

Mode choice in Freight Transport in New Zealand

Findings of a Revealed Preference (RP) Survey of Shippers

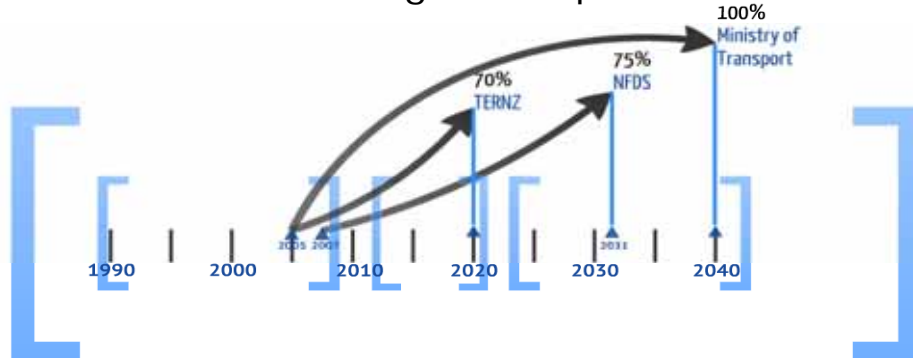
Chan Kim, MSc, PhD Candidate



Introduction



- Demand for Freight transport in NZ (tonne-kilometres)



- **92% of total volume** of freight movements are made by **road**

Sources: TERNZ, NFDS and Ministry of Transport

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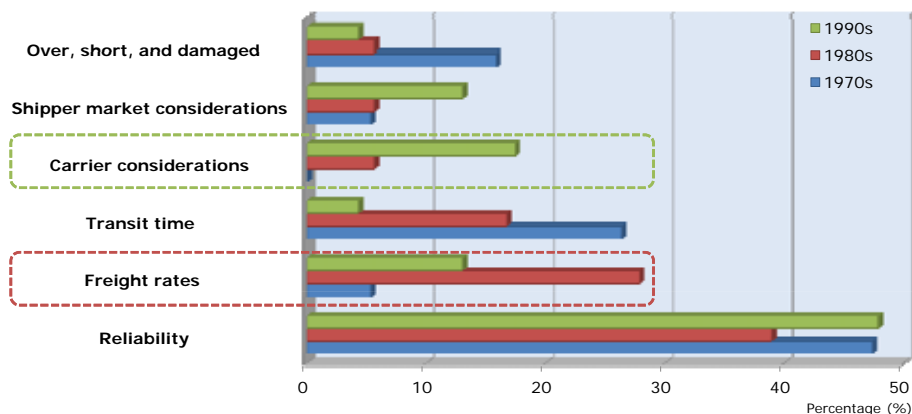
NZ Freight patterns

- Changes in the shape of products being transported and logistics patterns of firm
- **67%** of NZ manufactures outsourced logistics services*
 - The common outsourced services: Outbound transportation(79%), Warehousing(53%), and Shipment consolidation(48%)

Sources: *Zhang (2009)

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Background: Mode Choice literatures



- Mode Choice Perceptions 1970s~ 1990s (Murphy et al. 1995)

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Background: NZ Studies

- Freight Mode Choice Studies in NZ
 - the National Freight Demand Study
(NFDS : Richard Paling Consulting, 2008)
 - Coastal Shipping and Modal Freight Choice (Rockpoint, 2009)
 - the Gisborne to Napier Coastal Shipping Study (Warwick Walbran Consulting, 2010)

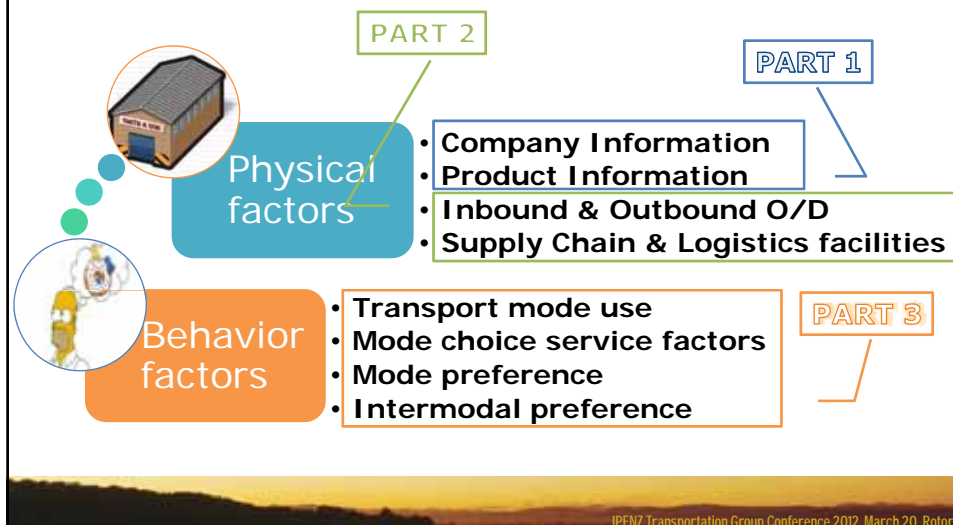
Study Questions

- What is the use of **road transport fleet** and the nature of the **relationships with carriers**?
- What **service attributes** do shippers use to select transport mode(s) and which attributes are most and least important?
- What are the shipper's **perceptions of rail and sea** shipping?
- What are the differences in the **total logistics cost** between business types?

Research Method

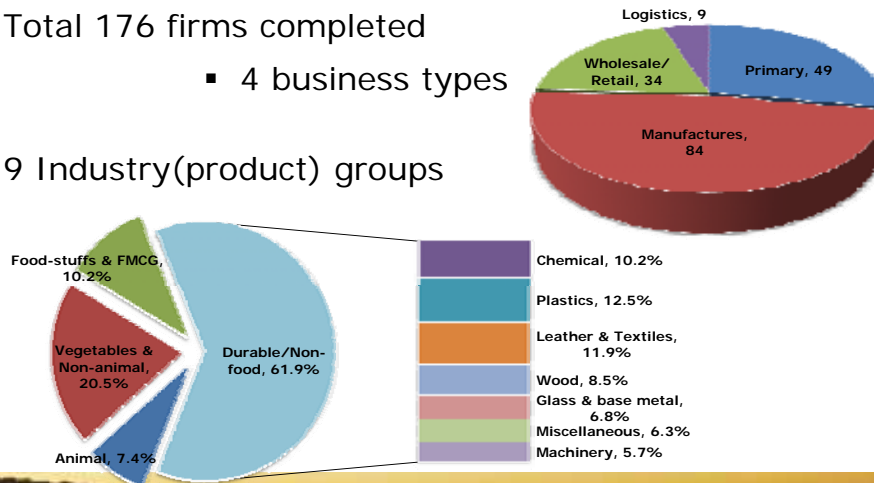
- RP(Revealed Preference) Survey
- Web-based questionnaires
- Survey sample sources: New Zealand Stock Exchange (NZX), Industry association/ groups, and councils
- Invitation sent to 1900 NZ based companies from June ~ September 2011

Questionnaires



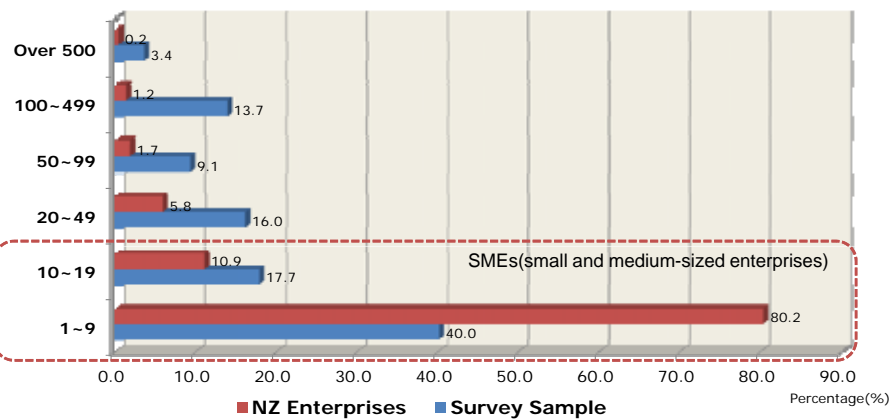
Sampling & Data Collection

- Total 176 firms completed
 - 4 business types
- 9 Industry(product) groups



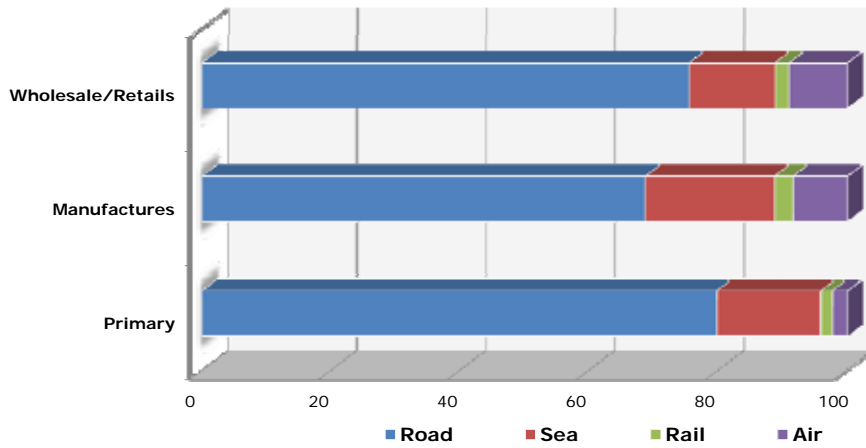
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Survey Sample: Number of employees



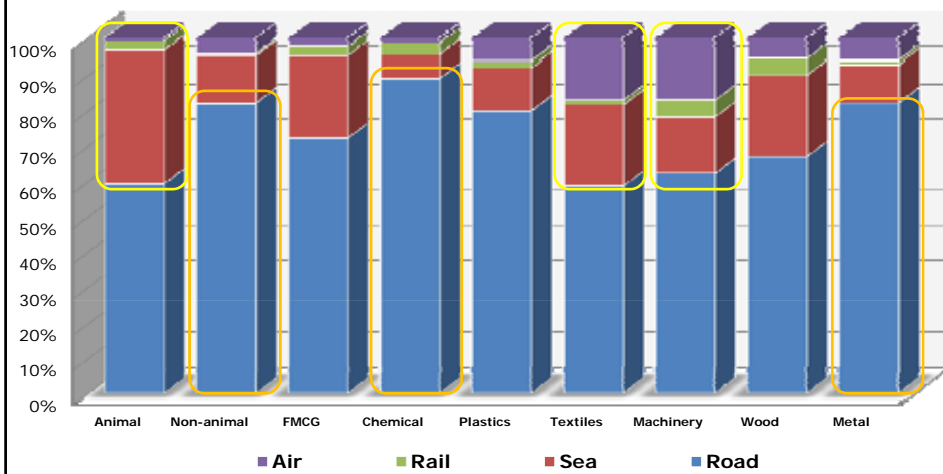
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Mode Share: by Business Types



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Mode Share: by Product Groups



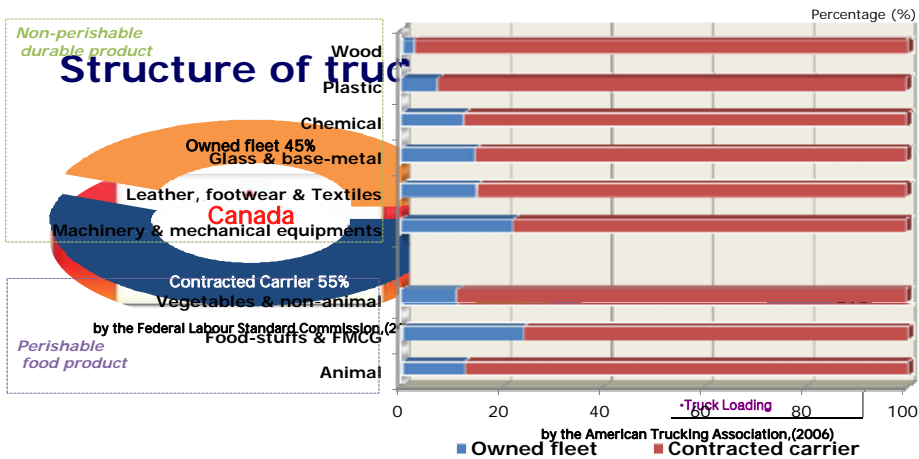
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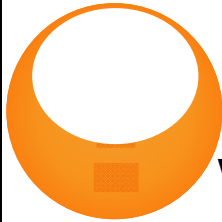


What is the use of *road transportation fleet*?

What is the nature of the *relationships with carriers*?

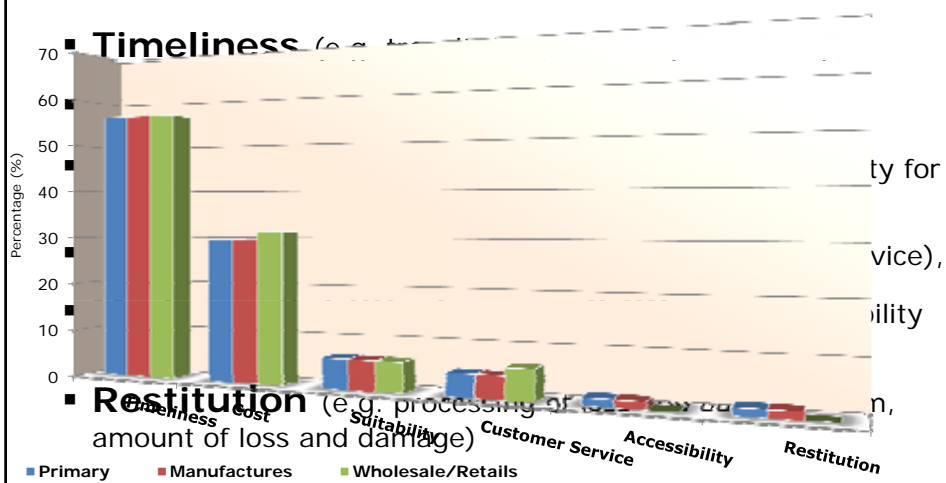
Road Transport





What *transport mode(s) characteristics* do you consider most important?

Mode Choice: Service Factors & Preference

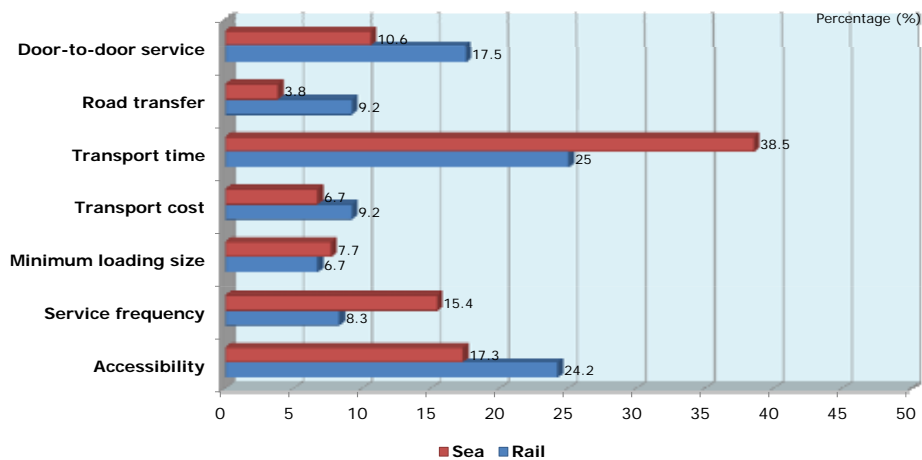




What are *the most important constraints* that discourage you from using RAIL/SEA to carry your products?

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Mode shift: Constraints to Rail & Sea

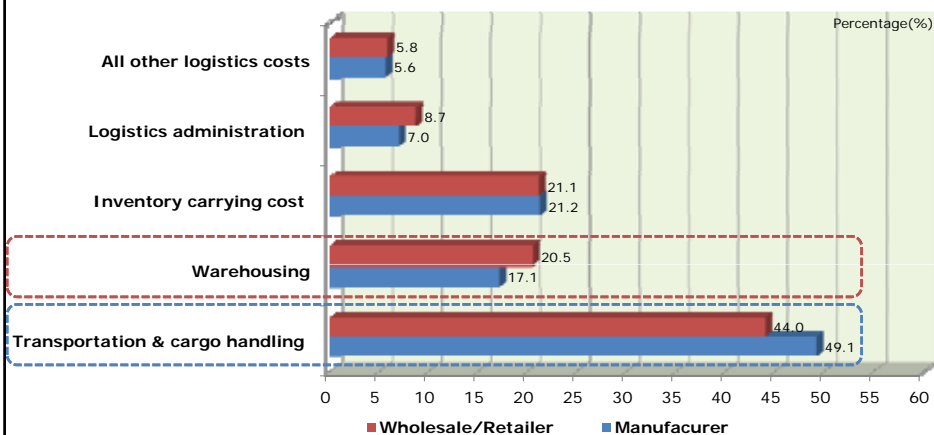


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What are the differences in the *logistics costs* between business types?

Logistics Cost



Conclusions

- NZ shippers strongly prefer **road transport**
- NZ shippers rely heavily on **contracted carriers**
- There is increased emphasis on **timeliness** and **cost** as mode choice factors
- NZ shippers have negative perceptions about transporting goods by both rail and sea in terms of **poor accessibility** and **transport time**.
- Wholesalers/retailers spent more on **warehousing costs**, while manufacturers spent more on **transportation costs**.

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Q & A

Hyun-chan.kim@pg.canterbury.ac.nz