



NZTA research summary

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A catalogue of evidence for transport interventions: design and initial prototype

It's difficult to find evidence about which transport interventions work, to know which ones will be best for New Zealand.

People who work in New Zealand's transport sector want evidence about the effectiveness of transport interventions around the world. This helps them decide which interventions are best for our cities, regions and communities. However, it can be difficult to find this evidence. It's especially difficult to compare evidence, because it covers a wide range of transport interventions (such as infrastructure, services and policy) that are designed to achieve many different outcomes (such as keeping people healthy and safe, or contributing to economic prosperity). And the sources, types and quality of evidence are very variable, making them hard to assess and compare.

Having a catalogue of evidence could make it easier for transport practitioners to compare and use evidence for transport interventions.

This study aimed to design a digital catalogue for transport practitioners, so they can search evidence for transport interventions by their:

- effectiveness (which interventions work the best)
- cost (which interventions are the cheapest to set up and run)
- transferability (which interventions from other countries are most relevant to New Zealand).

The catalogue design intends to overcome the difficulties of finding, assessing and comparing evidence about transport interventions, by having a structured way to collate, catalogue and synthesise evidence.

Catalogues of evidence come in all shapes and sizes.

The researchers looked at other transport and non-transport catalogues, to see how they are structured, operated and maintained, what they cost to set up and run, and what features and functions they have. Some catalogues cover a broad range of topics, but the three transport catalogues the researchers examined each have a narrow focus (sustainable urban transport, transport safety and transport decarbonisation). While most catalogues are online, not all are available to a wide audience or designed to be user-friendly. Some, but not all, catalogues are able to compare different sources of evidence.

The best catalogues have a clear structure and a user-friendly interface. They have clearly defined standards about the type and quality of evidence they include, and they use consistent language that users can understand. They also enable users to easily search for, and compare, evidence and identify where there are gaps in the evidence.

New Zealand transport practitioners want a catalogue that contains comprehensive and comparable evidence for a wide range of topics.

The researchers also spoke to New Zealand transport practitioners, policymakers and researchers, to see what features in a catalogue would be most useful for them. They want a catalogue that contains comprehensive evidence on a wide range of topics related to transport interventions. They want evidence that explains the costs and effectiveness of an intervention, gives details about the setting where it was used and offers experts' analysis of it. They want the evidence in the catalogue to be relevant to New Zealand's transport decisions. Finally, they want to be able to compare evidence about the same types of interventions (such as interventions designed to improve safety).

This project has designed a prototype catalogue tailored for New Zealand.

In this project, the researchers have designed a catalogue whose structure mirrors the categories in New Zealand's Transport Outcomes Framework. The catalogue can accommodate different types of evidence on a wide range of transport interventions designed to achieve different types of outcomes for people, the economy and the environment. The design includes standards for the type and quality of evidence the catalogue will include (evidence standards) and the data fields that will be completed for each piece of evidence (metadata standards). This means the catalogue presents diverse pieces of evidence in a standardised way.

The researchers have built a digital prototype of the catalogue, to demonstrate its design features. Users can search and compare evidence in the catalogue as a list or on a map. They can filter the evidence by categories, such as an intervention's type, outcome or relevance to New Zealand, and see a synthesis of their search results.

The prototype also has a 'rule of thumb' decision-support tool. This tool is designed to help users form a judgement, when they compare dissimilar evidence or consider whether an intervention in another country could be successfully transferred to New Zealand.

There are gaps in evidence about transport interventions, and this catalogue makes it easier to see and fill those gaps.

Despite how critical an intervention's cost and context are to its effectiveness, including these categories in the catalogue prototype shows how infrequently they are described in evidence. These information gaps can limit opportunities to improve the transport system. The catalogue's evidence standards and metadata standards will reveal these gaps, which may prompt researchers and practitioners to generate much-needed new evidence from operational reports that aligns with research and evaluation reports.

The standards in the catalogue can be used as standards that New Zealand's transport projects are evaluated on and reported against. This approach will help ensure that new evidence originating from New Zealand is more comprehensive and better quality.

Potential users say the prototype catalogue will be useful for a range of activities and tasks.

NZTA staff and a council officer, who reviewed the prototype catalogue, said it will help them respond to Official Information Act 1982 requests, design transport interventions, make investment decisions and stay informed about what's happening in the transport sector. They also suggested ways to improve the catalogue.

Because the catalogue is designed for a diverse range of evidence, it will help transport practitioners understand what causes an intervention to be effective and whether, and how, it can be successfully transferred to their setting. By standardising information from different sources of evidence and using the 'rule of thumb' decision-support tool, the catalogue can also help users make inferences about the search findings (such as which interventions are most relevant to their setting) and judge how confident they can be about those inferences.

The prototype catalogue will meet users' requirements if it is appropriately resourced.

Having a catalogue that contains comprehensive and diverse evidence needs to be balanced with the resources required to update and maintain it. Some types of information (such as information about costs) are often missing or recorded inconsistently in pieces of evidence, which makes it difficult to ensure the evidence is comprehensive. And the methods that other catalogues use to systematically synthesise evidence are expensive to run and restrict the range of evidence types a catalogue can include.

Rather than restrict this catalogue to a narrow range of evidence, the design ensures that, where possible, it gathers consistent information from sources in standardised ways, so that it can compare diverse evidence. This approach leaves it possible to add more specialist synthesis methods in future.

Setting up the catalogue should focus on capturing users' interest and keeping them engaged.

Having reviewed other catalogues, designed a prototype catalogue for New Zealand and consulted with potential users and the project's steering group, the researchers recommend ways to build on the catalogue's design.

These include maintaining the broad scope of the prototype catalogue, but prioritising its current scope, so it remains affordable; further developing the language it uses, so that it is clear and used consistently; and adding features (such as a search-results dashboard) that highlight gaps in current evidence.

The researchers also recommend approaches to setting up the catalogue that will attract users' interest and keep them engaged. These include investing resources into quickly getting its content up to a useful size and broad coverage of topics; training administrators to enter data consistently, so that users are confident in the content; and providing users with useful services, such as access to the full text of evidence sources and links to complementary resources.



RR 725: *A catalogue of evidence for transport interventions: design and initial prototype.*

NZ Transport Agency Waka Kotahi research report.

Available at www.nzta.govt.nz/resources/research/reports/725