Interventions for a sustainable transport system in New Zealand: Results from a Delphi study

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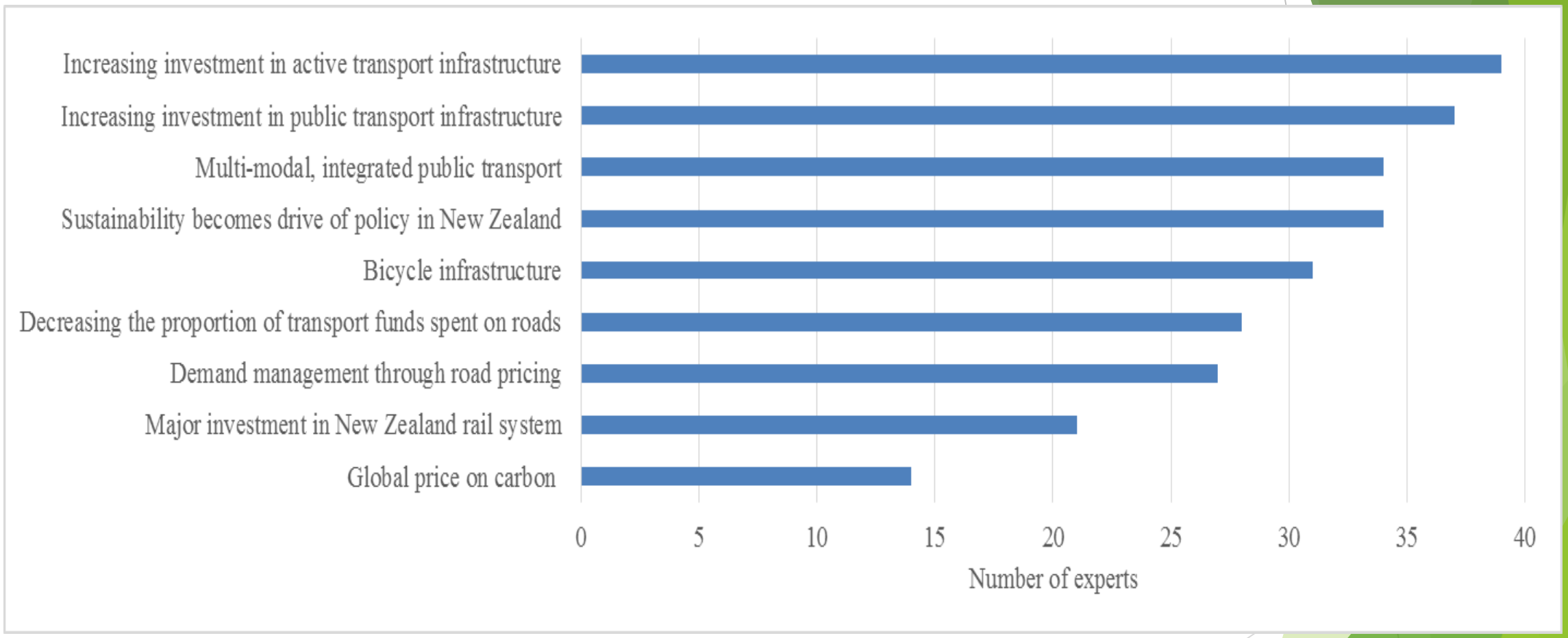
The Delphi technique

- Iterative, multi-stage survey process
- Brings together a range of expert views on complex topics
- Widely used as a forecasting tool

- The present study: understand expert views on the drivers of change to New Zealand's transport system and which innovations are required to ensure NZ continues to thrive.
- Total of 86 transport-related experts. More in central Government (27 of 86) than other sectors, with NGOs second and industry third. Greatest expertise in active transport, policy and planning, personal transport, and transport-related infrastructure.

The Delphi with NZ transport experts

- Round 1: open-ended questions about the three most influential trends, innovations, and step changes that could lead to changes in the country's transport systems.
- Round 2: rate the likelihood those factors will become widespread within 10 years and their potential to transform BAU in the long-term.
- Round 3: nominate the top trends, innovations, and step changes for which interventions are most urgently needed.
- **Round 4:** describe the interventions that are needed to allow achieving at least three of those priorities.


Increasing investment in active transport infrastructure
Increasing investment in public transport infrastructure
Multi-modal, integrated public transport
Sustainability becomes drive of policy in New Zealand
Bicycle infrastructure
Decreasing the proportion of transport funds spent on roads
Demand management through road pricing
Major investment in New Zealand rail system
Global price on carbon
0
5
10
15
20
25
30
35
40
Number of experts

Interventions for sustainable transport in NZ

- Changing how transport is funded
- Equalising mode-share
- Recognising the impacts of climate change
- Changing urban form
- Shifting overarching Government policy
- Improving rail
- Changing the consultation process
- Increasing uptake of low-emission and electric vehicles
- Enhancing education

Funding

- Re-allocate transport funds (67% of experts)
- Structural and cultural changes (31%)
- A broader view of the impacts and co-benefits of transport (24%)
- The source of funds for active and public transport (24%)

Mode-share

- Changes to legislation and policies (64%)
- Infrastructure and policy interventions for improving cycling safety (29%)
- Improving connectivity and integration across transport modes (24%)
- Network design changes (21%)
- Better factor in co-benefits (17%)
- Changes in the structure of regulatory agencies (12%)
- Technology-based interventions (12%)

Impacts of climate change

- Recognise costs of climate change (29%)
- Instituting carbon-related measures such as an ETS, a minimum carbon price, and a global carbon agreement (19%)
- Factor in risks associated with vulnerability to energy markets (5%)

Urban form

- Change urban form policies (42%)
- Better linkages between urban form and transport policies (19%)
- Changes related to suburbs and public transit (17%)

Overarching Government policy

- Need for laws to better prioritise sustainability (26%)

Rail

- Expand passenger rail services (21%)
- Better linkages between rail and industrial areas (14%)

Consultation processes

- Cross-governmental working groups (7%)
- Consultation with cycling advocates and other stakeholders (5%)

Low-emission and electric vehicles

- Policy and technological interventions to increase the uptake of low-emission and electric vehicles (10%)
- Recognising the co-benefits of low-emission and electric vehicles (10%)

Education

- Re-frame information to the public (7%)
- Upskill engineers / planners (5%)

Summary

- Substantial, long-term changes are required
- Wide variety of available interventions
- Co-benefits!
- Financing, decision-making environment, and infrastructure

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  http://energycultures.org/

- Stephenson, Hopkins, & McCarthy. (2014). *New Zealand's future transport system: drivers of change. Initial report from the NZ Delphi study*.
  https://ourarchive.otago.ac.nz/handle/10523/5399