

# Propensity to use public transport: Who uses it and what that tells us about cities.



**Alison Lee** | Principal, Transport Planning, Auckland

*with thanks to* **Joy Chen** | Senior GIS Analyst, Auckland



# The idea behind 'propensity' to use



Image courtesy of a variety of Google searches.



# What can transport planners learn from Starbucks?

Know their market



Open stores where there market wants them



Can this approach be applied to transport planning?

Image courtesy of a variety of Google searches.



# Which are the areas where most people would transfer from car to public transport?

Client Brief

Consultant Role

Situation

Complication

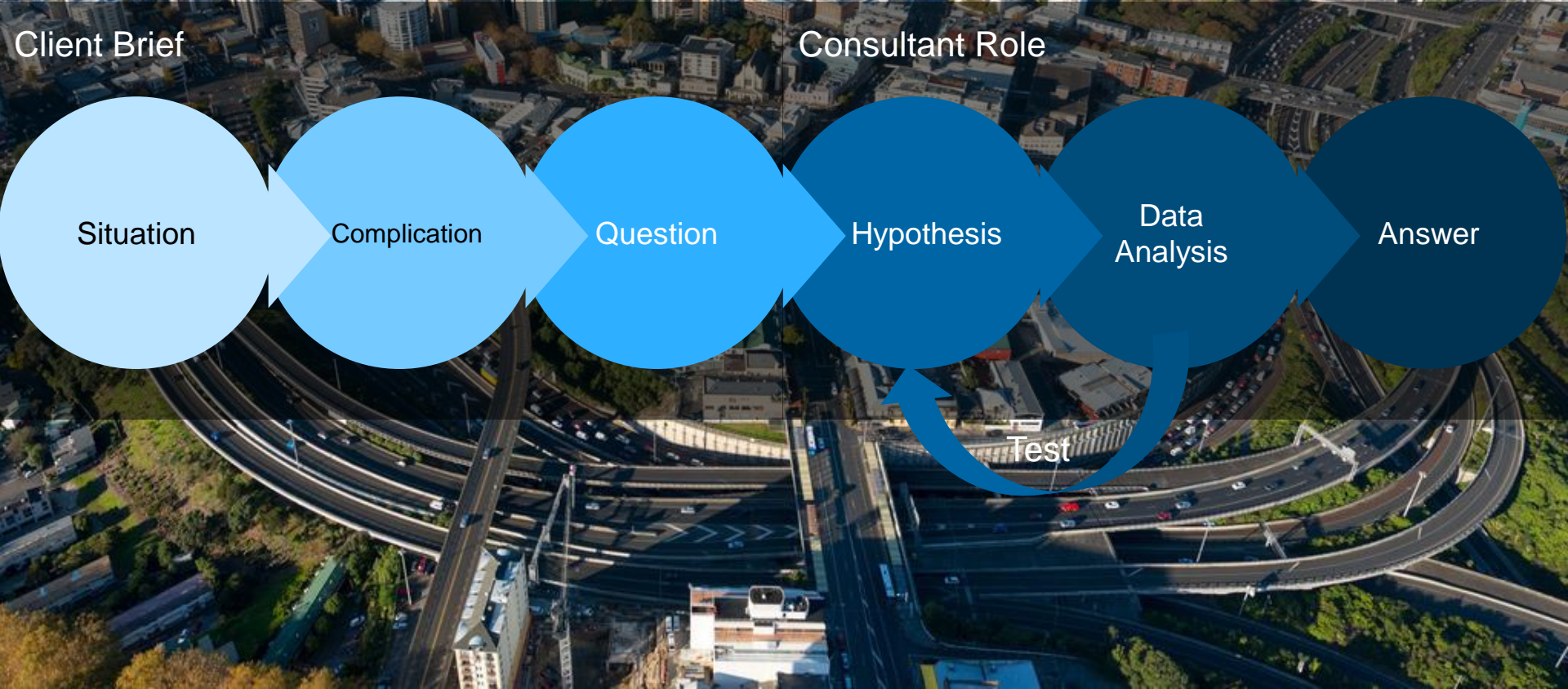
Question

Hypothesis

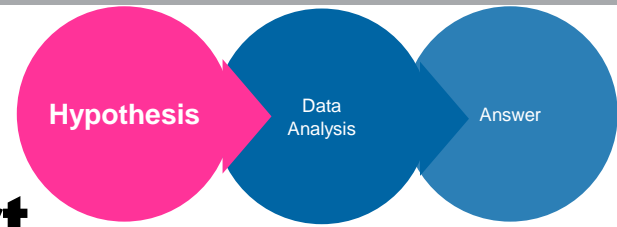
Data Analysis

Answer

Test



# There is a certain type of person who is likely to use public transport



Live close to Central City

Distance to Town Centre

Live near public transport

NZ Born

No Higher Education

Ethnic Background

Gender

Higher Education:  
Degree,  
Certificate, PHD  
level education

Studying  
or Not  
Studying

Overseas Born

Family Status

Unmarried/Married

With/without Children

Age 20-29  
Age 30-39

Working >40 hrs per week

Working 20-40 hrs per week

Working <20 hrs per week

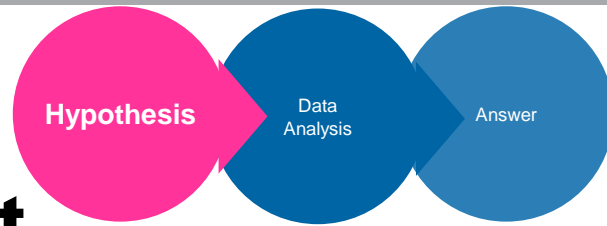
Income

Age 40-49  
Age 50+

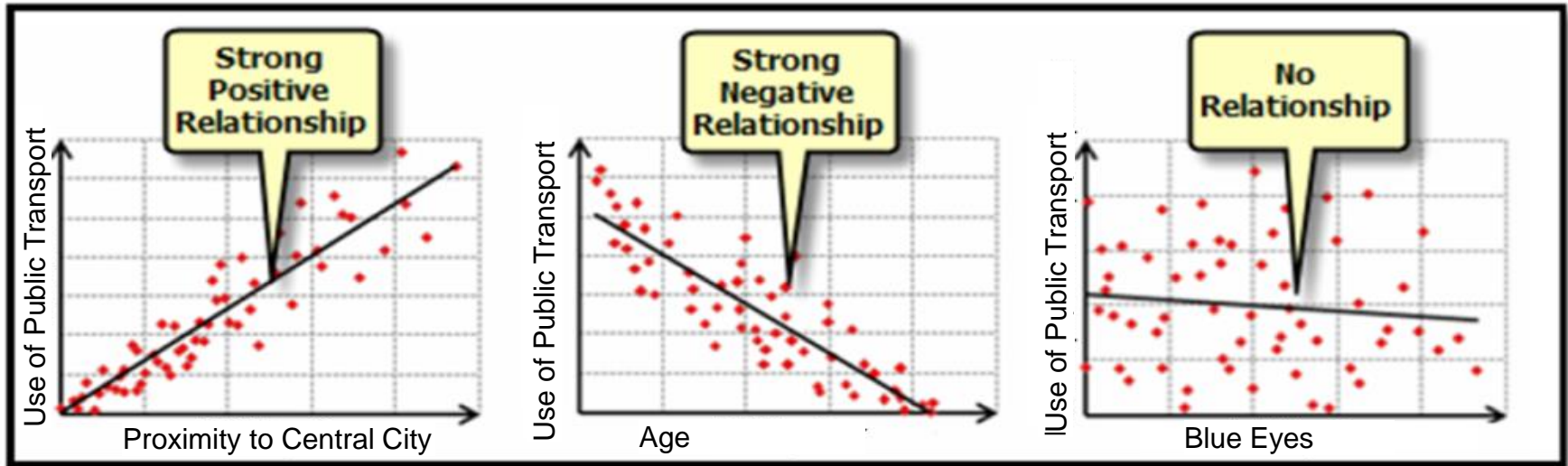




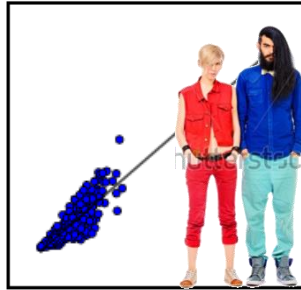
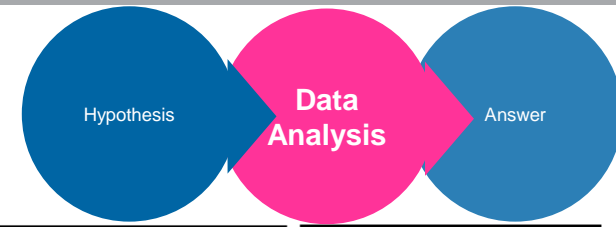
# There is a certain type of person who is likely to use public transport



Not actual results:  
For Illustrative Purposes Only



# Regression analysis was undertaken



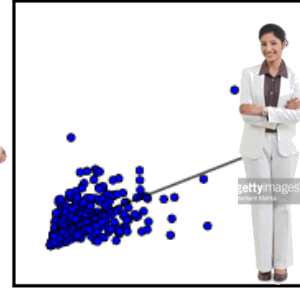
No Child/ren



Has Child/ren



Ethnicity: European



Ethnicity: Asian



NZ Born



Unmarried



Married



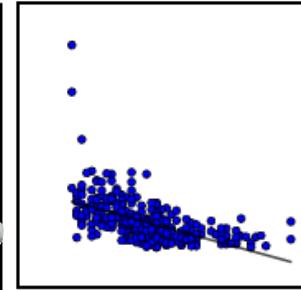
Study



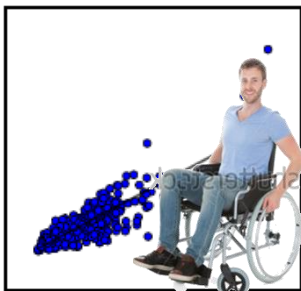
Work < 20hrs



Work 20-40hrs



Distance to CBD



Educat: Degree



Educat: Certificate



Age: 20-29



Age: 30-39

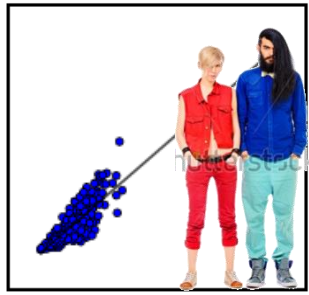
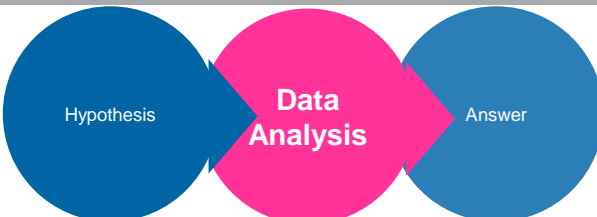


Age: 40-49



Age: 50-64

# 7 variables with strong relationships



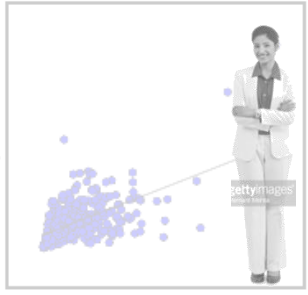
No Child/ren



Has Child/ren



Ethnicity: European



Ethnicity: Asian



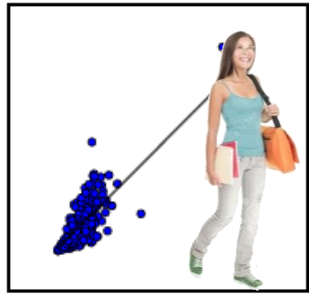
NZ Born



Unmarried



Married



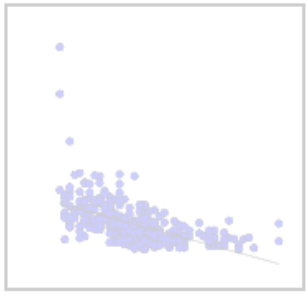
Study



Work < 20hrs



Work 20-40hrs



Distance to CBD



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Age: 30-39



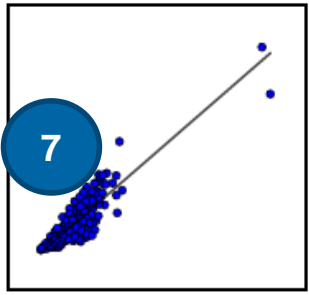
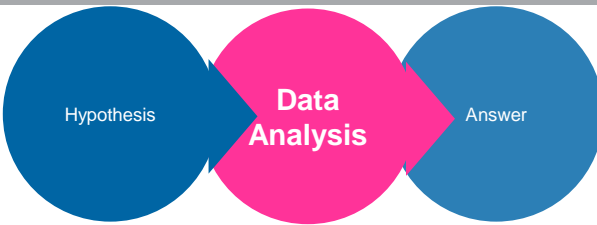
Age: 40-49



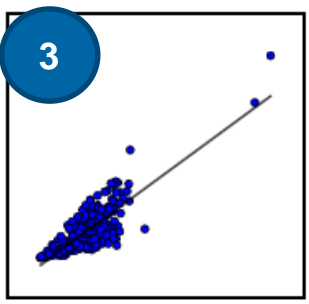
Age: 50-64



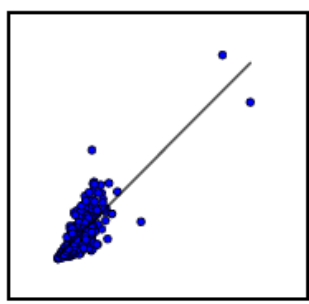
# 7 variables with strong relationships



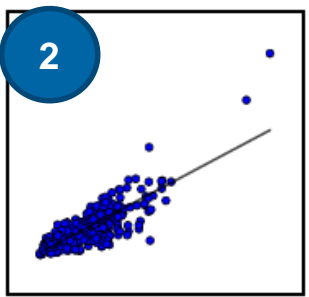
No Child/ren



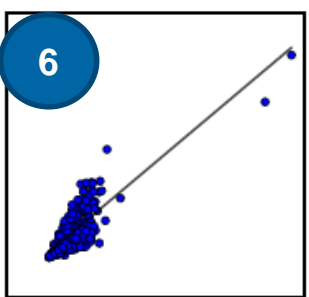
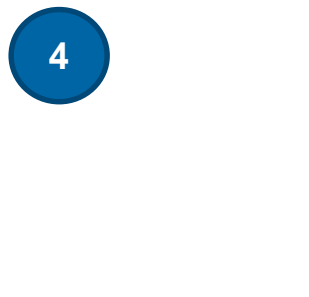
Unmarried



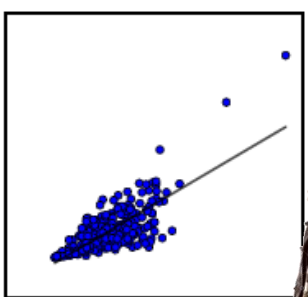
Study



Educate: Degree



Age: 20-29



Age: 30-39

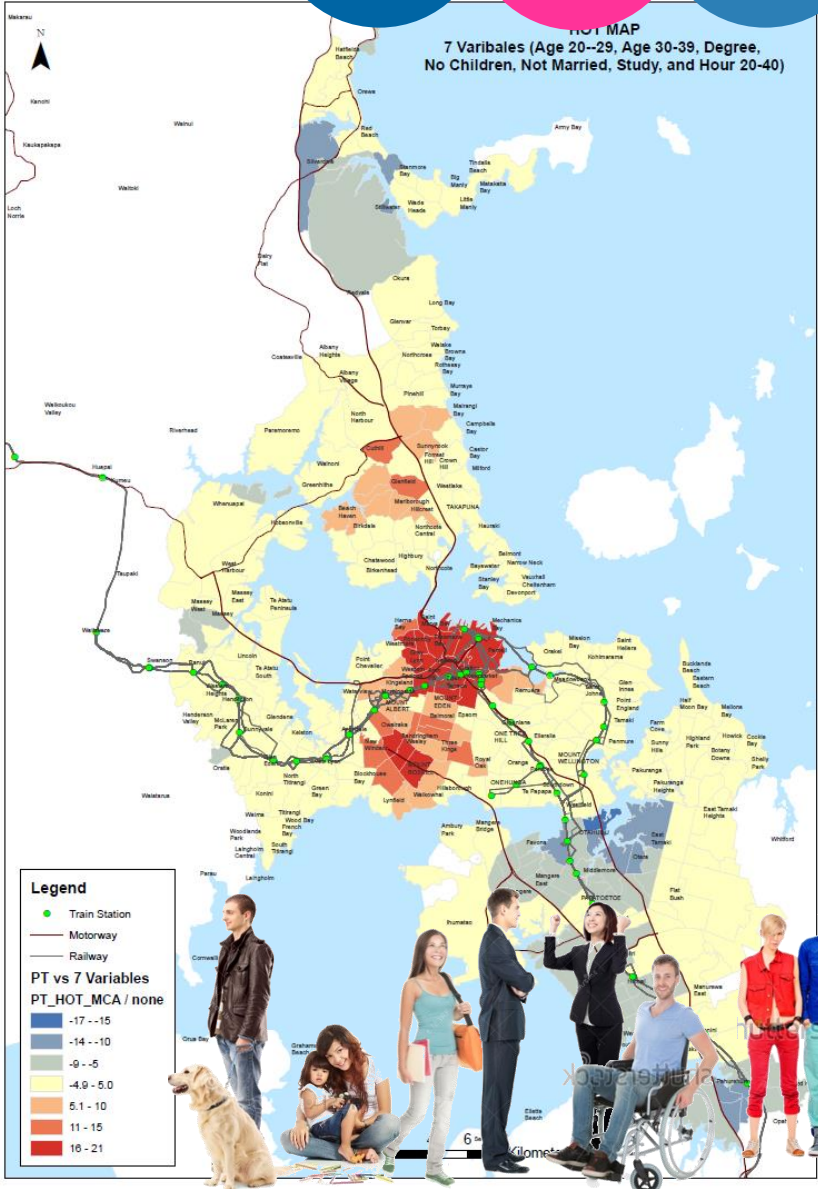
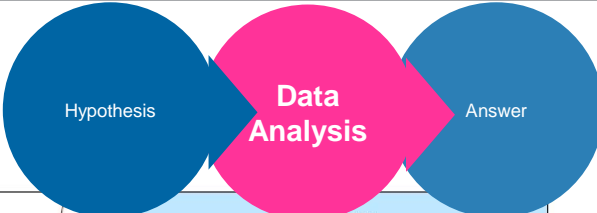
**Significant Variables:  
Adjusted R<sup>2</sup> Value >0.55**

	Variables tested	Adjusted R-Squared Value
Significant Variables	No Children	0.777720
	Education: Degree	0.679366
	Unmarried	0.668424
	Age group: 20-29	0.625646
	Study	0.600942
	Age group: 30-39	0.579748
	Working Hours: 20 – 40 hours	0.566122

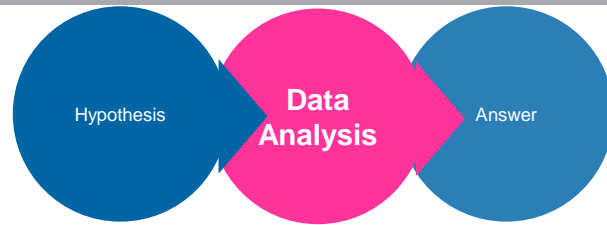
Work 20-40hrs



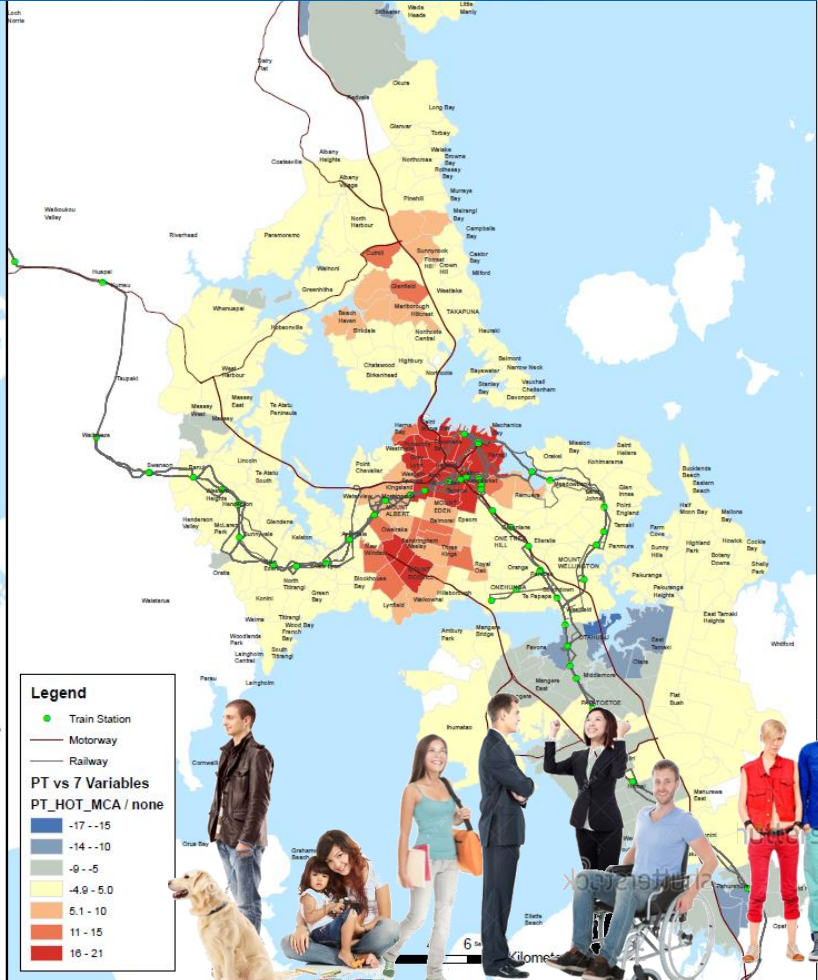
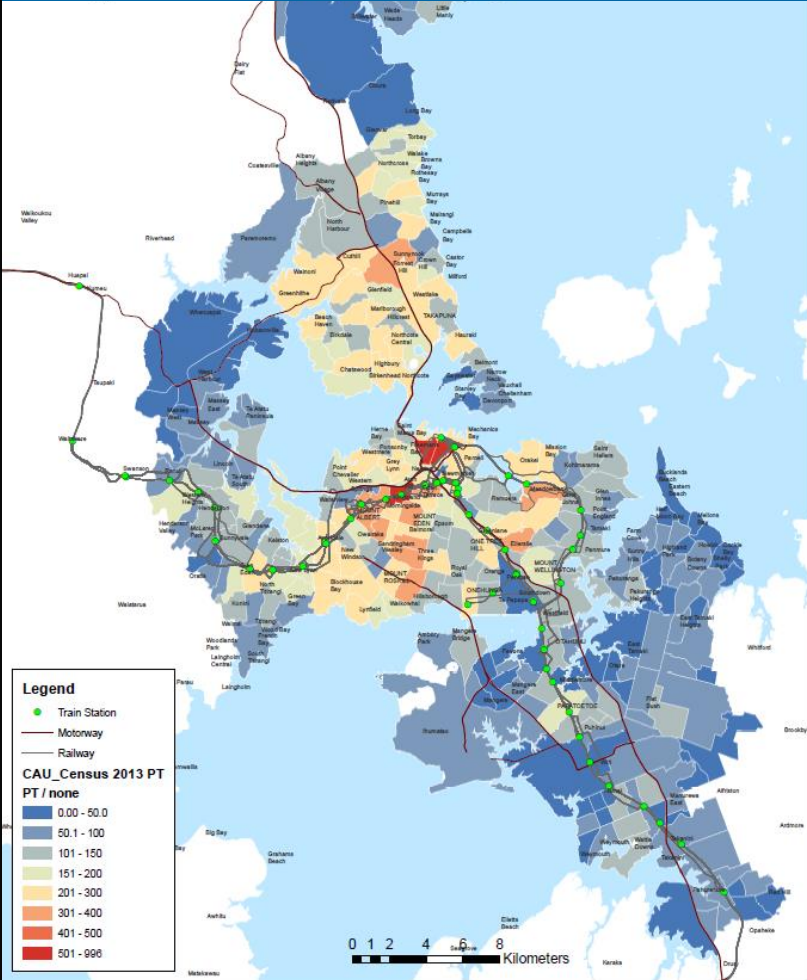
# 7 variables with strong relationships



# Comparing actual PT users and those who have propensity

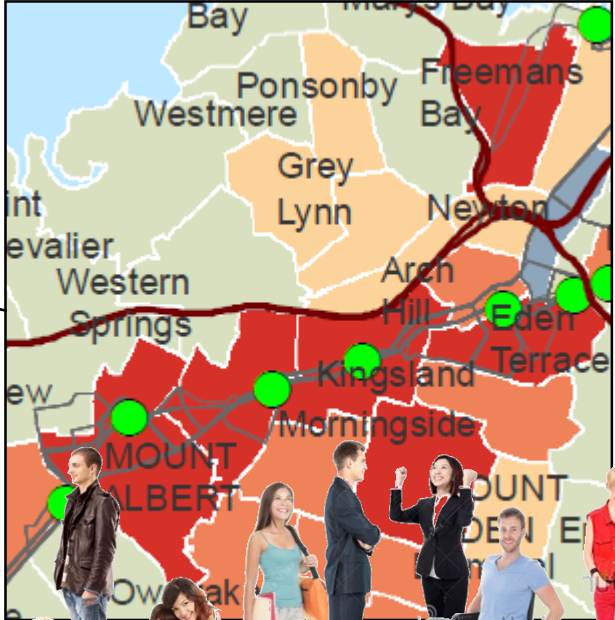
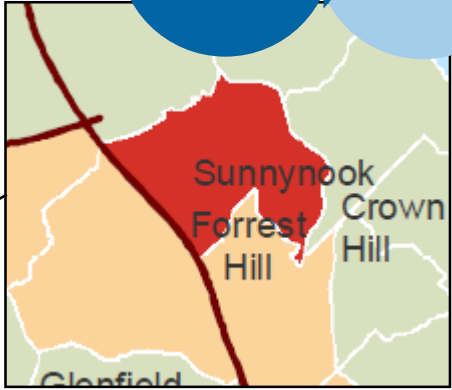
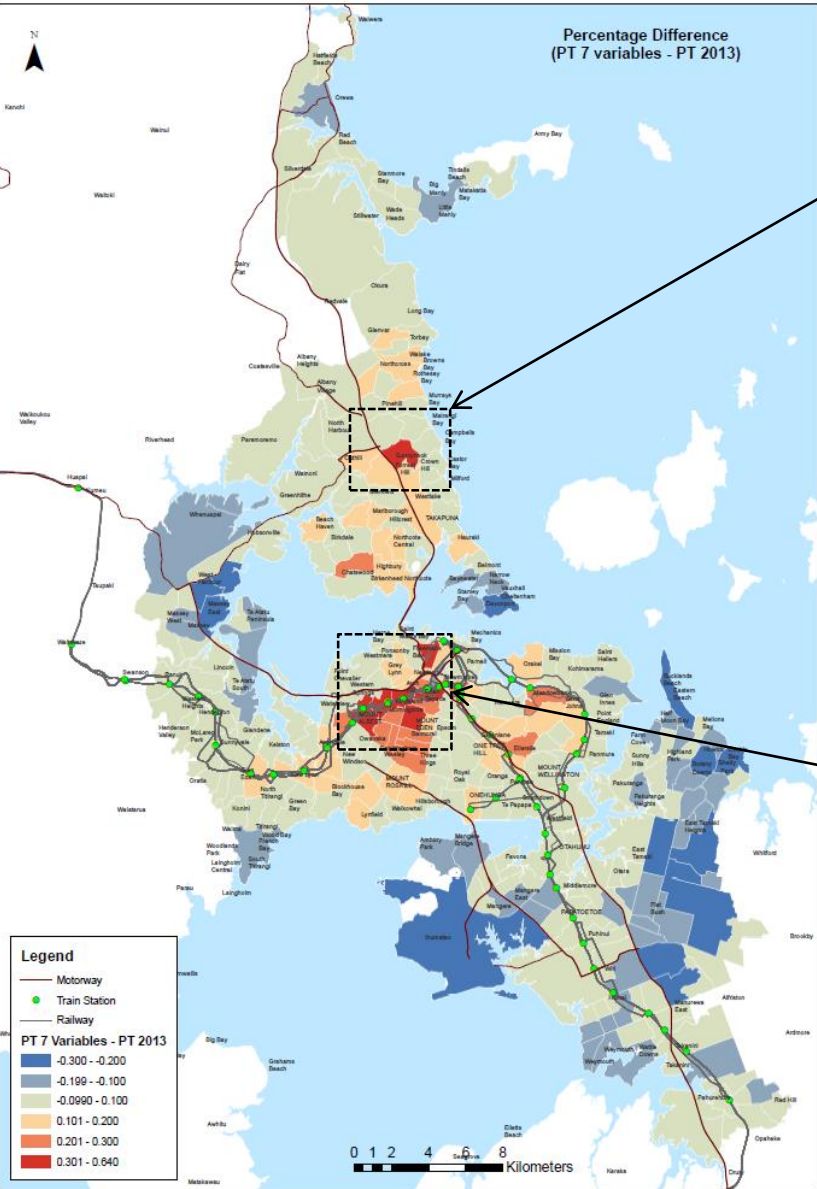
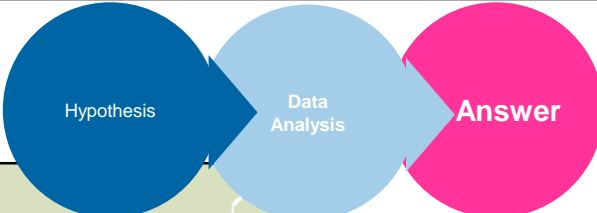


## PT users Areas where the population has propensity to use PT





# Propensity to use public transport



# Key Findings

Market analytics can inform transport planning.

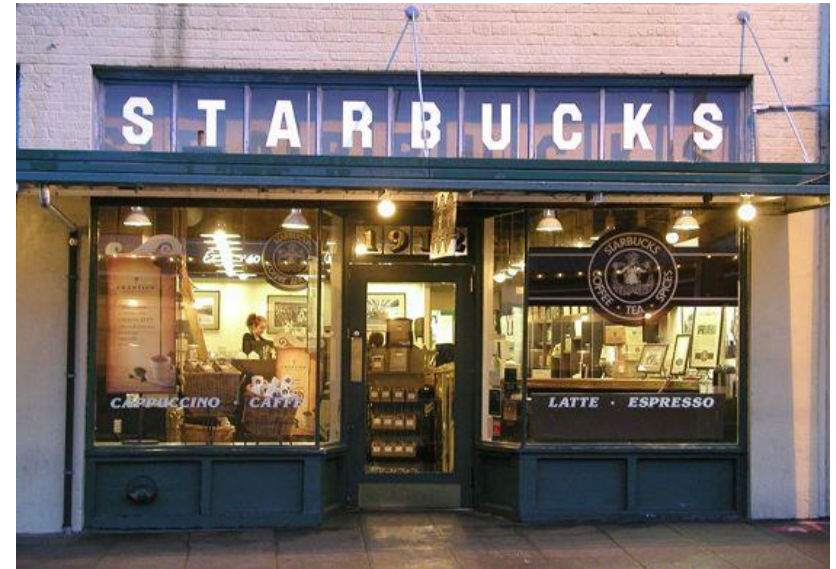
- Route planning
- Areas of mode shift potential
- More...

## A Word of Caution

- Starbucks is a company
- Public transport is a public good.

## Future Implications

- Marketing campaigns
- The look and feel of the fleet
- This project only relates to public transport use. Other modes?



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