2018 Census

Transport Analysis and Implications for AT

Board paper attachment 1 – findings presentation

Auckland Transport

An Auckland Council Organisation

This presentation

- The Census is a key data source, showing how people in Auckland are choosing to travel and the trends in travel behaviour. It provides us useful guidance in shaping our future transport plans.
- This presentation provides analysis and interpretation of the 2018 Census results for Journey to Work (JTW) and Journey to Education (JTE) data for Auckland. It should be read in conjunction with the Board paper. Further information is available in the full report, '*Analysis of the 2018 Census results – Travel to work and travel to education in Auckland*', which is included as Attachment 2.
- The presentation is structured to provide high level findings, JTW region-wide analysis, JTW analysis by specific geographic sectors and then JTE analysis.

The 2018 Census

In addition to the well known data collection issues associated with the 2018 Census, there were other changes which have affected the results. These include:

- A **change in question**, which now asks for the usual commute to work (2018), as opposed to the manner of travel on the day of the Census (2013 and earlier) – *see next slide*
- A **change in confidentiality constraints**, which led to a loss of almost 40 per cent of data for the most detailed analysis (compared to reductions of about 25 per cent from previous censuses), which may result in unreliable information and comparisons, especially relating to active modes
- **A new question for JTE** has been included for the first time in the 2018 Census
- Ferry was part of “other” in the 2013 Census, but was a **separate category** in 2018.

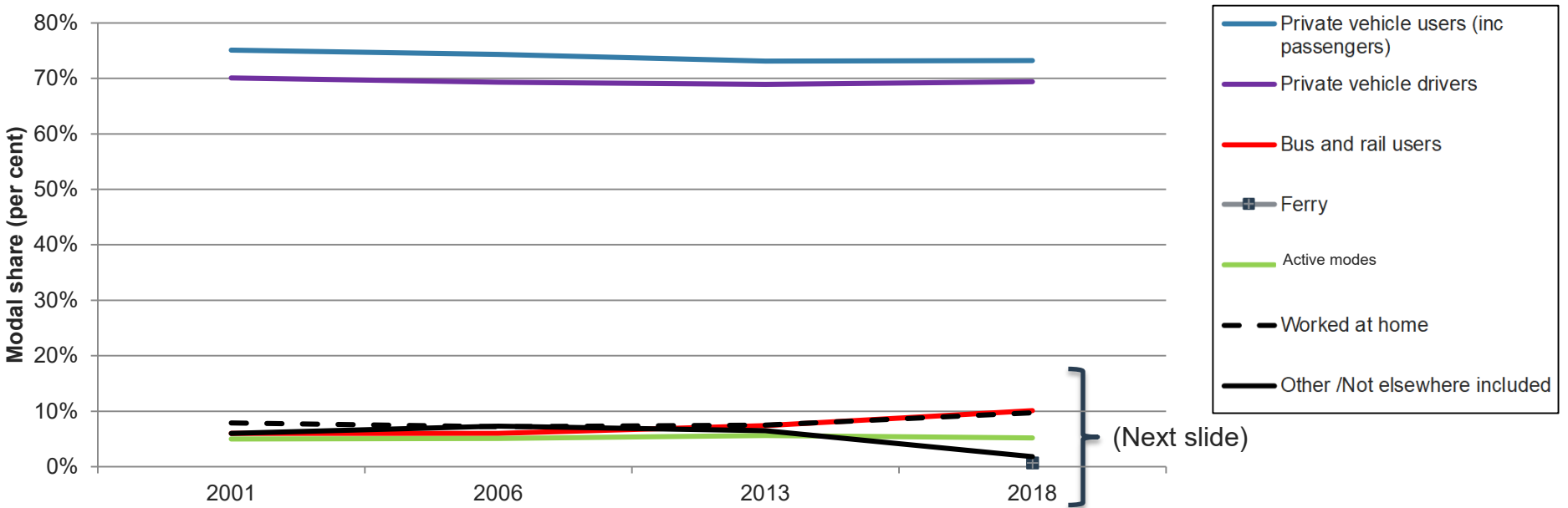
The high level key findings

- Continued **high car use** observed across the region for JTW and JTE
- A **rapid increase in public transport** (PT) uptake, but its share of the total, across the region, remains low
- PT is growing for travel to the City Centre, but areas further away, with limited linkage to central areas, have a **growing car share**
- The **PT market is concentrated in the Isthmus/North Shore** area, likely due to the success of recent PT interventions
- For JTE, it was found that **trip making patterns change as students grow older** and can travel independently when progressing through the various stages of education (with differing mode shares across age groups).

Section 1 – Journey to Work
Regional Mode Share Changes

Regional Mode Share

The mode share for private vehicles has remained consistent over the last 15 years, with small increases for PT and working from home



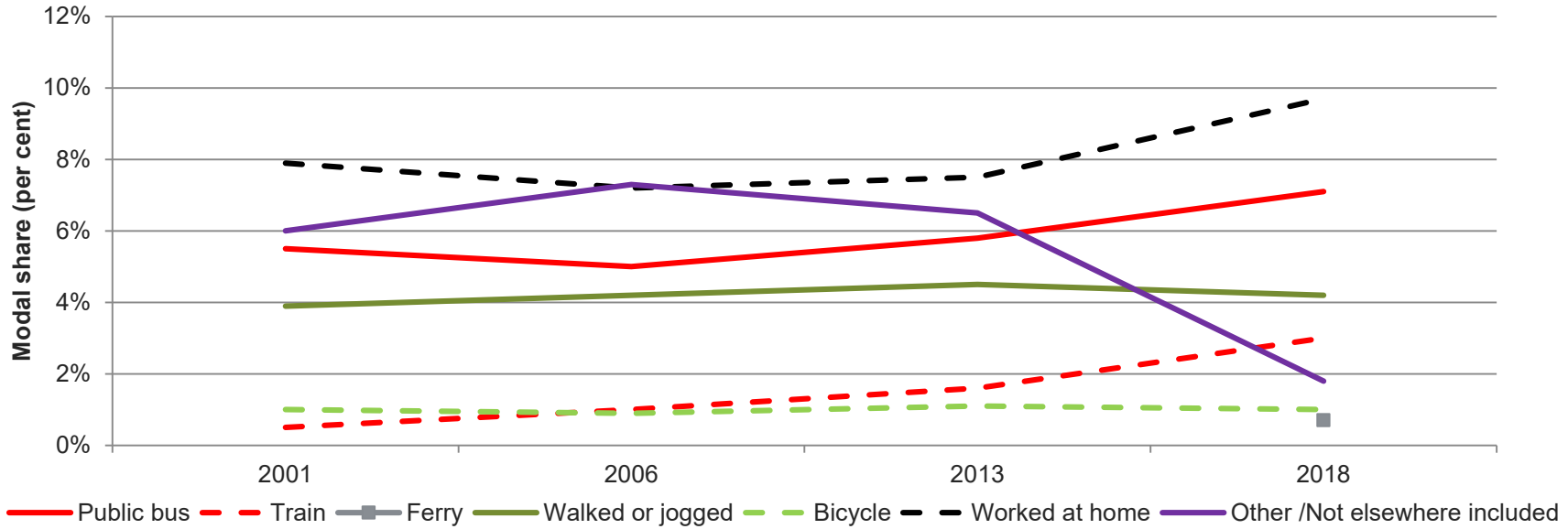
Changes in mode shares for JTW trips 2001-2018

Key Highlights:

- The last 5 years have seen a significant increase in PT use, and working from home, but there has been a decrease in the “Other” category
- There has been some decline in the active mode share as well
- Share of car users has remained broadly constant.

Regional Mode Share – excluding private vehicles

Mode share change over the past 15 years reveals a rise in bus and train patronage, with active modes remaining fairly steady



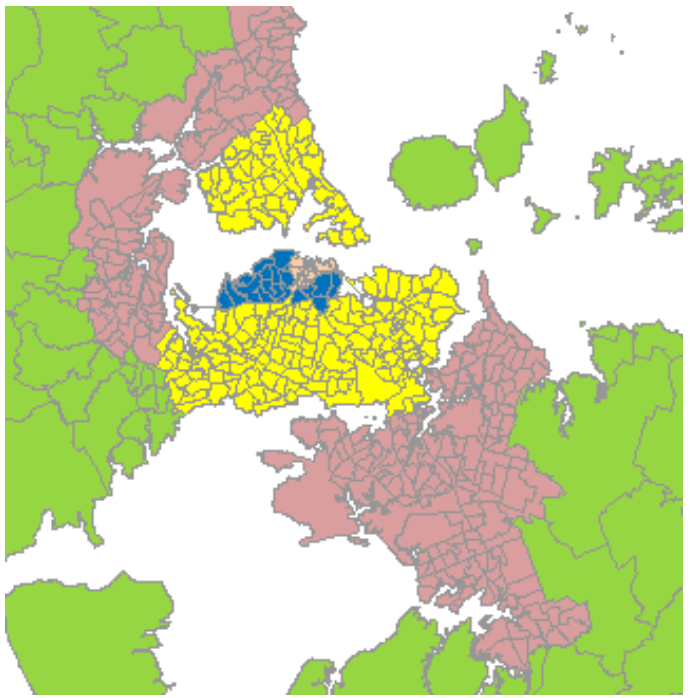
Changes in mode shares for JTW trips 2001-2018 (excluding car trips)

Key Highlights:

- Mode shares for both bus and train have risen appreciably since the 2013 Census, while there appears to be no noticeable change for active modes
- Working from home has seen a sharp rise, while the “Other” category has experienced an abrupt decline – likely due to a combination the changed Census question and confidentiality constraints.

Section 2 – Journey to Work
Sectoral Analysis

Breakdown of the Auckland Sectors



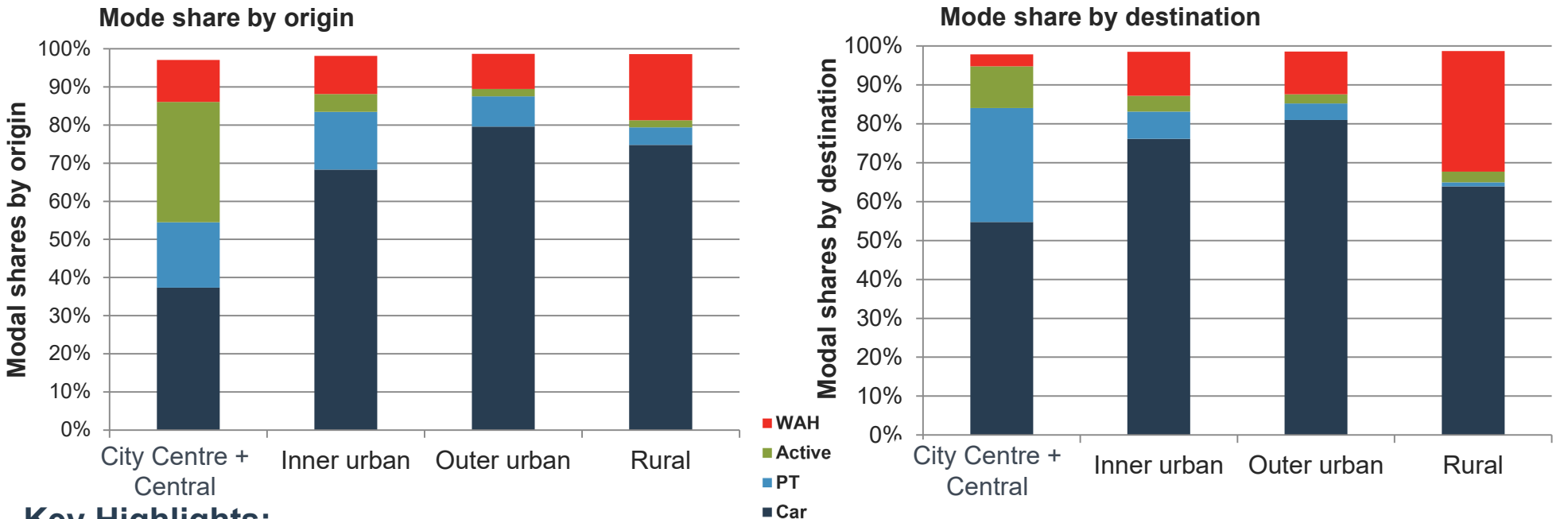
Rural
Outer Urban
Inner Urban
City Centre
Central

There are **four distinct sectors** in Auckland with similar trip patterns and trends:

- City Centre/Central
- Inner Urban
- Outer Urban
- Rural

Commuter Trips Mode Share

Comparing mode share by origin and destination for each of the four sectors shows the City Centre is an outlier

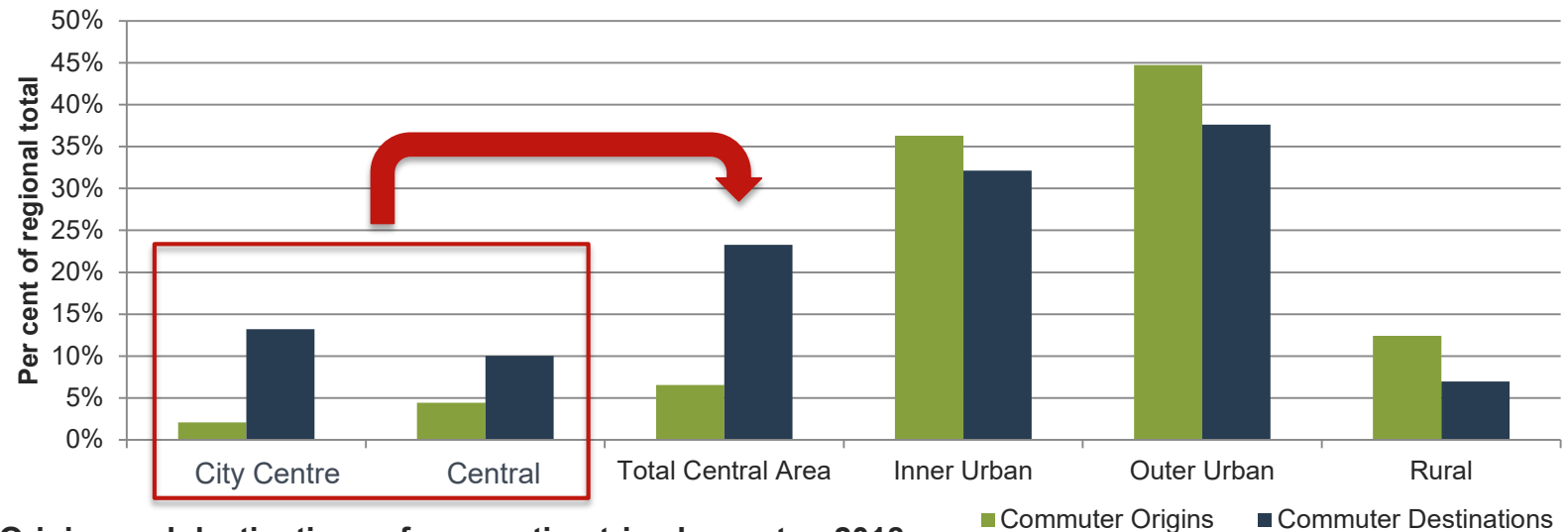


Key Highlights:

- Approximately 52% of workers are resident within the sector they are employed (across all sectors)
- 37% of total workers commute inwards, and 11% commute outwards; this inward commute is the likely cause of pressure on the transport network, particularly in the isthmus
- In terms of sectors, **City Centre + Central** has the highest relative active and PT mode shares
- The car mode share for the **Outer Urban** sector is approximately 80% for both origin and destination (for all sectors)
- From the above graphs, it appears that the **destination** is as important as **origin** when it comes to mode choice.

Commuter Trips

The Inner and Outer Urban Sectors account for the majority of commuter trips



Origins and destinations of commuting trips by sector, 2018

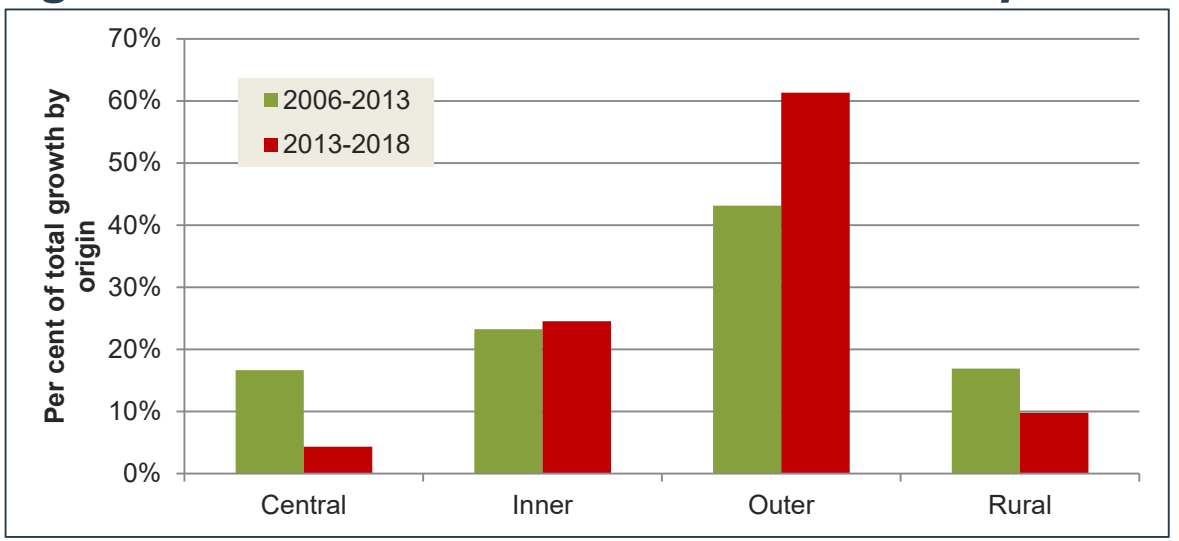
Key Highlights:

- Resident workers in the Central Sector account for only 28% of available jobs, while the outer sectors have **more workers than jobs** (Inner Urban, 113%; and Outer Urban, 119%), with 70% of jobs filled from the Outer Urban sector

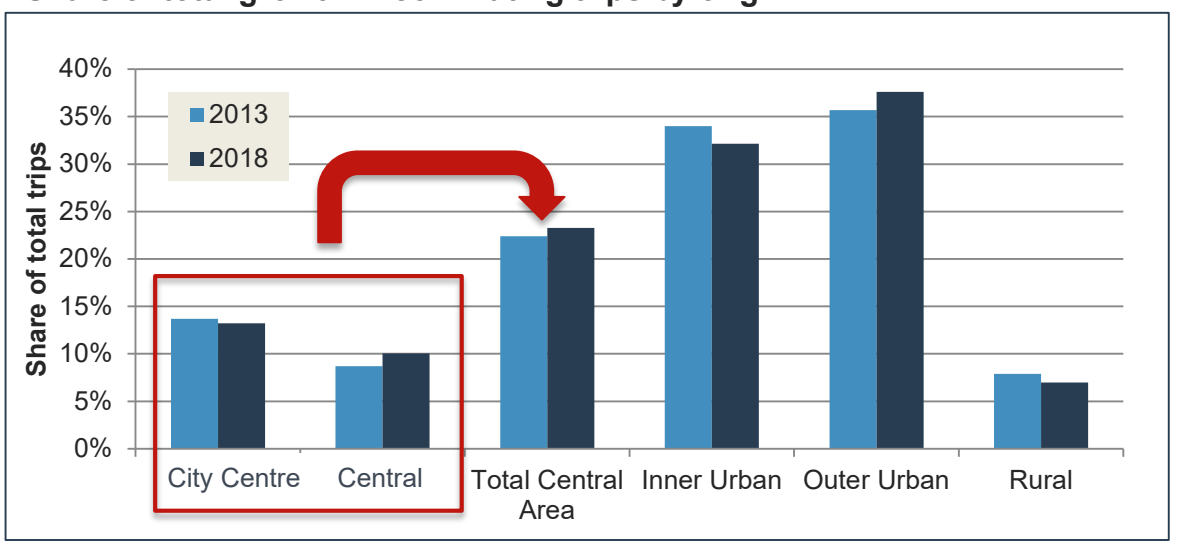
- **Substantial commuting** into the Central Sector, and the **high level of self-containment** for areas further away from it, help set the framework for the JTW patterns and associated mode shares for the region as a whole.

Outer Urban Commuter Trips

Growth in the Outer Urban Sector continues to surpass other sectors, leading to an increase in its share of total trips



Share of total growth in commuting trips by origin



Changes in the commuting flows by destination sector

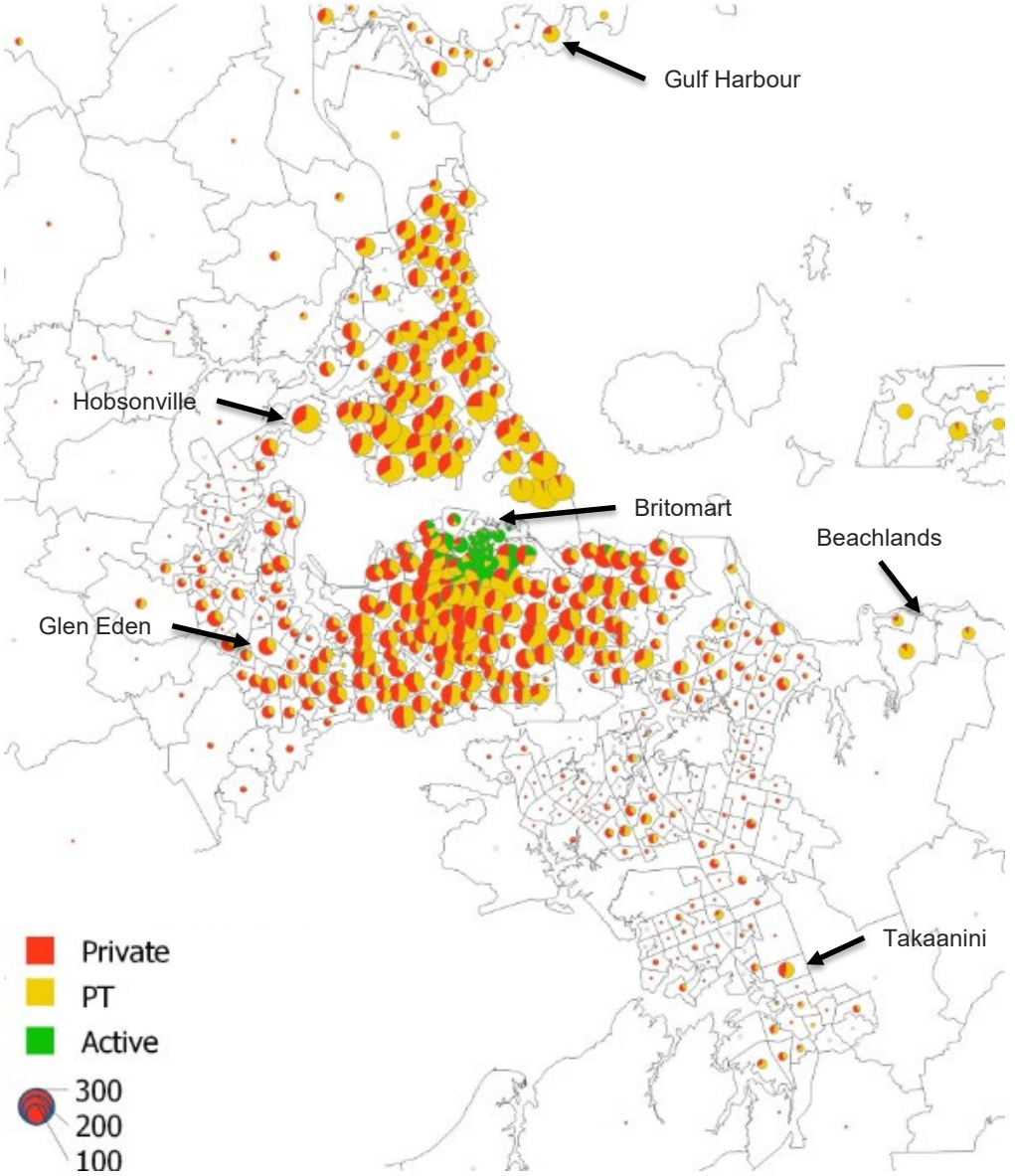
High growth in the Outer Urban sector (61% increase in workers; 51% increase in jobs), combined with the high car mode share, has helped sustain the overall high car share for the region.

Mode Shares Commuting to the Central Sector

PT share is concentrated within the Central and Inner Urban sectors; active modes existent only in the Central sector

Key Highlights:

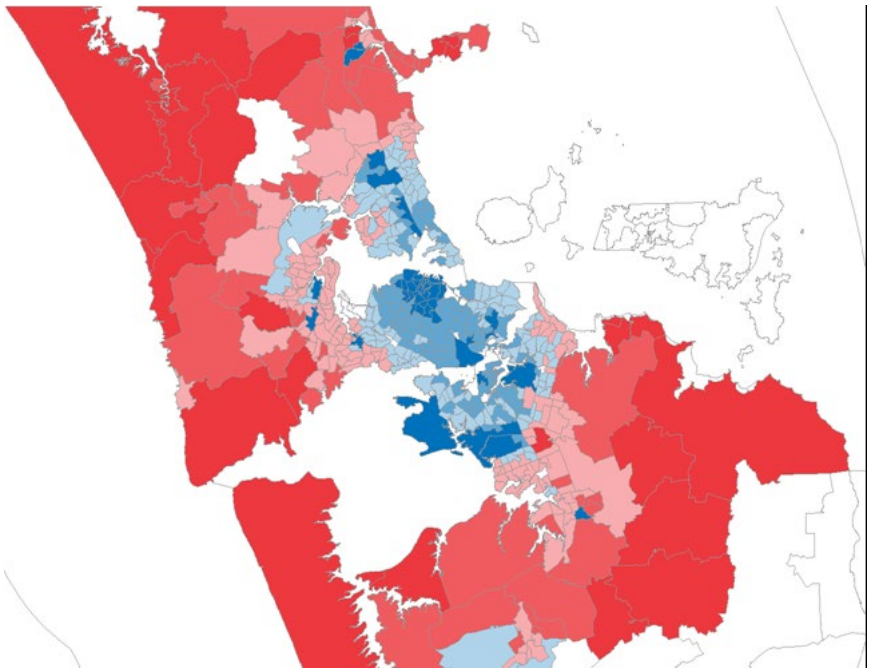
- High PT shares can also be found near major transport hubs (rail, bus and ferry) indicating the importance of facilitating station access
- High PT use is also observed for the ferries in Hobsonville, Gulf Harbour and Beachlands, and the train station in Takaanini
- A small observable share of active modes can be found in the bays east of the City Centre – likely due to the cycle infrastructure available.



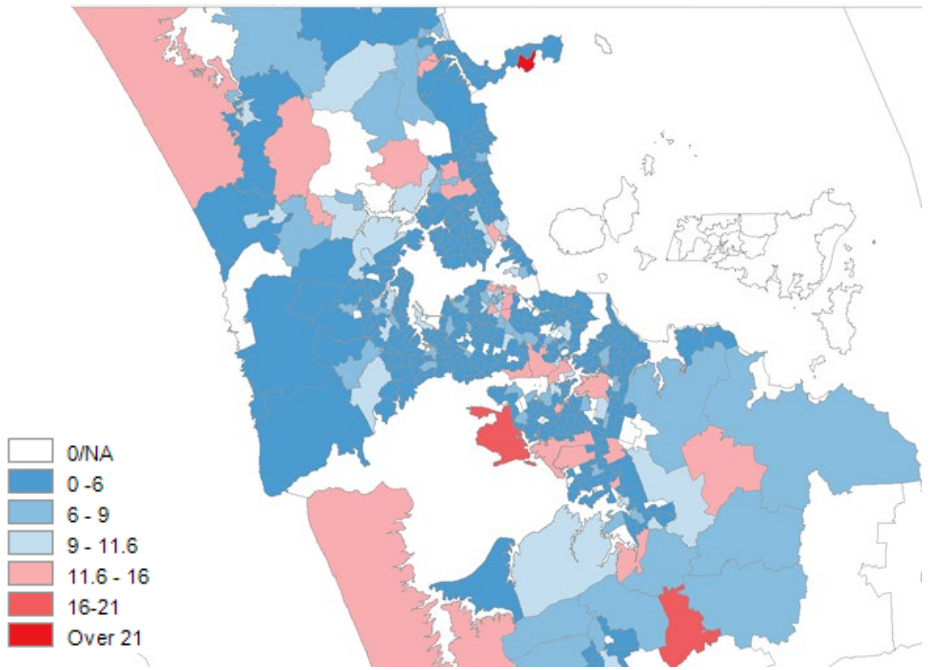
JTW trips to the Central Sector, mode share by origin

Trip Length

Generally, trip distances by origin decrease with reduced distance to the City Centre



Average trip length by origin (kms)



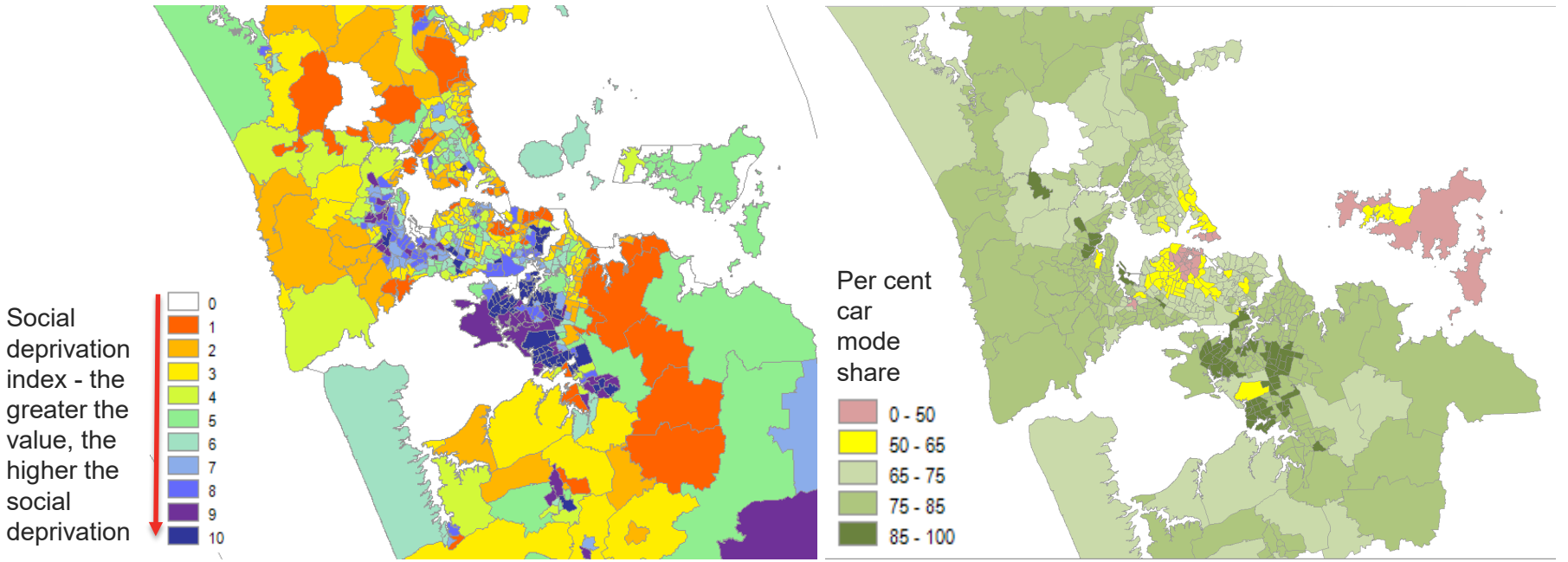
Average trip length by destination (kms)

Key Highlights:

- Typically, the further away the origin from the City Centre, the longer the commute
- By **destination** (map on the right), the major centres shown in red (e.g. Airport) have some of the longest commutes, attracting workers from across the region.

Social Deprivation

Car mode shares appear to be relatively high in areas of high social deprivation



Key Highlights:

- High car mode share could be a reflection of the types of employment for residents in these areas, as well as poor PT accessibility

- However, only a **weak statistical correlation** between car mode share and areas of higher social deprivation could be found through statistical investigation.

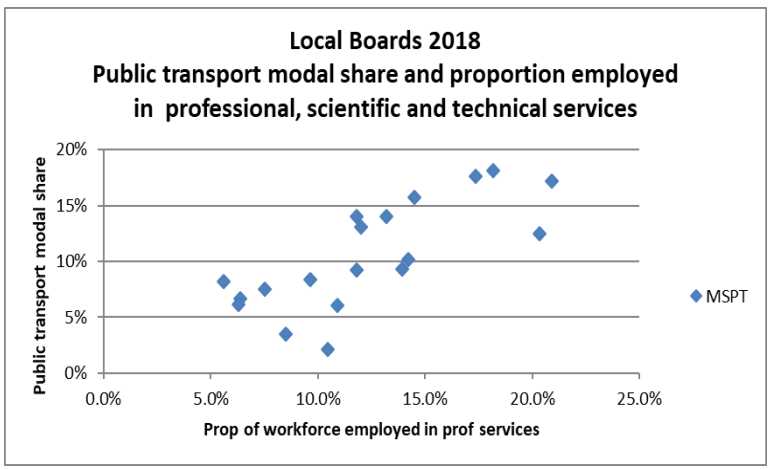
Car Share in the Outer Urban Sector

The high car mode share (approximately 80%) is likely driven by a range of factors

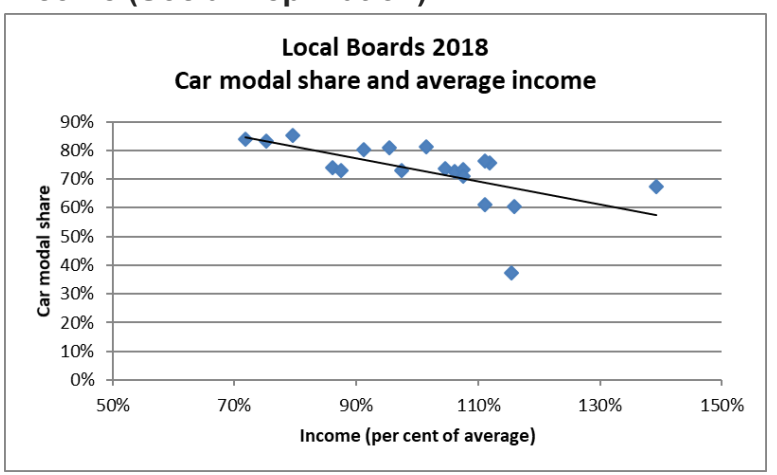
Drivers of high car mode share

- Employed Industry
- Social Deprivation
- Trip Distance
- Travel Choices

Industry



Income (Social Deprivation)



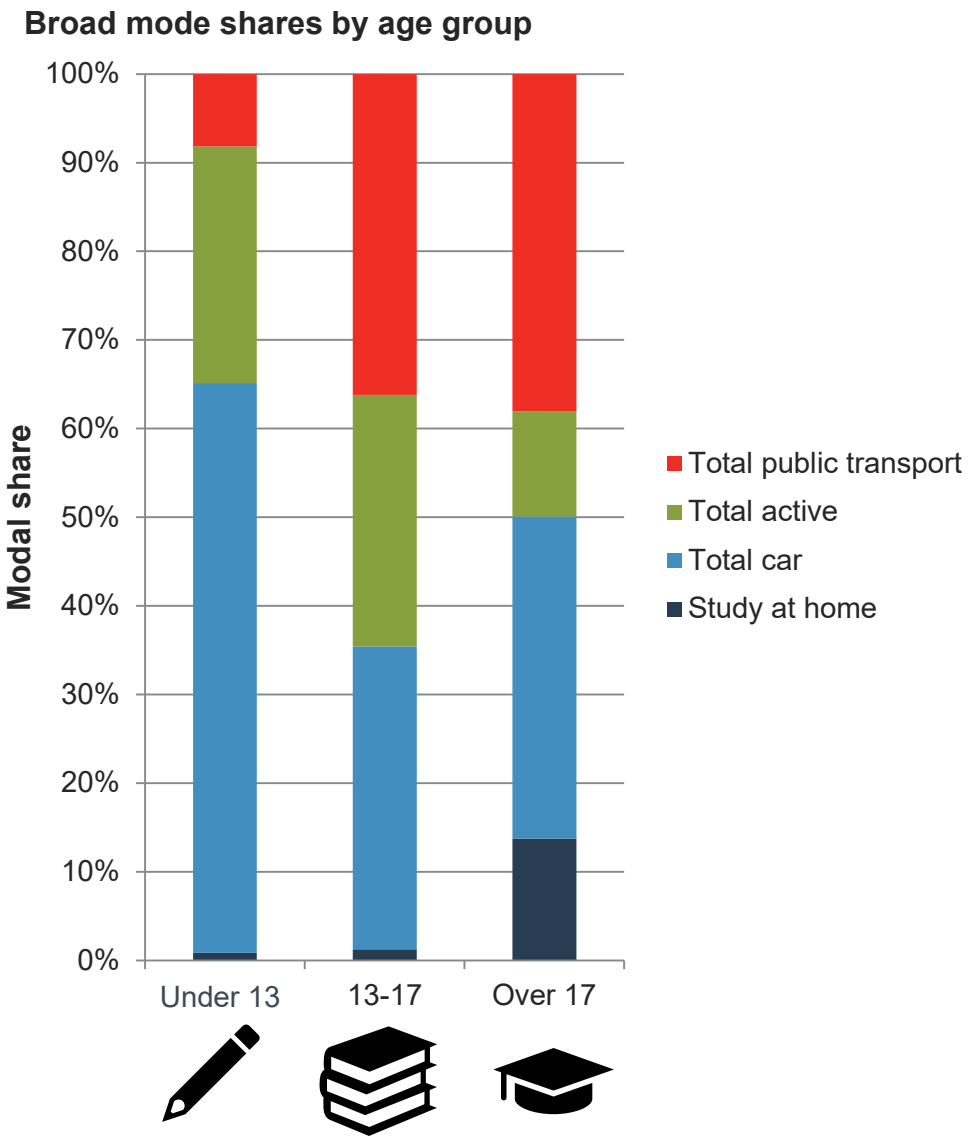
Key Highlights:

- A higher share of one mode could be reflective, in part, of the area's **industry breakdown** – e.g. there appears to be a correlation between PT mode share and the proportion of workforce in professional services
- It could also be due to **social deprivation**, as noted (slide 15)
- Problems relating to **access** (slide 13) to a well-connected PT network may also factor in, which links to the issue of **distance from destination** (slide 14).

Growth in the Outer Urban Sector may have offset any positive mode shift achieved in the City Centre due to heavy car reliance in that area.

Section 3 – Journey to Education

Journey to Education Overview

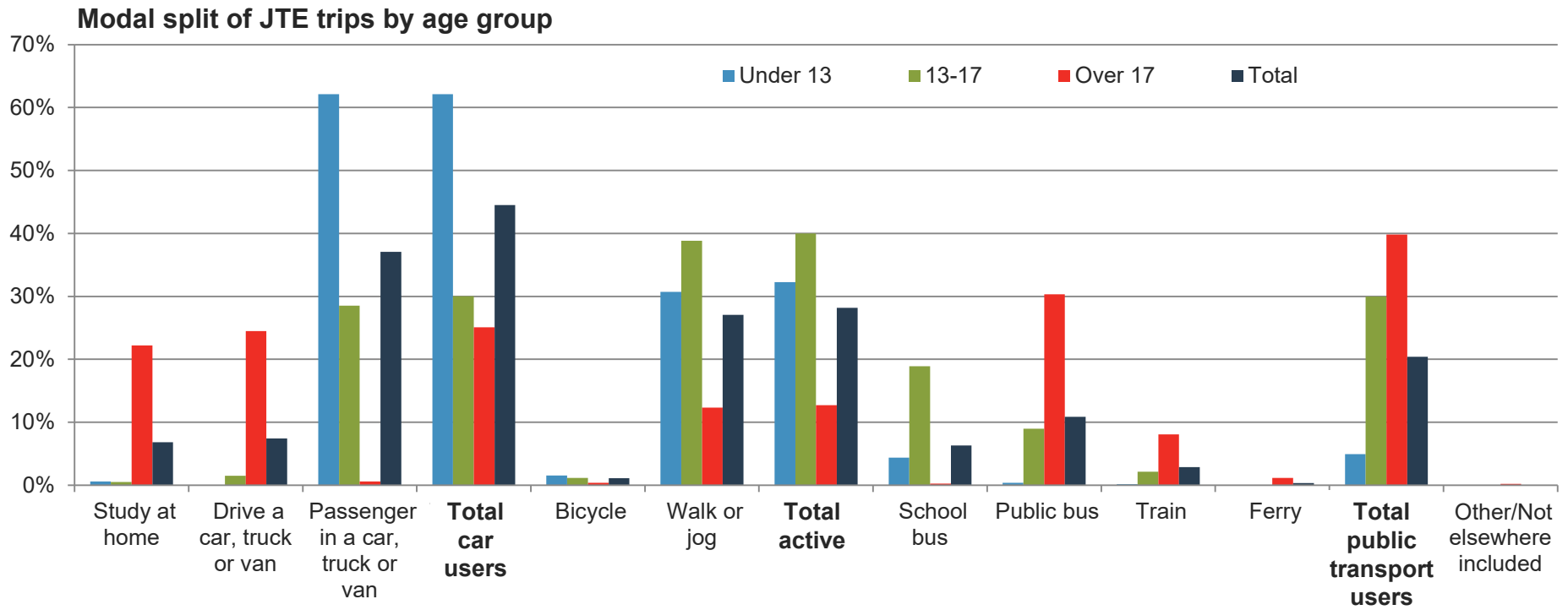


Key Highlights:

- **New question** for 2018 Census
- **Substantial variations** in travel patterns and mode shares between **age groups** and **areas**
- **Car share is highest** for the youngest age group (under 13), then falls for the 13-17 group before increasing slightly for the eldest group (over 17)
- PT and active mode shares are the highest for the 13-17 age group.

Mode Share

There are significant mode share variations by age group



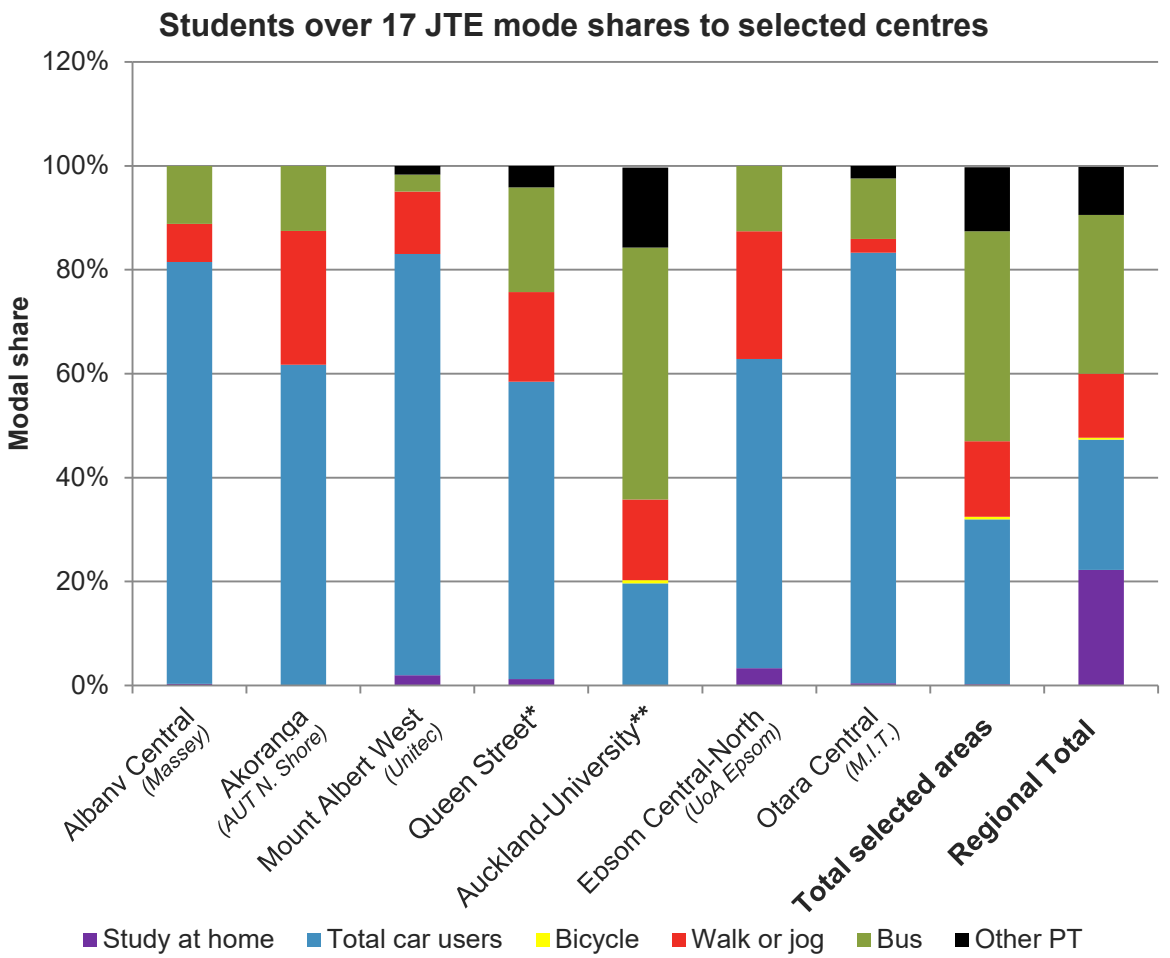
Key highlights:

- Overall, **car is the most common mode** used for JTE trips (49%), followed by PT (24%), and active modes (23%)

- The **variations in mode share** by age group are likely due to the decreasing number (and increasing catchment size) of education providers in the progression from primary through to tertiary education. There is also a different cohort for tertiary education, including many students who move to Auckland for this stage of education.

Mode Share Destination by Area for Over 17s

Mode share by students over 17 shows extensive car use, aside from the Central area where active modes and PT are more prevalent



**Queen Street = Various small tertiary education providers*
***Auckland-University = AUT and University of Auckland*

Key Highlights:

- Due to the **wider catchment** of tertiary establishments, a higher car share is likely the result of greater distances students are required to travel and a potential desire to drive at that age
- PT and active modes are **higher in the Central** areas due to the relatively shorter distances to the tertiary education providers, and provision of mode choice.

Thank you.

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