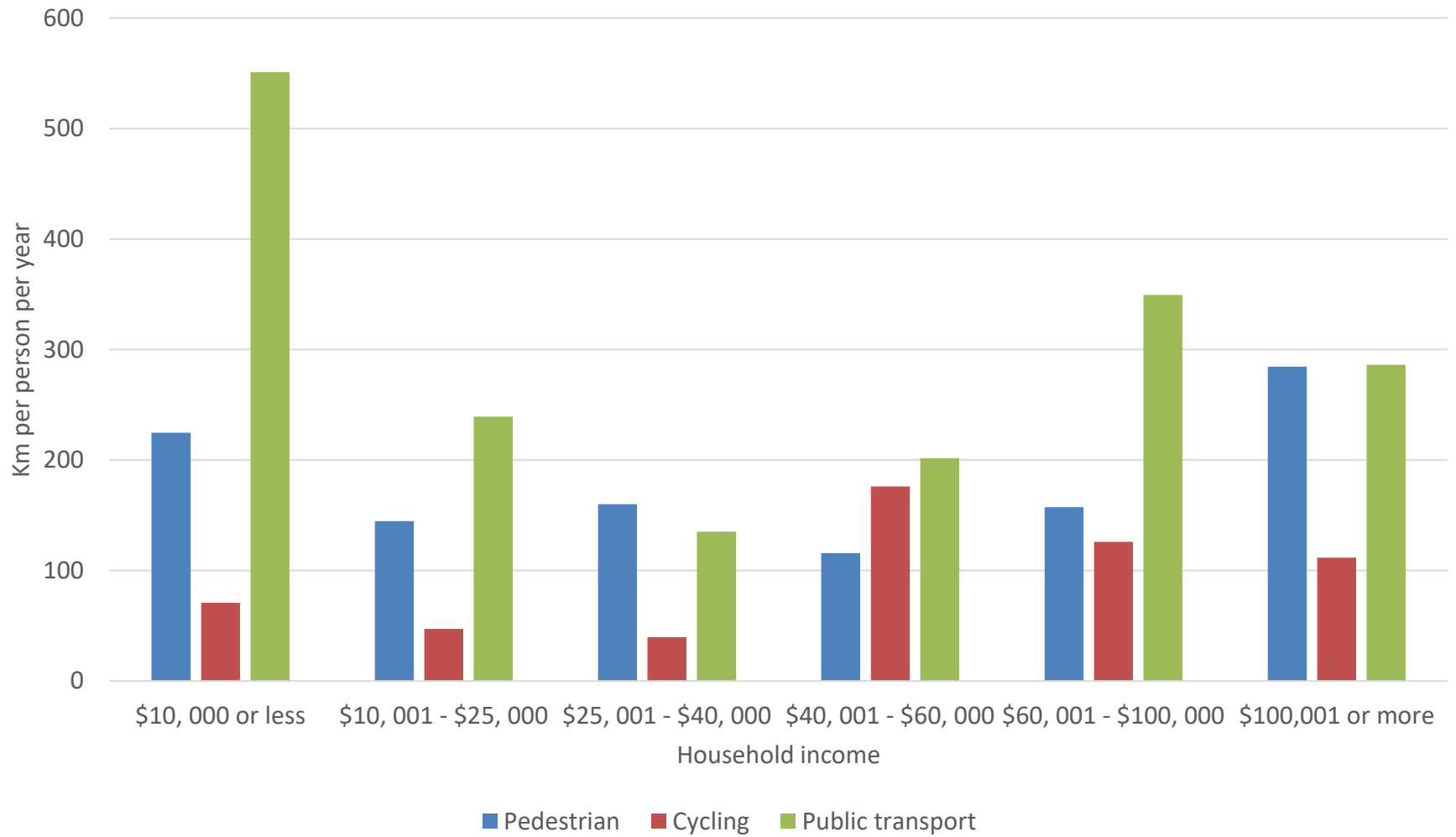
Households with no car

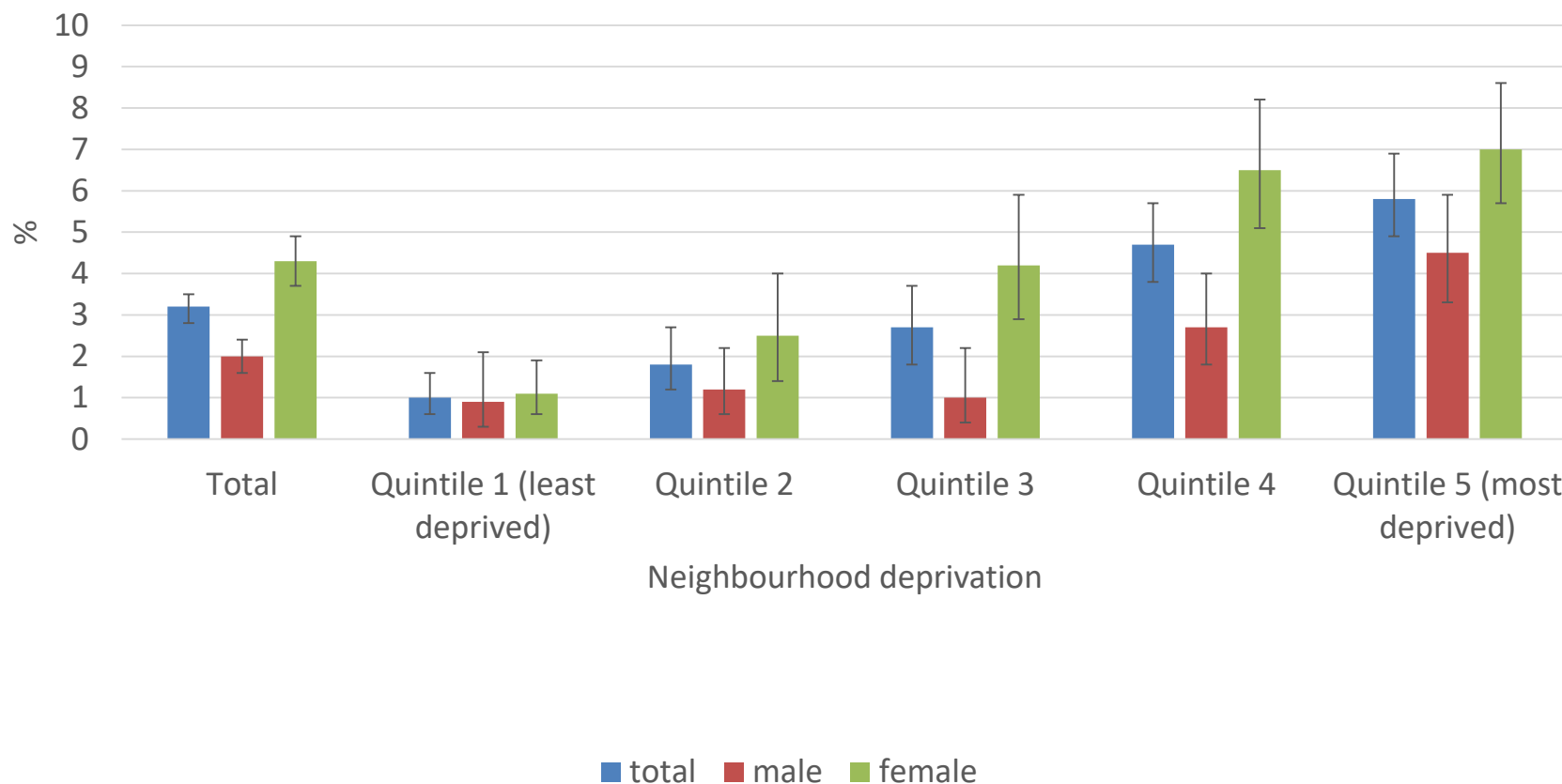X-axis: Index of Multiple Deprivation
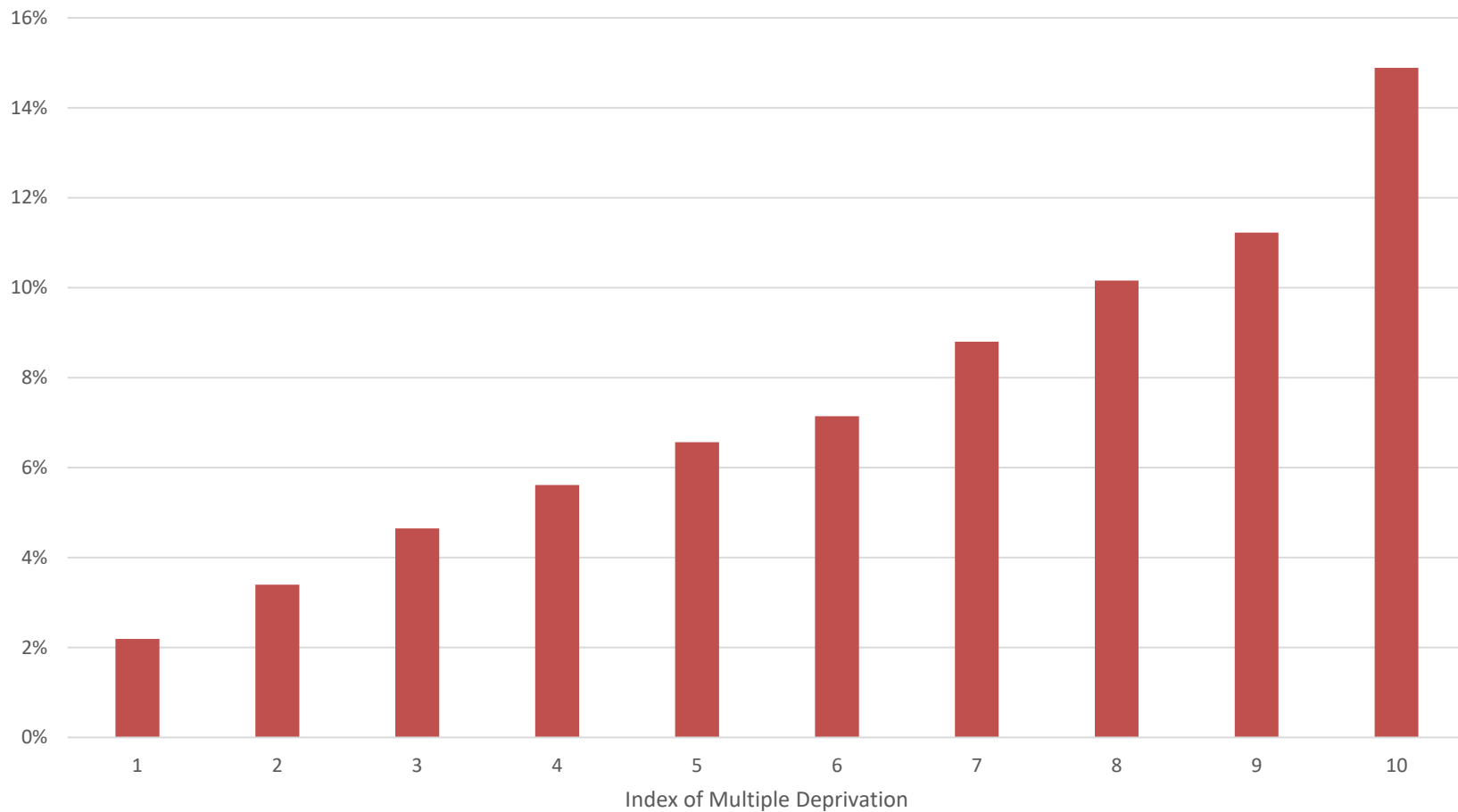
Distance travelled by car or van

Source: New Zealand Household Travel Survey
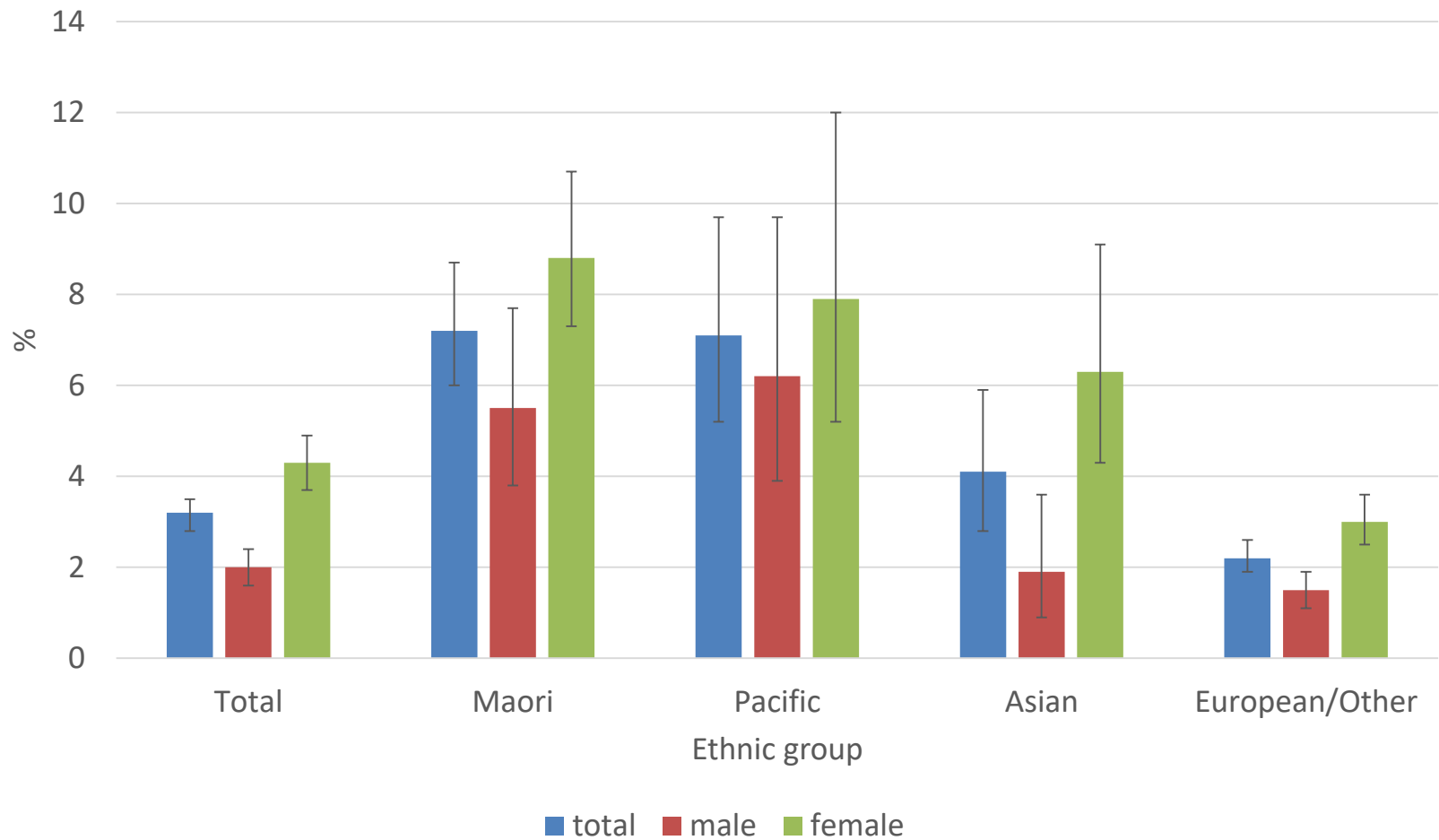
Distance travelled by active or shared modes

Unmet need for GP due to lack of transport in last 12 months: Deprivation

(source: Ministry of Health, re-use licensed under Creative Commons Attribution 4.0 International Licence

Unmet need for GP due to lack of transport in last 12 months: Ethnicity

Shaping Urban Form

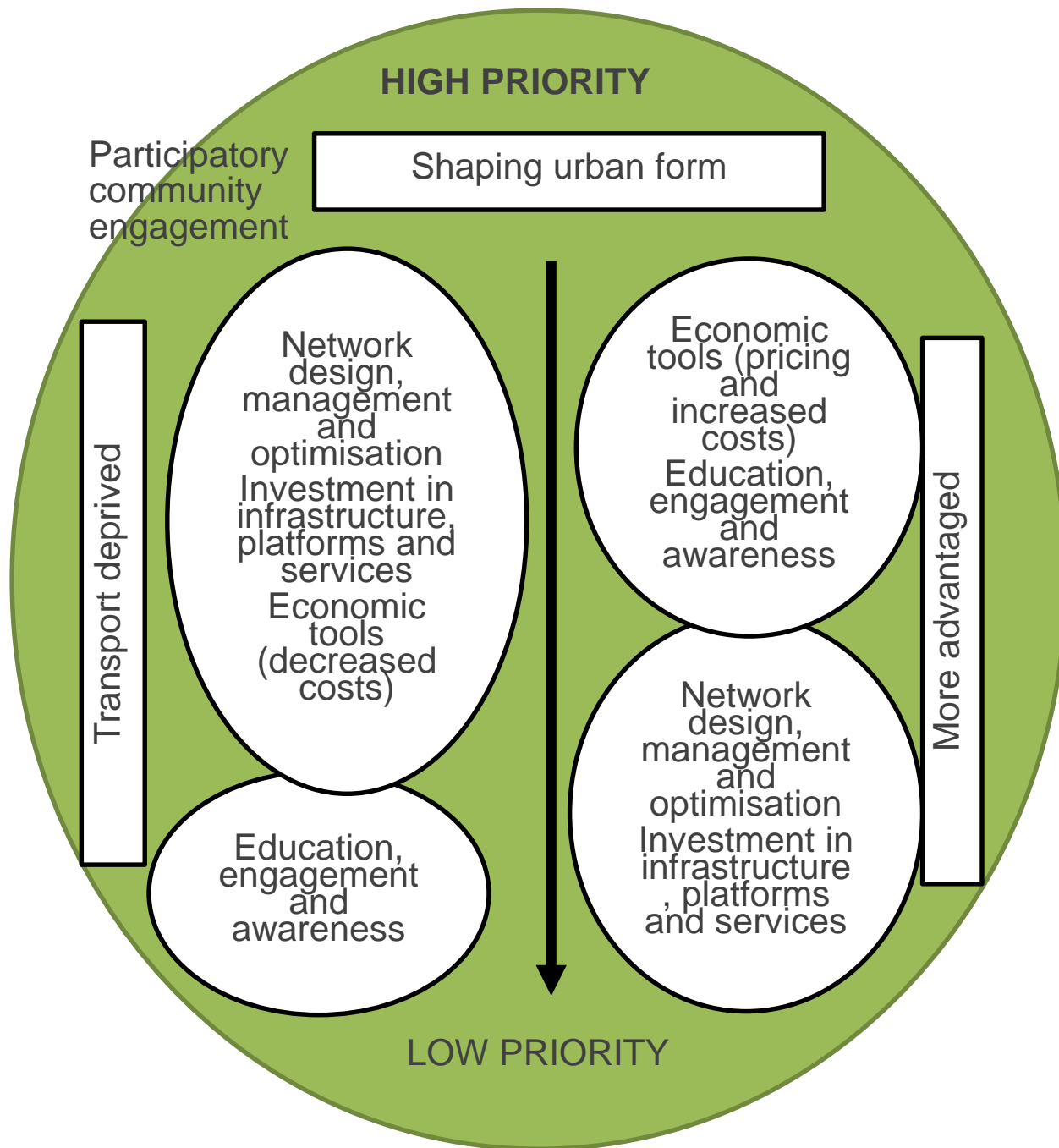|	Social impacts			Distributional impacts		
	Transport resources	**Risks and opportunities**	**Outcomes and wellbeing**	**Income**	**Location**	**Ethnicity**
Spatial and place-based planning	Reduced need for transport resources	Improved access to opportunities Reduced exposure to risk	Reductions in overall travel Increased active travel and social connectedness	Can reduce housing and transport costs Can increase property values (gentrification)	Can impact on housing and transport costs Can reduce travel distances and need to travel	Can lead to displacement Opportunity for incorporating cultural values and identity in design
Policy and regulatory settings	Easier to walk and cycle, public transport More difficult to drive	Reduced exposure to risk (safety and severance)	Fewer road traffic injuries Improved social connectedness	Can reduce safety risk in deprived areas	Can reduce safety risk in deprived areas	Regulations may lead to discrimination

Making shared and active modes more attractive

	Social impacts			Distributional impacts		
	Transport resources	**Risks and opportunities**	**Outcomes and wellbeing**	**Income**	**Location**	**Ethnicity**
Network design, management and optimisation	May change access to PT. May change need to travel	Changes to network design impact on accessibility to opportunities. Street design can reduce pedestrian injury	Can lead to more active transport	Optimisation can remove coverage from low income areas. Safety improvement can benefit lower income areas	Optimisation may reduce rural services	May benefit from targeted safety programmes
Investment in infrastructure, platforms and services	Can improve access to transport networks. New infrastructure may increase cost	Can reduce injury for pedestrians and cyclists. Can increase access to opportunities	Walking and cycling infrastructure can increase physical activity. PT infrastructure can lead to shifts from active modes	May cause displacement (gentrification). AT infrastructure can increase walking and cycling and access to opportunities	Rural areas may not benefit from PT or AT investment	May cause displacement (gentrification)

Influence travel demand and transport choices

	Social impacts			Distributional impacts		
	Transport resources	**Risks and opportunities**	**Outcomes and wellbeing**	**Income**	**Location**	**Ethnicity**
Economic tools (pricing and incentives)	Impacts the cost of travel	May change access to opportunities	Public transport subsidies can increase trips, disincentives to car use can improve health	Can cause financial stress	Peripheral areas may lack car alternatives	Impacts depend on design
Education, awareness and engagement	Can support skills development	Can broaden access to opportunities through enhanced skills	Can help road safety and confidence with active travel. May have limited impact	May benefit most advantaged	Peripheral areas may not be included	Targeted programmes can address inequities

HIGH PRIORITY

Participatory community engagement

Shaping urban form

Transport deprived

Network design, management and optimisation
Investment in infrastructure, platforms and services
Economic tools (decreased costs)

Education, engagement and awareness

Economic tools (pricing and increased costs)
Education, engagement and awareness

Network design, management and optimisation
Investment in infrastructure, platforms and services

More advantaged

LOW PRIORITY

Recommendations for mode shift policy

- Prioritisation of mode shift policies to promote positive social impacts and equitable transport policy

- Participation and partnership in decision making

- Rights and needs based approaches

- Reducing overall travel

- Funding, appraisal, evaluation and longer term perspectives

Research needs

- Evaluation and impacts

- Current situation

- Basic needs in transport

- Implications of new transport modes and delivery models

Final Report

- https://www.nzta.govt.nz/assets/resources/research/reports/666/666-Social-impact-assessment-of-mode-shift.pdf