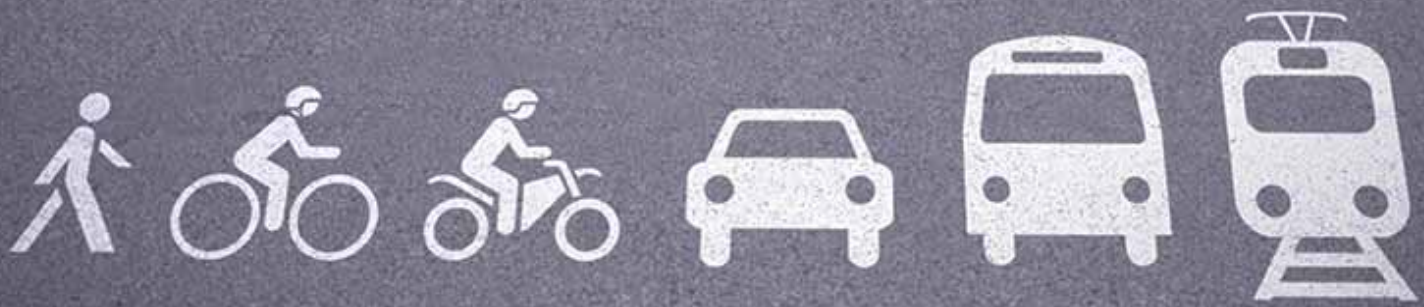
25 YEARS OF NEW ZEALAND TRAVEL:
NEW ZEALAND HOUSEHOLD TRAVEL 1989-2014



Ministry of Transport
TE MANATŪ WAKA

New Zealand Government

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1 Letter of introduction from Martin Matthews

Ministry of **Transport**
TE MANATŪ WAKA

The past 25 years have seen many changes in New Zealand. Technologies have shifted into our daily lives and changed how we connect and communicate and navigate. From the landline phone in the late 1980s to the mobile smartphone today. From the paper map then to the app on the smartphone now. We have seen other changes not so technologically focused, such as a higher proportion of women in the workforce and an increase in average New Zealand life expectancy, from 75 years in 1989 to over 80 by 2012.

In transport, we have seen our road toll fall from 755 deaths in 1989 to 294 deaths in 2014. The number of vehicles increased from around 2.1 million in 1989 to 3.4 million in 2014. Back in 1989/90, we spent about 72 percent of our travelling time in a car; by 2011–2014, we spent about 78 percent.

Yet some things remain the same. We average about an hour a day travelling. Young drivers have the highest risk of crash involvement of all age groups. The people in the car with us tend to be people our own age, our parents or our children.

Surveys like the New Zealand Household Travel Survey offer a valuable insight into an important part of New Zealand life: how, when and why we travel, and how this changes. This in turn informs what sorts of things are needed to support travel demand, what may be needed in the future and how this may change.

This document introduces us to 25 years of New Zealand travel – a selection of what has changed, what hasn't, the current picture, and some of the stories behind what we see. It tries to look beyond the New Zealand average, to a range of people at different stages of their lives. All of these are valuable insights into how New Zealanders go about their lives, and what they might do in the future.

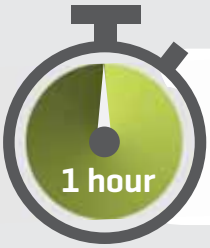
Martin Matthews
Chief Executive
Ministry of Transport

2 Executive summary/overview

Transport and how people travel play an important role in life. Transport links our homes, our families, our work places and our social lives. Transport helps us to get where we need to be, and enables us to get what we need to carry out our daily lives.

How we travel and our travel needs depend on many things. Age, work, stage of life and geography all play their role, but that role can change. Life stages and external influences such as available technologies can bring new choices and shift old behaviours.

You can't measure such changes without a tool. One such tool is the New Zealand Household Travel Survey. In a range of forms, between 1989 and 2014 it has measured the travel of average New Zealanders by surveying 2 days of travel for everyone in randomly selected households.



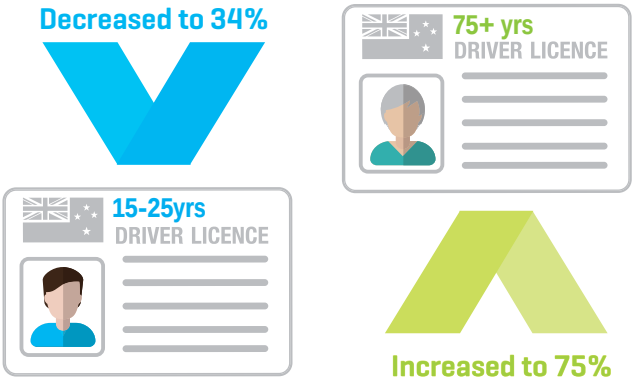
The survey shows that people spend an average of about 1 hour per day travelling – this varies from nearly 40 minutes per day for those under 5 years old, rising to a maximum of an hour and 13 minutes for 45–54 year olds and then tailing off to just over half an hour for those over 75 years old.

Looking at the past 25 years of household travel in New Zealand and related information sources, we can see a range of changes in our travel behaviour. Some examples are:

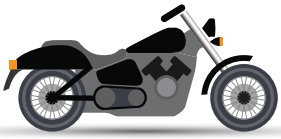
There have been shifts in the proportion of people holding a driver licence:

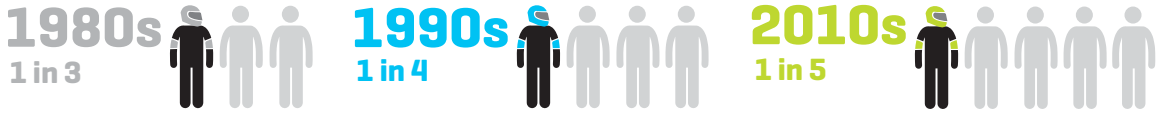
Back in 1989/90, nearly half of all the 15–25 year olds surveyed had a full driver licence, but by the late 2000s this had decreased to around 34 percent.

The proportion of 75+ year olds surveyed with a full licence rose from 45 percent in the late 1980s to nearly 75 percent in the early 2010s.



In the late 1980s, nearly one in three men had a motorcycle licence. By the late 1990s this had declined to just over one in four men with a motorcycle licence and by the early 2010s around one in five men had a motorcycle licence.

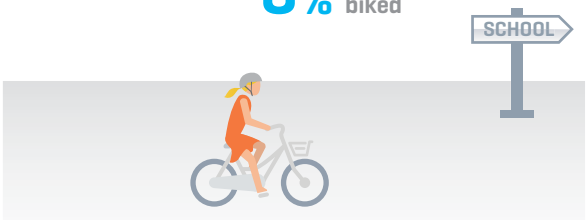




- Travel to school has changed over the past 25 years, with a decline in the proportion of children cycling to school:

Nearly **20%** of secondary school children biked to school in 1989/90, but by **2005-2007** less than **5%** biked

1989/90



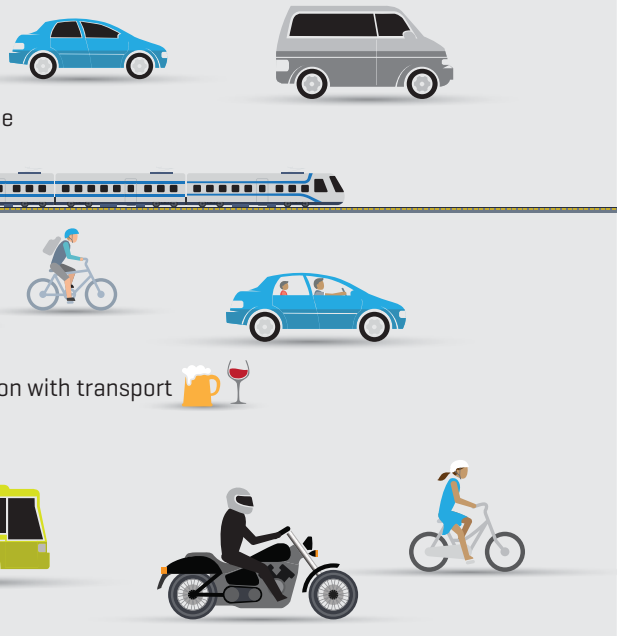
2005-2007

- Women's travel patterns have changed as their need to travel to work has changed.

Back in 1989/90, 39 percent of the women surveyed aged between 20 and 54 years old were in full-time employment. By 2011–2014, this had risen to 47 percent of the women surveyed.

In this document we look at travel by people in New Zealand over the past 25 years, between 1989 and 2014. We explain why we have measured what we do and see how it fits into the wider context of transport as a means to an end. We look at overall trends and then start breaking it down into sections, including:

- travel by mode, for example:
  - how people drive
  - how driving varies between young and old and over time
- some aspects of a typical day, such as:
  - the daily commute
  - travel to school
  - travel outside of commuting periods
  - who people travel with
- a brief look at the activity of drinking alcohol and its interaction with transport
- some specific travel modes, for example:
  - cycling
  - motorcycling
  - public transport
- household vehicles and where they are parked.



We end with a look at the future of the survey and where it will head from here.

Some changes will be made in the survey's methods in the future. The next generation of the survey will no longer rely on personal interviews about 2 days' travel, but will use an online survey with the option of a GPS unit to record 7 days' travel.

We have seen changes in our transport wants and needs over the past 25 years and expect to see more over the next 25 years. Tools such as the New Zealand Household Travel Survey help us understand what our changing needs are and how these can be supported.

3 Introduction

Transport is an enabler, getting us where we want to go, and delivering goods and services around the country and around the world. As such, we want a system which works for us, maximising economic and social benefits for New Zealand, while minimising harm[1]. A survey of personal travel contributes to our understanding of transport as an enabler by giving us a measure of how, when, where and why New Zealand people travel.

This document aims to give a picture of the past 25 years of New Zealand travel. Using the New Zealand Household Travel Survey amongst various data sources, we can look at some of the things that have changed over the past 25 years, some things that have stayed the same, and some things as they currently stand. We are not aiming to give an exhaustive overview, but instead have picked out areas of interest, variety and change, to give a flavour of what may affect people in their day to day lives.

3.1 Why do this?

But why do we want to know this? How does it help our understanding of the transport system? How does transport fit in with the rest of our lives? And how does it cope with changing lives?

As mentioned earlier, a goal of the transport system is to maximise economic and social benefits for New Zealand, while minimising harm. We can take a look at how transport impacts on each of these areas and how the New Zealand Household Travel Survey contributes to our understanding of each.

3.1.1 Social benefits

Transport links our homes, our families, our work places and our social lives. While transport has traditionally provided our main access to the wider world, mobile technologies and the internet mean that physical travel is no longer our only method of interacting with our community. But has this meant we are substituting online activity for travel, or are we doing more as we travel out and about? So far, there has been no clear trend for people to spend less time travelling. While travel time has varied between 59 and 64 minutes per person per day over the past 25 years (see section 4.1), people are still travelling on average about 1 hour per day. We can see the trends with how much people are travelling (see section 4) and why people are travelling (see section 6), and future surveys will help us understand what the impacts of trends such as changes in the number of young people gaining driver licences will have on transport patterns.

The Household Travel Survey also reflects how societal and demographic changes can influence who travels, and when. For example, over the past 25 years, the proportion of women in the workforce has increased (see section 6.2) and changes in women's travel patterns reflects this.

We also know different people have different access needs and desires, and hence different transport needs and desires. Why and where you travel, and who you travel with, will differ depending on what life stage you are in, and where you live.

Where you live will also influence what transport options you have to choose from. For example, public transport is far less of a transport option outside the main urban areas – you can't use a service if it is not available. Another accessibility issue is access to a household vehicle. Over the past 25 years the Household Travel Survey shows a decline in the percentage of households with no vehicles, from 13 percent in 1989/90 to between 5 and 7 percent in the 2000s and early 2010s (see section 12.1).

1 Ministry of Transport Statement of Intent 2015–2019 www.transport.govt.nz/assets/Uploads/About/Documents/statement-of-intent-2015-2019.pdf (accessed 9 Aug 2015).

3.1.2 Economic benefits

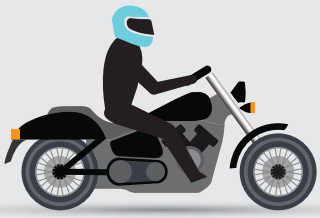
Time and cost of transport has an impact on the wider economy, with a New Zealand Transport Agency report estimating that Auckland's congestion costs could range from $0.25 to $1.25 billion a year (Wallis and Lupton, 2013). The full interactions of transport and the economy inside New Zealand are beyond the scope of this work, but we can still look at how they may interact at a more personal level.

Whether a person works or not, their location of work and when they work affects their travel and transport choices. Those who work away from home need to make time to travel to work, as well as being able to cover the cost of transport and associated charges – whether it is the cost of vehicle maintenance, petrol and parking, or the cost of public transport. Many of us (depending on where we live) have seen the effects of peak time congestion, as many people need to get to the same place at the same time (see section 6 for peak travel times and commuting to work).

While it does not show through in this Household Travel Survey, a survey covering the next 25 years is likely to show changes in trends in travel and congestion, as technology enables more remote working. The Ministry of Transport work on future demand further explores different scenarios and the impact different futures may have on our transport choices.

3.1.3 Minimising harm

Minimisation of harm can come in a variety of forms, from direct road safety aspects, such as the risk of crashing when travelling, to less tangible ones such as the contributions walking and cycling make to health and transport's impact on the environment.

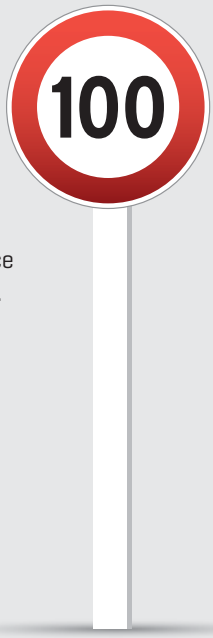


Safety

Every death on our roads is a tragedy and road crashes place a high cost on families, communities and the economy. The Ministry of Transport estimates the total social cost of motor vehicle injury crashes in 2013 was approximately $3.14 billion.[2] Over the past 25 years, we have seen major improvements in road safety. In 1989, the road toll was 755 deaths. In 2014, it had more than halved to 294 deaths. This is in spite of the fact we have more people on our roads, and people are on average driving slightly further than they did 25 years ago (see Section 4.2).

If we look at particular travel modes, we have also seen changes over the past 25 years. Motorcycling remains the highest risk in the land transport modes. However, it is no longer an activity of the young, but has become an activity of an older generation. In 1989/90, 15–29 year olds motorcycled furthest of all age groups, but in 2011–2014, those 45 years and older motorcycled furthest (see Section 9.1). This is reflected in the age and gender distribution in the number of motorcyclist deaths and injuries, which follows the same pattern, with more older men dying or seriously injured in motorcycle crashes.

Young people aged 25 years and younger are also less likely to be a driver involved in a fatal crash than 25 years ago. Legislative changes, such as the introduction of a zero blood alcohol level for drivers under 20, increasing the driving age to 16 and strengthening driver licence testing have targeted this age group.



2 The Social Cost of Road Crashes and Injuries 2014 www.transport.govt.nz/research/roadcrashstatistics/thesocialcostofroadcrashesandinjuries/

Health

The World Health Organisation recommends that 18-64 year olds do 150 minutes of exercise per week, as this can reduce rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon and breast cancer, and depression, amongst other things[3]. Transport enables us to get to places where we can do our favourite sports and recreational activities, and using active modes such as walking and cycling can contribute towards that exercise; all the easier when it is part of our daily routine. But we know that for our children, these active modes have become less a part of their daily transport routine. One specific example is cycling to school, which has declined markedly over the past 25 years, with nearly 20 percent of secondary school children biking to school in 1989/90, but fewer than 5 percent by 2005-2007 (see Section 6.3).

According to the Ministry of Health[4], one in three New Zealand children are obese or overweight, and more than a third are inactive. Encouraging active modes of travel for every day transport, such as walking or cycling to school, may result in better health outcomes. Perceptions of safety can influence transport choices, with cycling in particular benefitting from 'safety in numbers'. The Government's investment in cycling infrastructure should result in more people choosing cycling as a transport option.

SMART TRANSPORT CHOICES HELP REDUCE OUR CARBON FOOTPRINT

Environment

Our transport choices have varying degrees of impact on the environment. Around 17 percent of New Zealand's carbon dioxide equivalent emissions come from domestic transport. Active modes such as walking and cycling, as well as having health benefits for us individually, can also reduce our carbon impact on the world around us. We can also share our rides, with public transport being the most communal (see Section 10), through to car pooling and car sharing. New social technologies are making car pooling and car sharing more accessible.

As it is currently, the driver is the sole vehicle occupant in two-thirds of trip legs (67 percent) in cars, vans and utes[5].

Another area where transport can potentially have an impact on the environment is through the introduction of electric vehicles. But before we can think of introducing the plug in versions, it helps to know if people park their vehicles where they could potentially be charged by plugging in. Overall, currently about 92 percent of vehicles are parked on the resident's property overnight (see section 12.3), where they may be easier to recharge than on the street.

The Ministry of Transport is investigating the potential role of Government in encouraging the uptake of electric vehicles. You can expect to hear more about the actions the Government will be taking to encourage electric vehicle uptake later in 2015.

These are just some of the areas reflected in the course of this work.

3.2 Overview of the rest of this document

Over the course of this document, we will examine travel by people in New Zealand over the past 25 years, between 1989 and 2014. We will look at overall trends and then start digging more deeply into particular aspects of travel. Starting with travel by mode, we will see how people drive and how driving varies between young and old and over time. We will look at a typical day and particular aspects such as the daily commute and travel to school. We will examine who travels with who, outside of the commute, and take a brief look at the activity of drinking alcohol and its interaction with transport. We will then look at different travel modes – cycling, motorcycling and public transport. Household vehicles and where they are parked will also feature, before we consider the future of the survey and where it will head from here.

3 Global recommendations on physical activity for health www.who.int/dietphysicalactivity/factsheet_adults/en/ [accessed 10 Aug 2015].
4 www.health.govt.nz/our-work/preventative-health-wellness/healthy-families-nz [accessed 16 Sept 2015]
5 Driver fact sheet 2015 www.transport.govt.nz/assets/Uploads/Research/Documents/Drivers-2015.pdf [accessed 10 Aug 2015].

This is not intended as a full overview, but a look at the day-to-day aspect of travel, with a mix of things that have changed over the past 25 years, things that have stayed the same and how things currently are.

For those who wish to delve deeper, the data behind the figures included here is available in spreadsheet form online. These spreadsheets also include information on confidence intervals and the statistical significance of many of the findings here.

3.3 Some help on your way through this document

To help with understanding, certain transport-related terms are defined in boxes in the text, and links to a **Glossary** are highlighted.

Personas

As well as the usual graphs and statistics, we have individual stories highlighted (in this style), to help you understand more about what the statistics may mean or look like at a personal level. Please note these are not based on individuals' data, but are an aggregate obtained though data synthesis and narrative creation. Any resemblance to individuals is purely coincidental.

More information on the personas, the data behind them and assumptions made is available at **www.transport.govt.nz/25years**

3.4 Four people from different walks of life

Li[6] is an 18–22 year old female student. She spends about 8 hours a week travelling. Over an hour each week of that is travel to university. Less than 40 percent of her travel time is spent driving. Seventy percent of the surveyed women students like Li had a personal income of $15,000 or less per year.

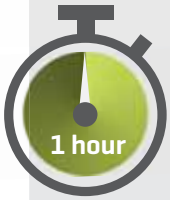
PETER[7] is a 30–64 year old man, living with his partner, with no children. He spends about 9 hours a week travelling. An hour and a quarter of this is getting to work and a further hour and 12 minutes is travel for work. Over three-quarters of his travel time is spent driving. More than a quarter of the men like Peter who were surveyed had a personal income of over $70,000 per year.

NICOLE[8] is a 20–44 year old single mother, living alone with children under 13 years old. She spends just under 6 hours a week travelling. More than an hour and a quarter of that is shopping and personal business, and an additional hour is accompanying or transporting someone else. About 70 percent of her travel time is spent driving. Just over half of the women like Nicole who were surveyed had a personal income of $30,000 or less per year.

MAURICE[9] is a 75+ year old man, living with his spouse. He spends about 4 hours and 20 minutes a week travelling. Nearly an hour and 20 minutes of that is for shopping and personal business. Two-thirds of his travel time is spent driving. Nearly two-thirds of the men like Maurice who were surveyed had a personal income of $30,000 or less per year.

6 Li: n=314, population=64,000 (~1.5 percent of the population).
7 Peter: n=1,533, population=291,000 (~6 percent of the population).
8 Nicole: n=204, population=39,000 (<1 percent of the population).
9 Maurice: n=461, population=68,000 (1.5 percent of the population).

4 How much do we travel?

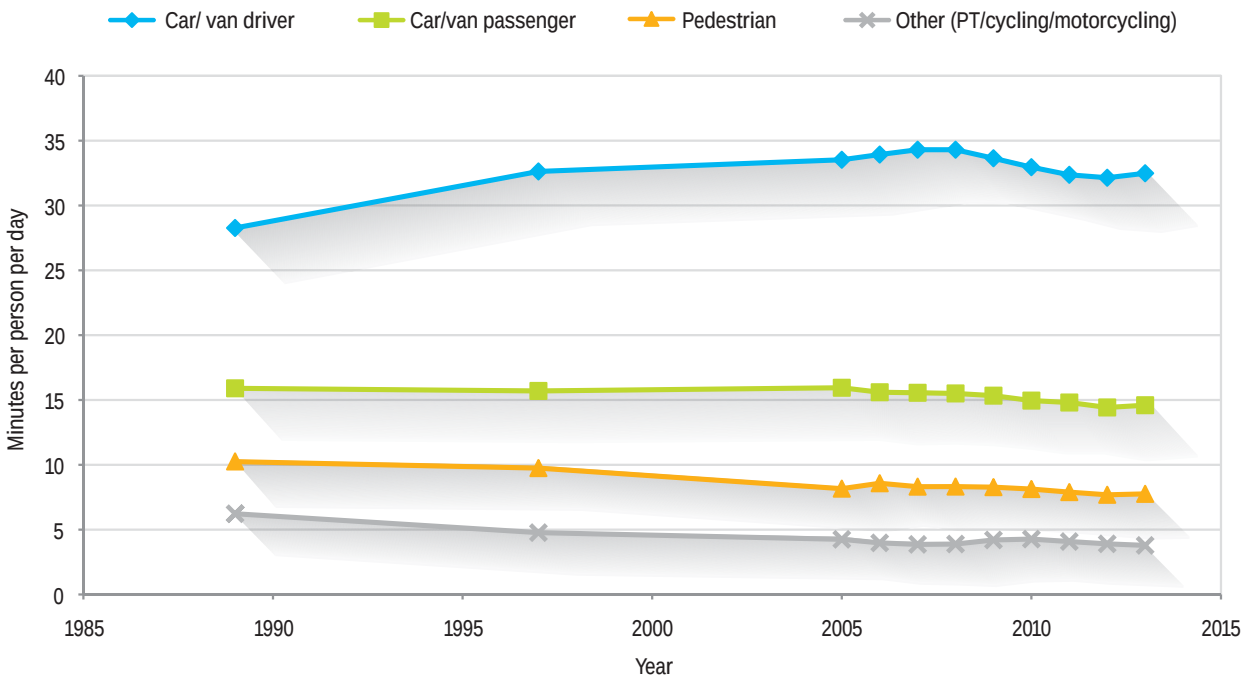


4.1 How long do people spend travelling?

On average, people spend about an hour a day travelling. This has varied from 62 minutes a day in the late 1980s, to 64 minutes per day in the late 1990s, to between 64 and 59 minutes per person per day between 2003 and 2014.

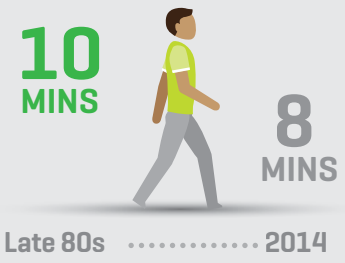
The different travel modes have varied somewhat more over time (Figure 1). In the late 1980s, people spent about 28 minutes a day driving a car or van, and this increased to 33 minutes a day by the late 1990s. It hit a peak of 34 minutes per person per day in the early 2000s and declined slightly to 32 minutes per person per day by 2011–2014. Car/van passenger travel has stayed more constant, at around 16 minutes per person per day in the 1980s and 1990s, and slowly declining to 15 minutes per person per day by 2011–2014. Over the same period, time spent walking has decreased from an average of 10 minutes per person per day to 8 minutes per person per day.

Figure 1: Time spent travelling per person (aged 5+ years) per day



Note: After 2004 data points are based on the average of 3 years of data per point.

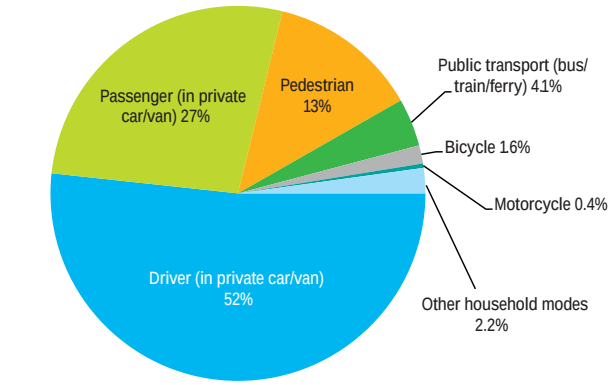
Time spent driving per person per day over time ..... **Time spent walking over the same time**



Mode share – what is it?

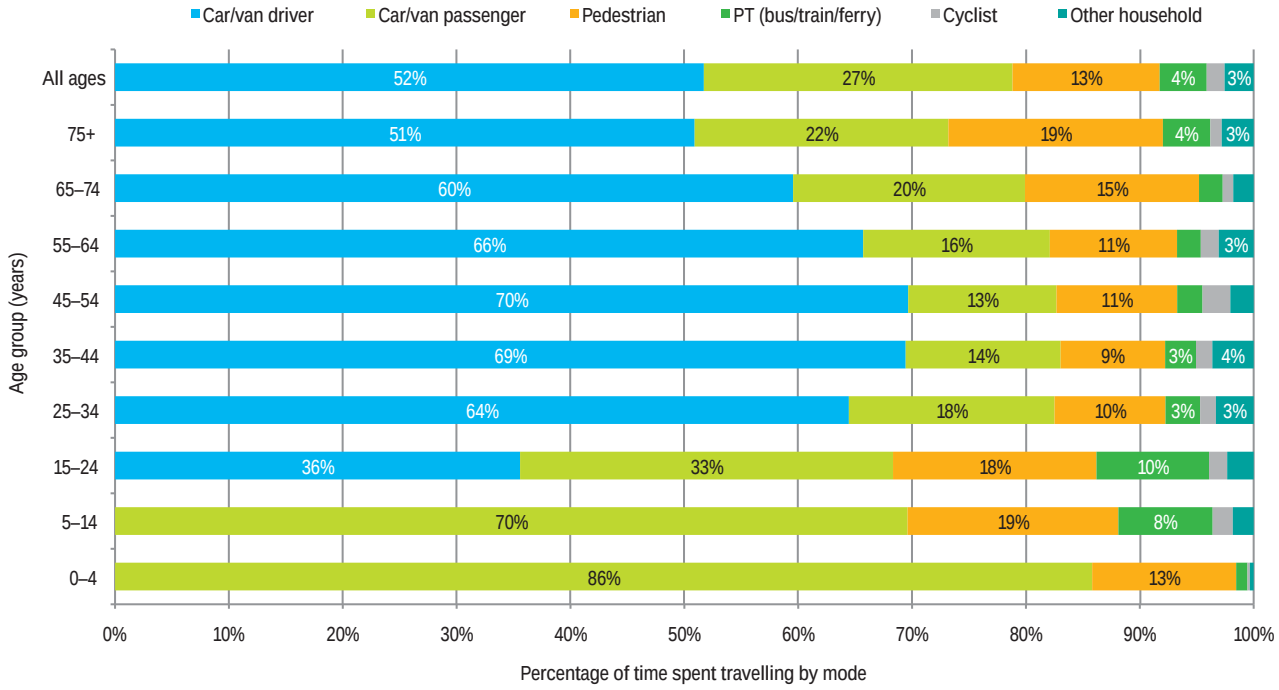
Mode share is the percentage of travel undertaken as a driver, as a passenger, walking or cycling, or travelling by other means. More information about each travel mode is available in the **Glossary**.

Figure 2: Mode share of travel time (2011–2014)



More than half of people's time spent travelling is as a driver in a private car/van (52 percent for 2011–2014). Over a quarter is as a car/van passenger (27 percent), followed by walking (13 percent). Public transport is just 4 percent of total time spent travelling, cycling nearly 2 percent and motorcycling less than half a percent of total travel time (Figure 2).

Figure 3: Mode share (percentage of total time spent travelling by each mode of travel) (2011– 2014)



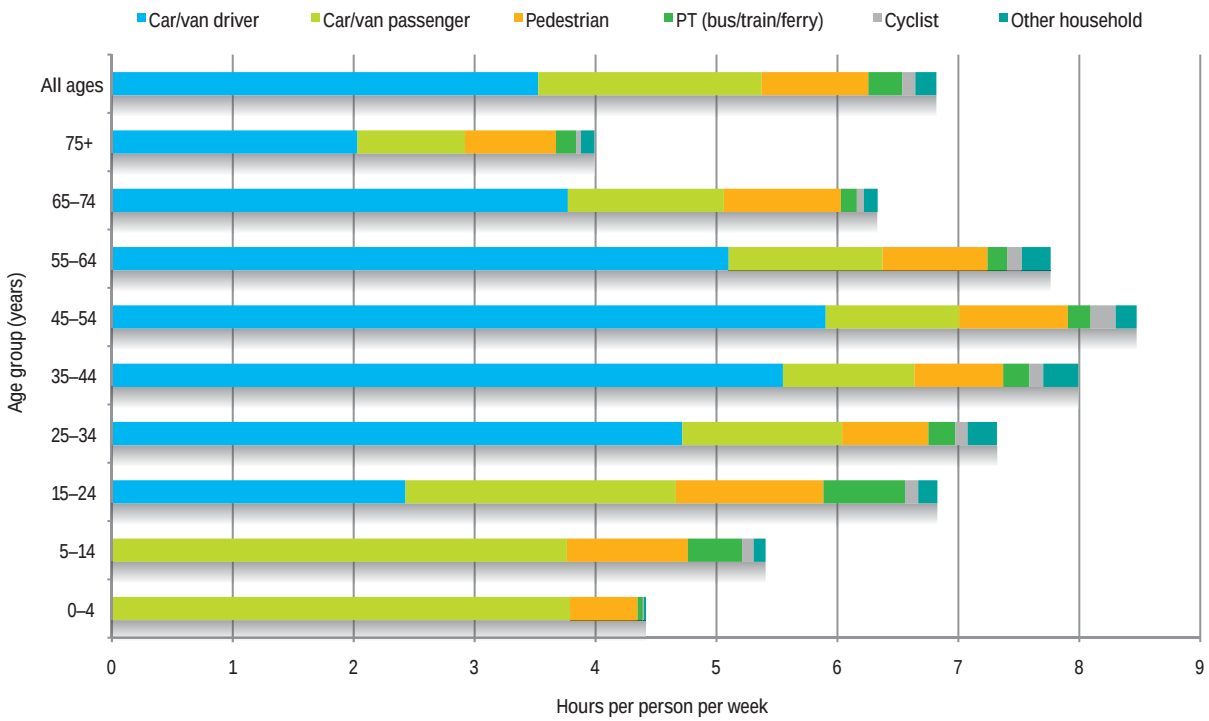
Mode share varies by the age of the person travelling (Figure 3). For instance, before age 16, driving is not a legal option. Children under 5 years old spend most of their travel time as car/van passengers (86 percent), followed by walking (13 percent). Those aged 5 to 14 years are also mainly car/van passengers (70 percent), with nearly a fifth of their time spent walking (19 percent). Public transport starts playing a more important role when people are 5–14, making up 8 percent of their time spent travelling.

For 15–24 year olds, driving a private vehicle becomes a larger part of their travel (36 percent of time spent travelling), as they are starting to get a driver licence. About a third of their travel time is still as a car/van passenger (33 percent) and public transport makes up 10 percent.

Between ages 25 and 64, driver, passenger and pedestrian mode share stays about the same (65–70 percent driving, 13–18 percent as a passenger, 9–11 percent walking).

After age 65, driving declines to around 50 percent of mode share and walking and passenger mode share time increases.

Figure 4: Hours spent travelling per person per week (2011–2014)

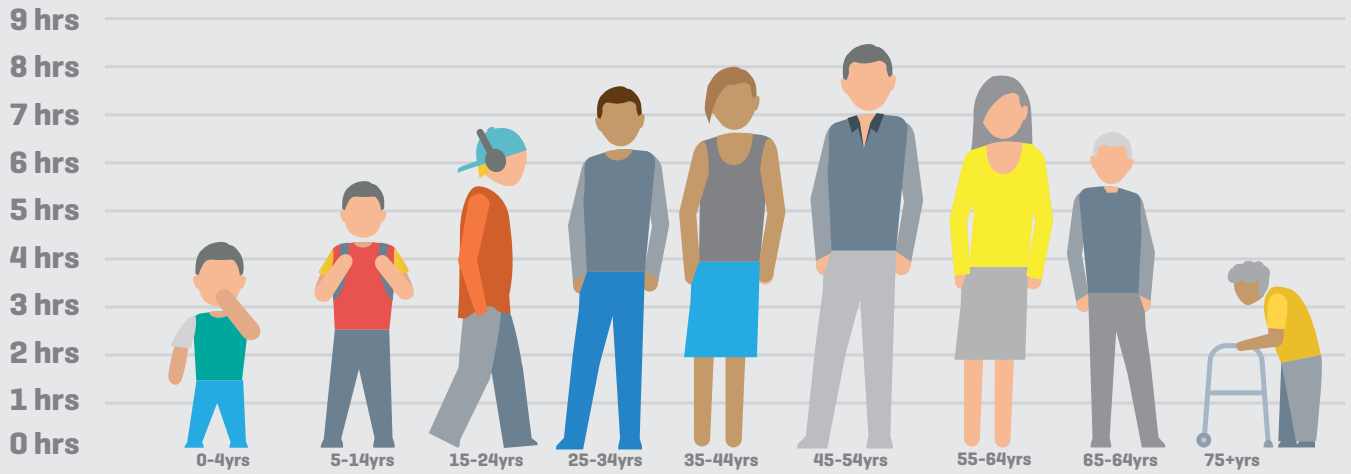


The total time spent travelling per person also varies with age. Overall, people travel roughly an hour per day, but once you start breaking it down by age, people spend different amounts of time travelling – people travel less when much older and much younger (Figure 4).

Children (0–4 and 5–14 year olds) spend the longest amount of time as car/van passengers – just under 4 hours per person per week. Those aged 5–14 years do a bit more travel than younger children, and spend longer walking and using public transport.

Those who spend most time travelling are 45–54 year olds (nearly 8.5 hours per person per week). They also spend the most time driving (nearly 6 hours per person per week). Between ages 25 and 74, people generally spend similar amounts of time as passengers, walking, and using public transport and other modes (ranging from 2 hours and 27 minutes for 35–44 year olds to 2 hours and 40 minutes for 55–64 year olds). For people in that broad age group of 25–74 years, it is the amount of driving that most affects the total time spent travelling per week.

Hours spent travelling per person per week (2011–2014)



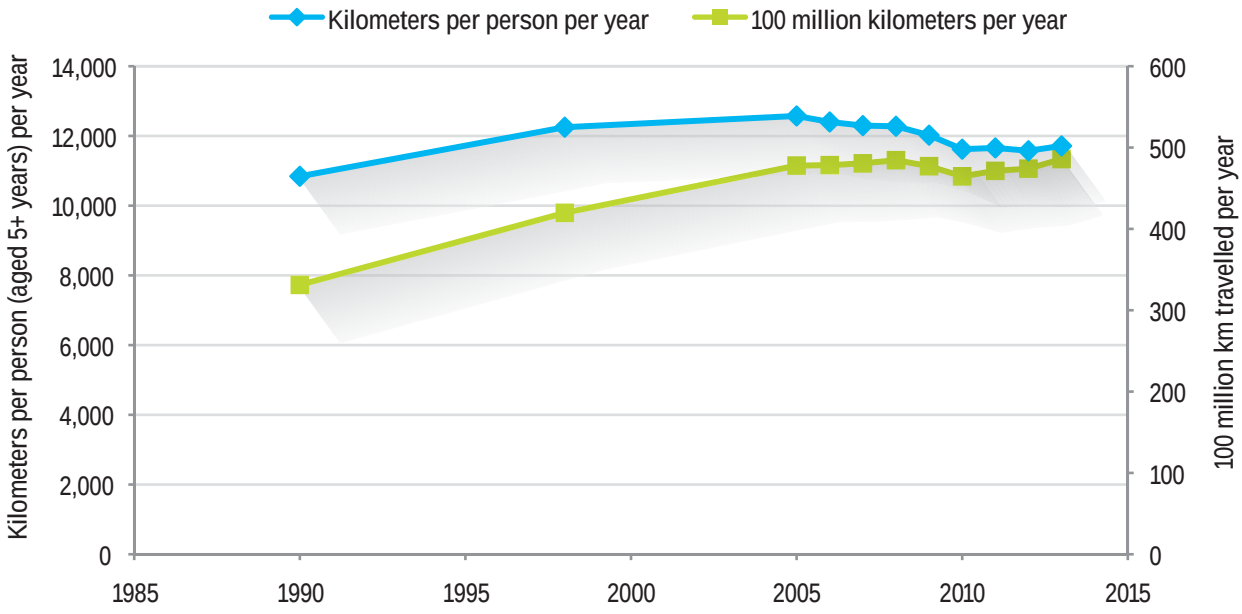
4.2 How far do people travel on roads?

The distance[10] people travel in a year has increased about 16 percent since the late 1980s, to peak in the early 2000s. Since then it has dropped back about 6 percent. Because the New Zealand population has grown, the total distance travelled is now about 45 percent higher than it was 25 years ago (Figure 5).

In the late 1980s, the total road-based distance travelled by those 5 years and over was 33 billion (thousand million) km per year (about 10,800km per person per year).

This had increased to 42 billion km per year by the late 1990s (about 12,300km per person per year). Between 2003 and 2014, it varied between 46 billion and 48 billion km per year (11,500–12,500km per person per year), ending at around 48 billion km per year 2011–2014 (11,700km per person per year).

Figure 5: Distance travelled on roads per year and per capita for people aged 5+ years



Note: After 2004 data points are based on the average of 3 years of data per point.

Grow, peak or plateau?

In the future, will the distance travelled on our road increase, stay the same, or decrease?

This has been an area of much debate. For more thoughts on this, please see the Ministry's Future Demand project, available at **www.transport.govt.nz/futuredemand/**.

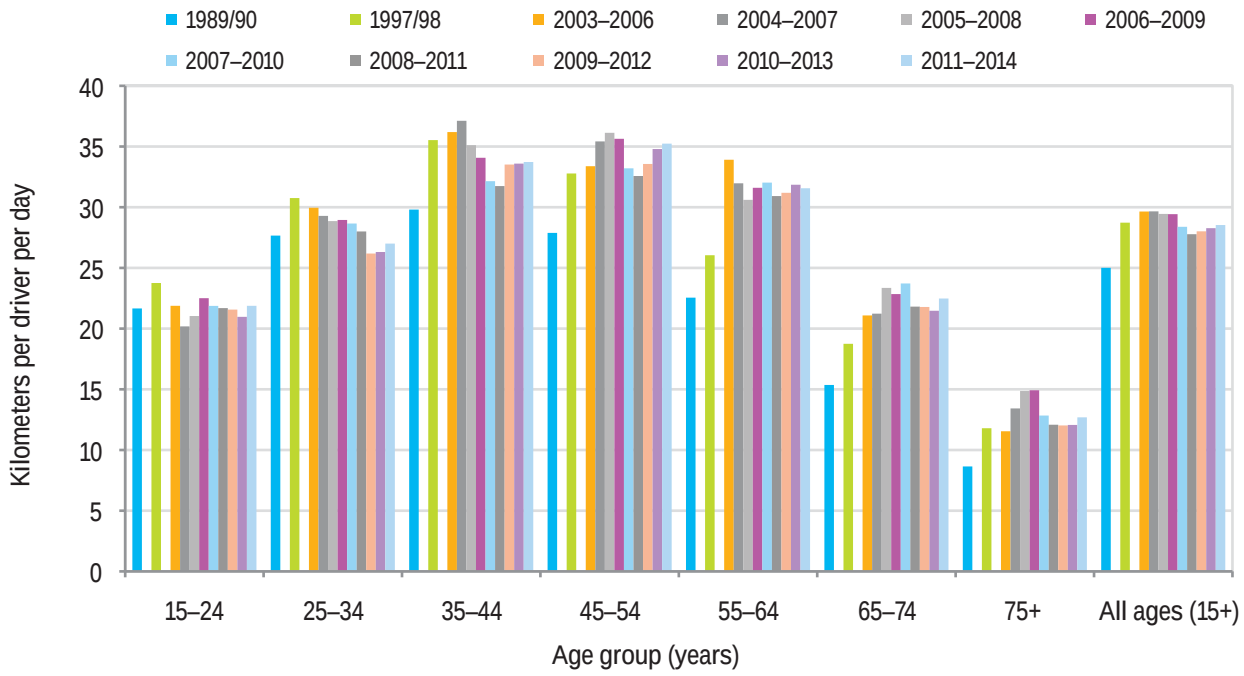
10 To be consistent over the 25 years, this excludes travel by children under 5 years old and only includes on-road travel (including walking distances, which in the 1989/90 and 1997/98 surveys were estimated using average walking speeds).

5 Driving and how it changes with age

Having established how driving makes a large difference in the amount of travel, we will now focus on driving and driving experience, looking more at the differences between older and younger drivers.

On average, older drivers are now driving further later into life than they did 25 years ago and are more likely to have driven further over the course of their life. In contrast, younger people are less likely to have a driver licence than they once were. They are also less likely to be a driver involved in a fatal crash than 25 years ago.

Figure 6: Distance driven per driver per day



Note: This graph visually compresses the time interval between 1989/90, 1997/98 and 2003–2006.

Here we consider only those people who drive. We define a driver as someone who reported driving 100 or more kilometres in the past year.

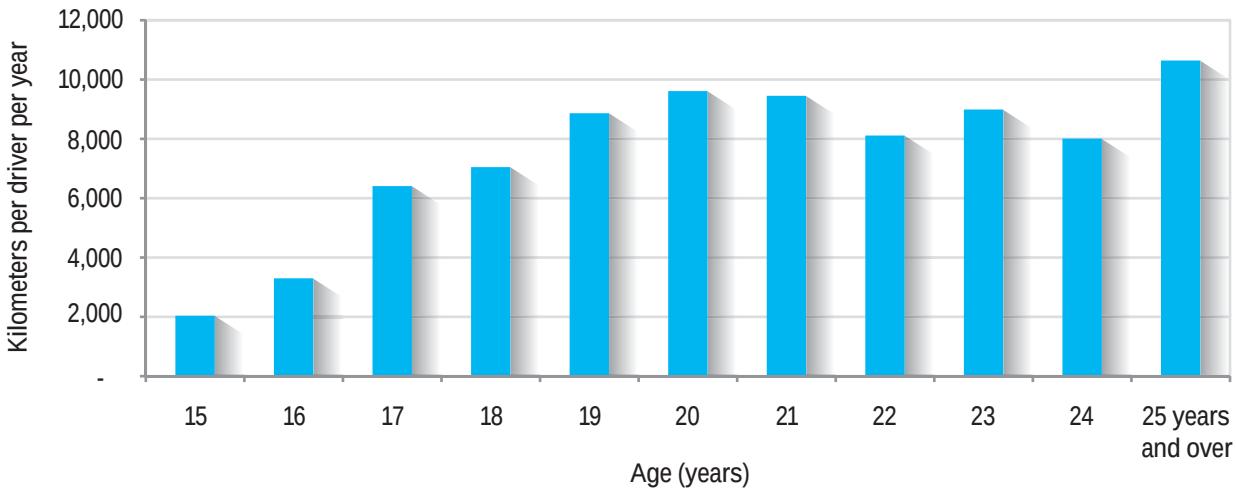
From Figure 6 we can see that, overall, the distance driven per driver per day increased from the late 1980s to reach a peak in the early 2000s. It then dropped a little, but has held steady for the past few years.

This trend is particularly marked for older people (55 years and older), who very clearly drive further now than they did in the late 1980s. The exceptions to this trend are the 15–24 year olds, whose distance driven per day has held steady, and the 25–34 year olds, whose distance driven per day is now less than in the late 1980s.

Looking at younger (15–24 year old) drivers in more detail (Figure 7), we see younger drivers (15 years old) average the shortest distance per driver, with 20 and 21 year olds driving the most, but still not up at the distances of those aged 25 years and over. The distance driven by younger drivers (18 years and under) has dropped since the early 2000s.

5.1 Starting off: younger drivers

Figure 7: Distance driven per driver per year by age group (2008–2014)



Young drivers risk

By combining crash data from the Crash Analysis System with Household Travel Survey data, we get an idea of the relative risk levels for different drivers based on how far they drive (exposure levels). We have seen large reductions in crash risk for young drivers over the past 25 years.

Young male drivers (15–19 year olds) have the highest risk of crashing of all ages.

Young male drivers involved in fatal crashes per 100 million kms driven

Late 80s 19.6

Mid 2000s 8.0

2010-14 5.5

This is still nearly 10 times the risk of the lowest-risk age group for men (50–54 year olds) for 2010–2014.

Young female drivers involved in fatal crashes per 100 million kms driven

Late 80s 6.9

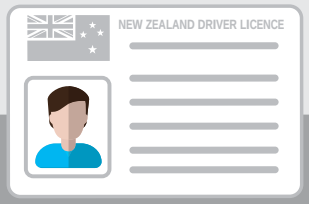
Mid 2000s 4.2

2010-14 1.8

This is still five times the risk of the lowest-risk age group for women (45–49 year olds) for 2010–2014.

More information on risk for other age groups and for other travel modes is available in the Ministry's Risk fact sheets, available from www.transport.govt.nz/research/travelsurvey/reportsandfactsheets/.

5.2 Driver licences



Changes in driver licences over the past 30 years

When looking at changes in young driver behaviour over the past 25 years, we need to take into account changes in our driver licensing system.

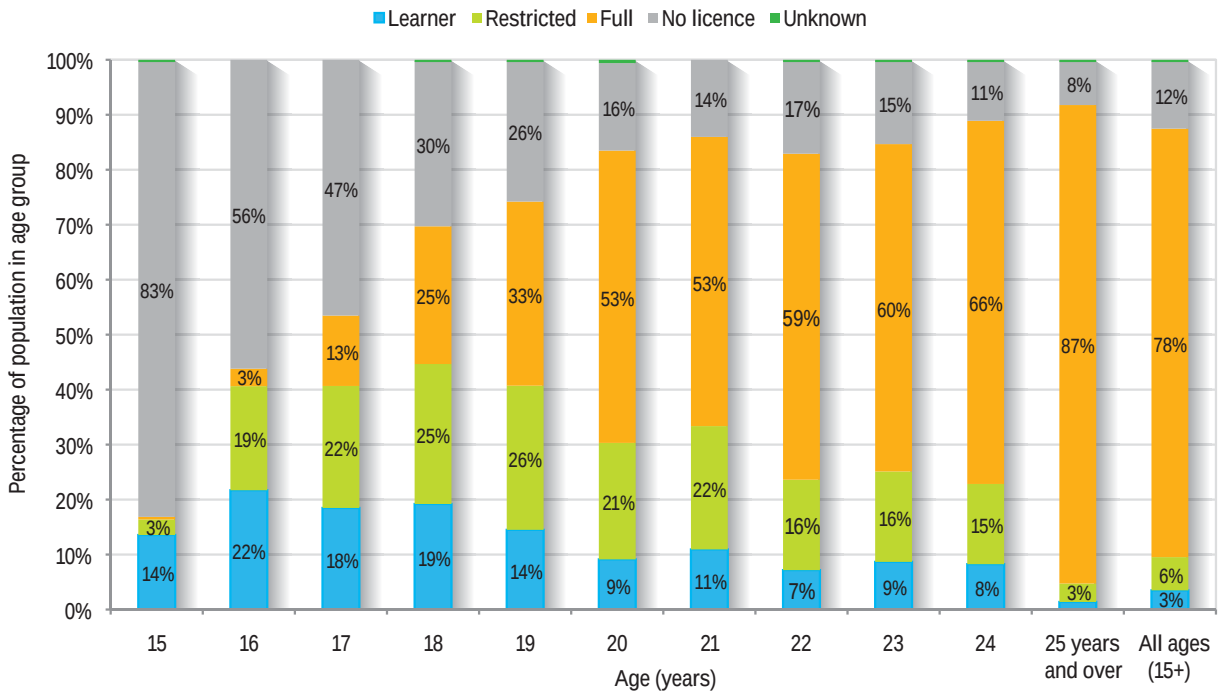
The largest change to affect young drivers falls just before our first survey, as the graduated driver licensing system was introduced to New Zealand in 1987.

The next largest change is the most recent, on 1 August 2011, when the minimum age for obtaining a learner driver licence increased from 15 to 16 years.

More information on driver licensing and associated legislation can be found in the Legislation chapter of the Ministry of Transport publication *Motor Vehicle Crashes in New Zealand*, at **www.transport.govt.nz/research/roadcrashstatistics/motorvehiclecrashesinnewzealand/**.

The distance driven by people in a particular age group is affected by various factors, including whether people have a car licence and what stage of licence it is. Learner licence holders need constant supervision, while restricted licence holders are free from supervision during the day, but need it late at night[11].

Figure 8: Percentage of population with driver licence by age group (2008–2014)



11 More current information on driver licences and the restrictions involved can be found on the New Zealand Transport Agency website (www.nzta.govt.nz/driver-licences/).

Looking at the types of licence held by age for 2008–2014 (Figure 8), we can see most 15 year olds did not have any sort of driver licence (83 percent), and only 14 percent had a learner licence[12].

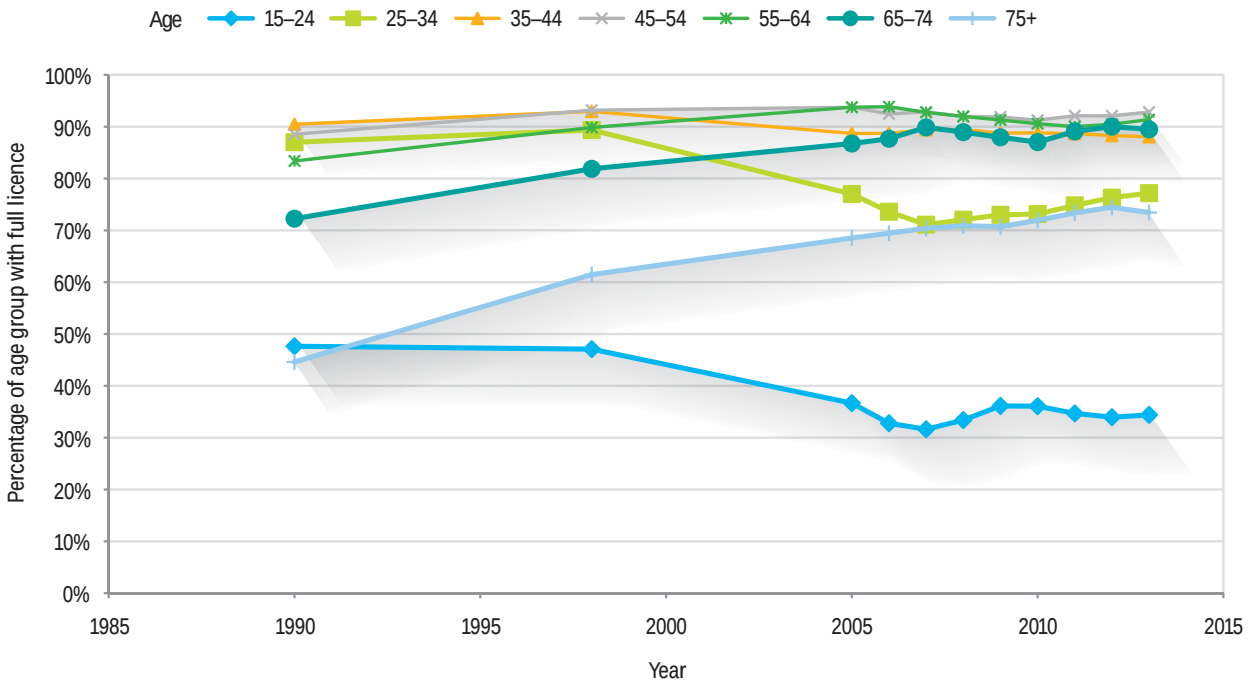
The proportion of people with no car licence decreases with age, until fewer than half of those aged 17 and about a quarter of those aged 19 have no car driver licence. The age group with the highest proportion of learner licence holders is 16–18 year olds (ranging from 22 to 18 percent), and this decreases quickly with age. About a quarter of 18 and 19 year olds have a restricted licence, and this proportion decreases with age too. By 20 years old, more than half of people surveyed have a full driver licence, increasing to more than 85 percent for those 25 years old and over.

The proportion of people between 15 and 35 years old that hold a full driver licence has dropped over the last 25 years, with the most pronounced drop by the younger people in that age group (Figure 9). For 15–24 year olds, the proportion has dropped from nearly half in the late 1980s to less than a third by 2011–2014.

More qualitative information on New Zealand Generation Y (born 1980 onwards) travel and mobility and licensing attitudes is available in Hopkins and Stephenson (2015)[13].

For people over 65 years old, the proportion holding a licence has risen over the 25 years. The most pronounced rise is for drivers over 75 years old[14]. Less than half this group held licences in the late 1980s, compared to about three-quarters by 2011–2014.

Figure 9: Percentage of people aged 15+ years with a full car licence



Note: After 2004 data points are based on the average of 3 years of data per point.

12 See Changes in driver licences over the past 30 years for details on when the learner minimum age changed from 15 to 16 years old.

13 Highlights http://hdl.handle.net/10523/5642 full report http://hdl.handle.net/10523/5641 (accessed 13 August 2015).

14 Note that the survey did not include people in retirement homes. These are likely to be, on average, less mobile than others in the same age group, so the survey may overestimate the licence rate for older people.

5.3 Lifetime driving experience

As well as looking at whether or not people have a licence and how much they drove during the survey and in the last year, we can look at people's lifetime driving experience. We can't know exactly how far people have driven, but people were able to estimate within broad categories.

Figure 10 and Figure 11 show how the driving experience profiles changed by age and gender between 1989/90 and 2011–2014. Following the trend observed earlier, that older people now tend to drive further than those their age 25 years ago, older men and women both show more driving experience with older age.

About 80–85 percent of men aged 50 and over had driven more than 200,000km over their life in the late 1980s. By 2011–2014, this had increased to at least 90 percent of men. But, conversely, younger men (15–19 years old) had less driving experience – about 30 percent of them hadn't driven yet in 1989/90, but in 2011–2014 this had increased to 50 percent.

Older women also now have far more driving experience than they once did. By 2011–2014, about 70 percent of 50–79 year old women have driven more than 200,000km over their life to date, whereas in 1989/90 it was only around 30 percent. But, like the men, the youngest women are more likely to have never driven, with about 55 percent not yet having driven in 2011–2014, compared to just over 40 percent in 1989/90.

Figure 10: Lifetime driving experience by current age and gender – females

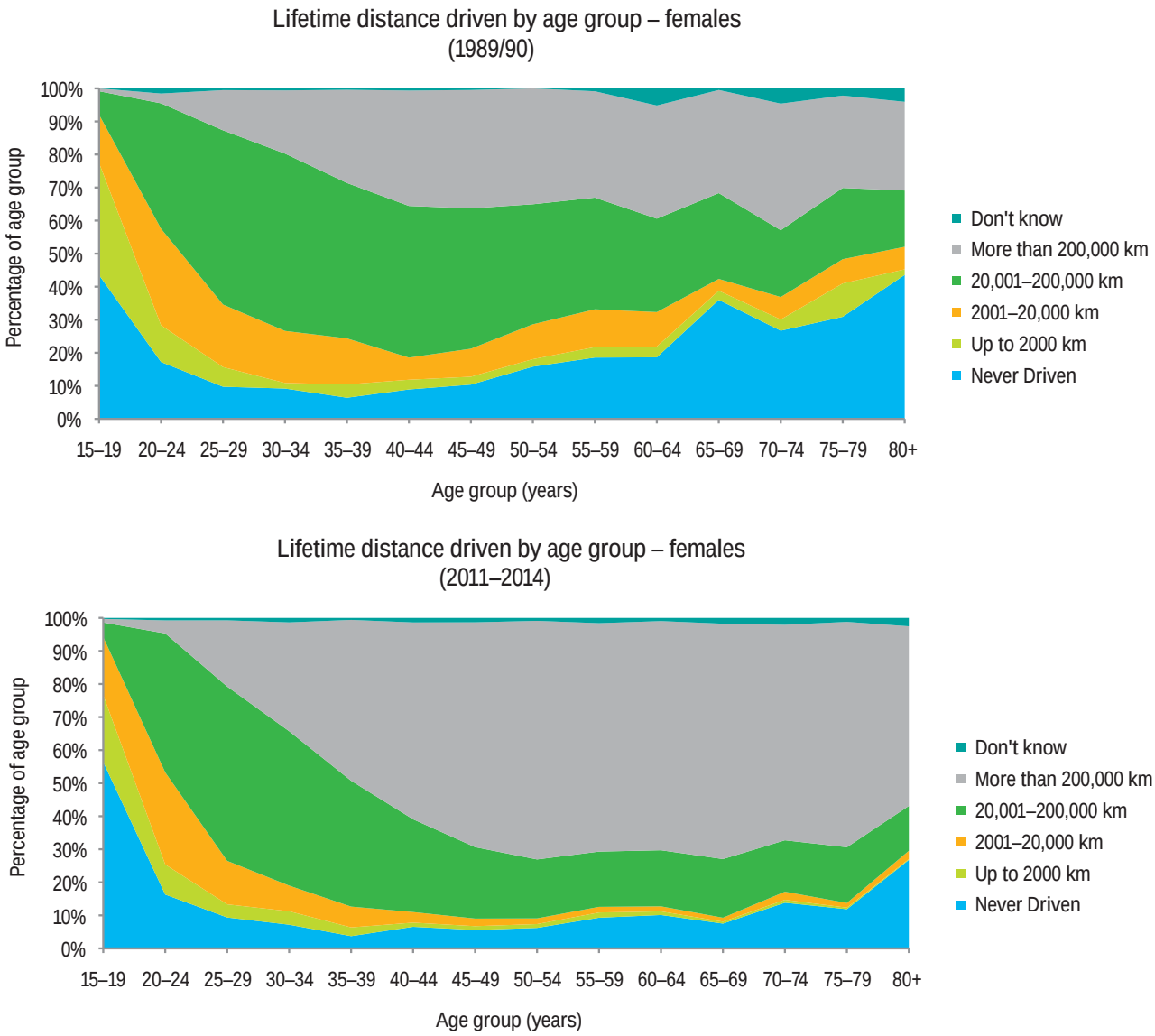
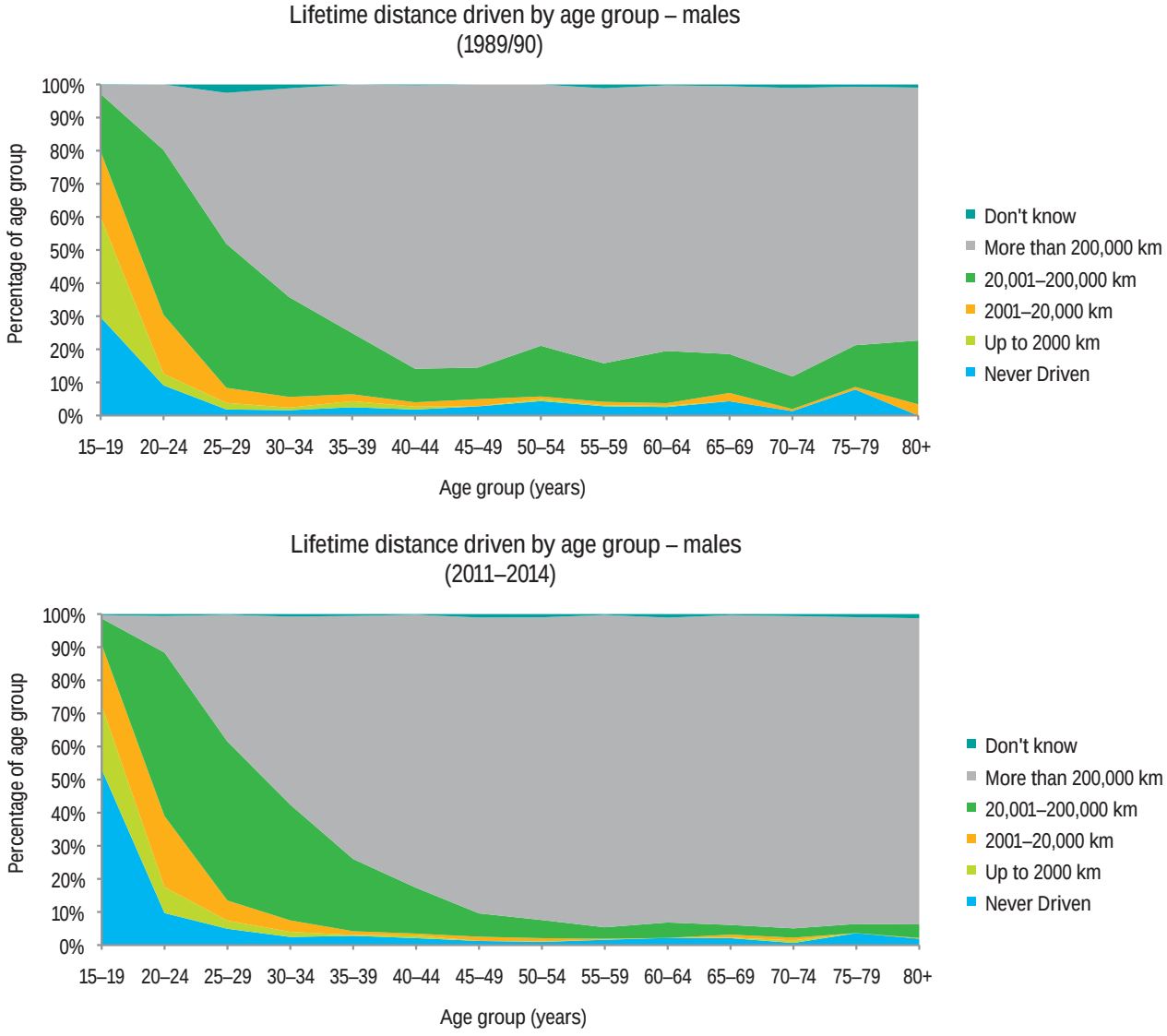


Figure 11: Lifetime driving experience by current age and gender – males



MARGARET

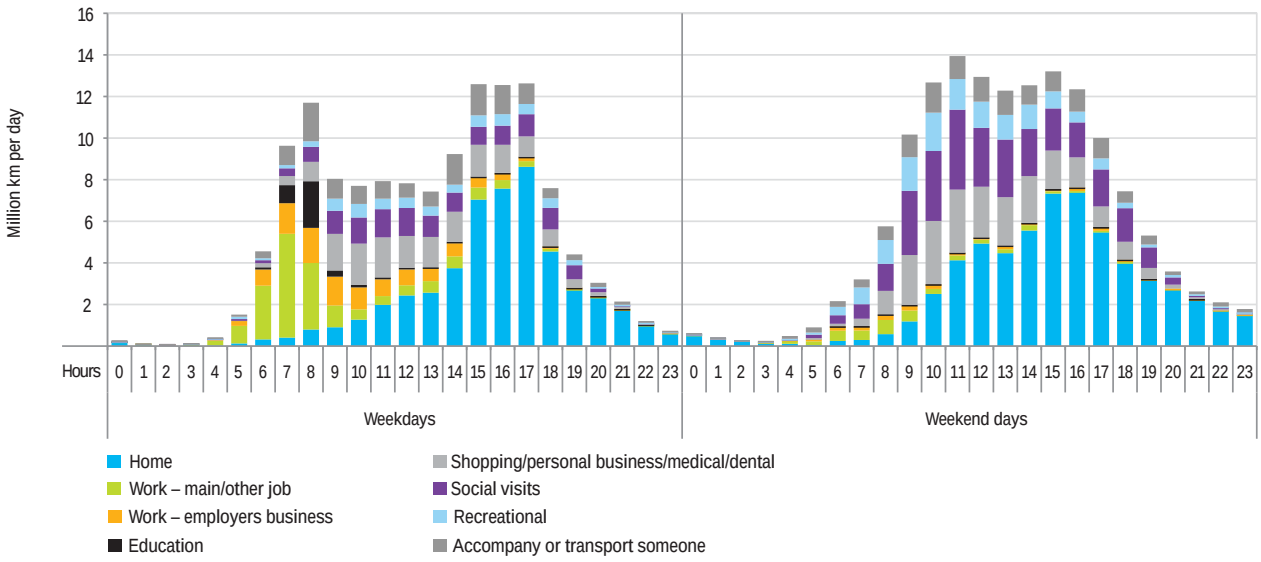
It has been a little while since Margaret visited her daughter Kim and the grandchildren, but she still drives fairly regularly. She enjoys getting out and about and keeping up with friends the way she always has. She has fond memories of visiting her own Nana, but would not want to always stay at home like her. Nana just didn't get out much after Grandad died – he was the one who did most of the driving and once he was gone she just didn't feel up to driving by herself. Nana said she didn't like the busy roads, but Margaret had her suspicions that Nana had never got a driver licence anyway.

6 A day in the life: travel through the day

On a typical weekday, people travel for a variety of reasons. In this chapter we look at some of the different reasons people travel and when and how they do that travel.

We can see when people travel most and why people are travelling at certain times of the day by looking at the average distance travelled in an hour per day, by purpose, for weekday and weekend (Figure 12).

Figure 12: Average distance per day by purpose and time of day (2010–2014)



In Figure 12, the overall profile shape that stands out is that people travel further each day in the weekend, and that people tend not to travel between midnight and 4–5am. Another strong feature is the two peaks in the morning and late afternoon/early evening. These are present in both weekdays and weekends, but are most distinct in weekdays. The weekend morning hump is also later in the day than the weekday one.

Looking in more detail at why people are travelling, we see that the morning weekday peak is dominated by travel to work and travel for employer's business. Education features strongly in that morning peak as well.

The afternoon/evening peak is dominated by people travelling home at the end of the day. Shopping/personal business, social visits and recreation are more spread out through the day and dominate in the weekend.

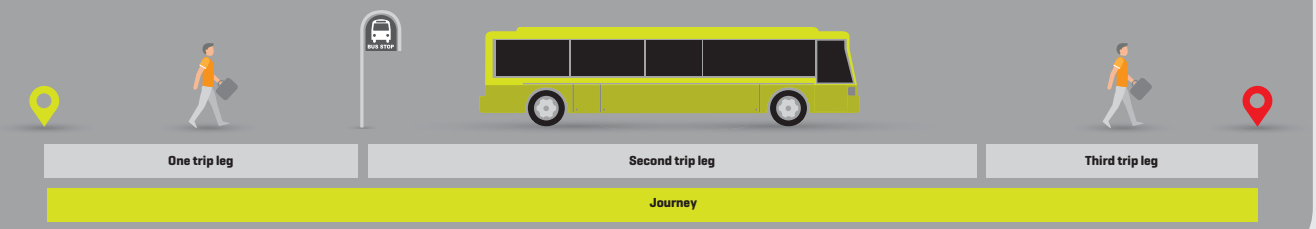
So, let's look at aspects of the day in more detail, starting with travelling to work and to school and how this has changed over time. We then look at other reasons for travel, and who people travel with.

6.1 Commuting

Much of people's travel to work occurs between 6am and 9:30am on weekdays.

Journeys, trip legs and other components of travel

There are different ways of describing the components of someone's travel – trips, trip legs and journeys. To save confusion, in the Household Travel Survey we describe things in terms of trip legs and journeys. Travelling to work is one of the easiest ways of thinking about the difference between trip legs and journeys – I start my journey to work by walking out the door and down the street to the bus stop (one trip leg). I then catch my bus into town (second trip leg) and then walk from the bus stop, around the corner to work (third trip leg and the end of my journey). The two initial trip leg reasons for travel are to change mode – I need to walk to the bus stop, and I need to catch the bus to get to where I can walk to work, but the overall purpose of the journey is to get to work.



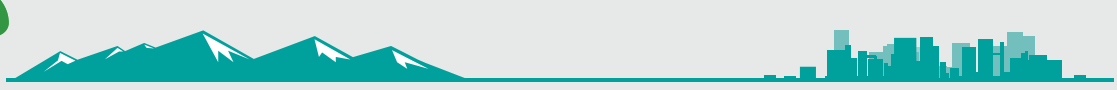
How long does it take to get to work?

Some comparisons of our shorter, medium and longer commutes [15]

CHRIS' commute time to work in Auckland is around 22 minutes: faster than some friends further out who have to travel for 45 minutes, but slower than friends closer to work, who take 10 minutes.

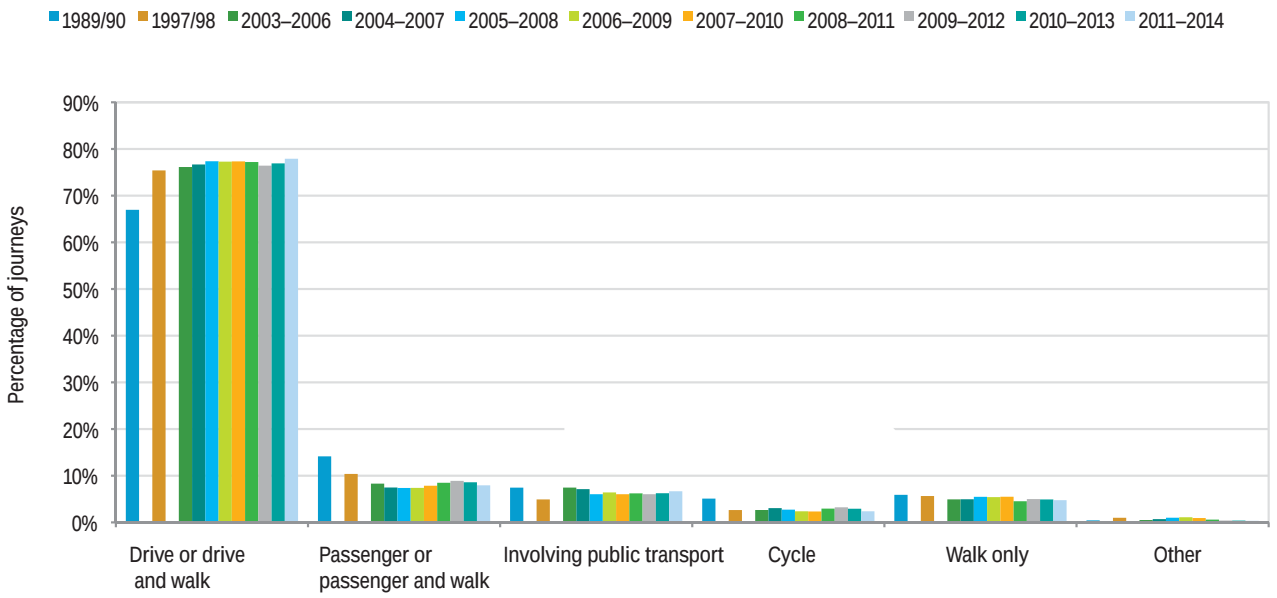
AROHA'S commute time to work in Wellington is similar, at around 20 minutes, but she has friends in the Wellington area who have to travel just as long as those in Auckland (45 minutes). Some of her other friends have an even shorter trip to work, taking only 5 minutes.

PAUL has a shorter commute in Christchurch compared to Chris and Aroha (around 15 minutes). Even his friends in Christchurch who need to travel much longer are still only travelling for about 30 minutes. Similarly he has friends who can be at work in as little as 5 minutes.



15 Journey times based on median (half the work journeys were shorter than this and half were longer than this), 10th percentile (only 10 percent of work journeys were shorter than this) and 90th percentile (only 10 percent of work journeys were longer than this).

Figure 13: Travel from home to work on weekday mornings



Note: This graph visually compresses the time interval between 1989/90, 1997/98 and 2003–2006.

How people travel to work has stayed fairly similar for the past 25 years. Over three-quarters of journeys to work are driving or driving and walking. This was slightly lower (67 percent of journeys) in the late 1980s, but by the late 1990s was up to 75 percent.

In contrast, being a passenger in a private vehicle was higher in the late 1980s (14 percent of journeys) and late 1990s (10 percent of journeys), and has since stayed fairly steady (between 7 and 9 percent). Cycling mode share has also declined over the past 25 years, from 5 percent of all journeys to work in 1989/90 to about 2 percent in the late 1990s, and has remained at about 2–3 percent since.

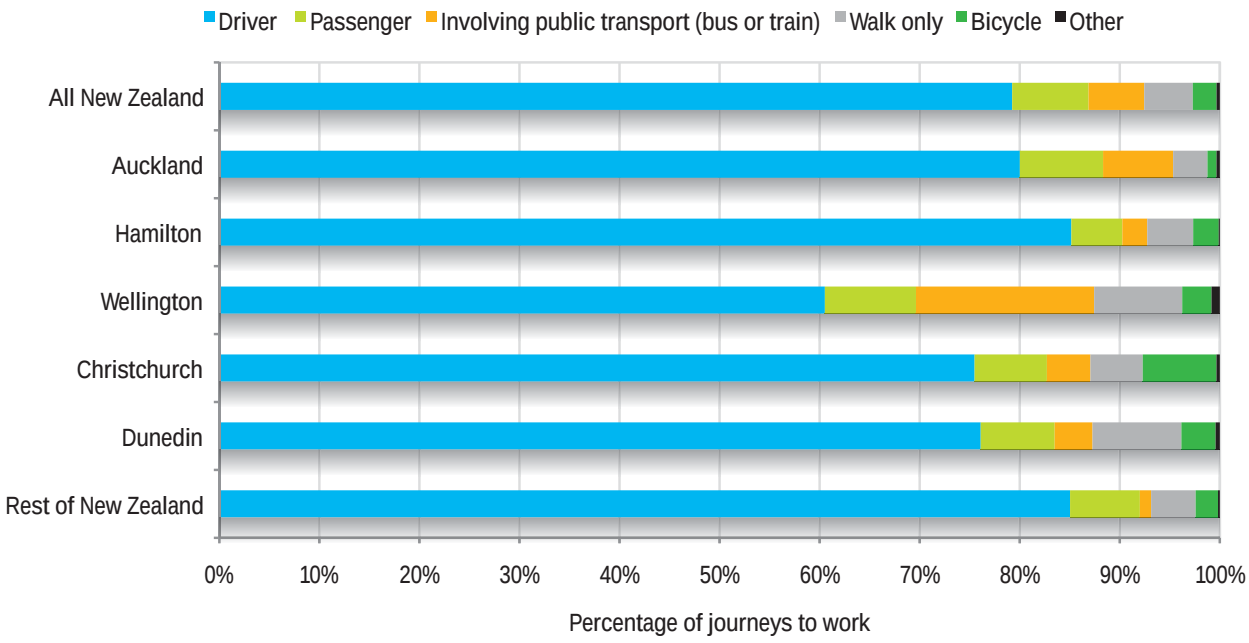
Journeys involving public transport have been quite steady at around 6–7 percent and walking-only journeys have also held steady at around 5 percent.

Where people live has a definite effect on their journey to work and the ways they can travel. Looking at people's journey to work in various main urban areas (Figure 14), we see that people in the Wellington area[16] are least likely to drive to work (61 percent of their journeys to work involve driving) and are most likely to use public transport (train or bus, 18 percent of their journeys to work). Of the active modes, those in Wellington and Dunedin have the highest walking rates (9 percent of journeys), while those in Christchurch have the highest cycling rates (7 percent of work journeys).

The New Zealand Census also collects information on people's journey to work. This gives us a regular snapshot of how everyone who works on a census day gets to work, and the main travel mode they use. More information on this is available from Statistics New Zealand.

16 Including Wellington, the Hutt Valley, Porirua and Kapiti.

Figure 14: Journey to work by mode and metropolitan area (2009–2014)



HAMILTON

Highest driving rates **85%**

WELLINGTON[16]

Highest public transport rates **18%**

DUNEDIN & WELLINGTON[16]

Highest walking rates **9%**

CHRISTCHURCH

Highest cycling rates **7%**

6.2 Who works

In order for people to be travelling to work, they need to be employed. Rates of employment differ between men and women and have changed over time.

From the Household Labour Force Survey (Statistics New Zealand), over the past 25 years, the number of people in full- or part-time employment has risen for both men and women (Figure 15). While the rates of part-time employment have increased for both men and women, women are more likely to work part-time than men, and the proportion has increased over time.

This also holds when we look at the Household Travel Survey data on employment.

Let's focus on people of similar ages living as a couple, with children, as this allows us to look at what differences gender and employment status make in how people travel.

Figure 15: Full-time and part-time employment by gender (Household Labour Force Survey, Statistics New Zealand)

Source: Statistics New Zealand and licensed by Statistics NZ for re-use under the Creative Commons Attribution 3.0 New Zealand licence. Accessed 7 July 2015.

Morning travel: then and now

1989/90

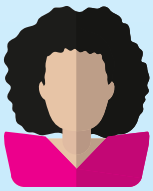
Christine:

Christine is **married** and has **primary school-aged children**. She is unlikely to be working. Of women like her, only 19 percent are working full-time, with a further 26 percent working part-time. Nearly half are not employed.

Christine's morning travel

Looking at trips starting between 6am and 9:30am, we see that Christine heads out for about 8 minutes. Mostly this is accompanying others (2.5 minutes), personal business (2 minutes) and social (1.5 minutes).

Women like Christine who work spend about 13 minutes out at this time, of which nearly 5 minutes would be travel to work, 2 minutes employer's business, and over 2 minutes accompanying others.



Sue:

Sue is **married** and has **secondary school-aged children**. She is more likely than Christine to be working. Of women like her, 39 percent are working full-time, with a further 22 percent working part-time. Nearly a quarter are not employed.

Sue's morning travel

Looking at trips starting between 6am and 9:30am, we see that Sue heads out for about 15 minutes, of which nearly 7 minutes would be travel to work, nearly 3 minutes accompanying others, and about 2 minutes social/recreational.

Women like Sue who don't work tend to head out for about 10 minutes. Mostly this is shopping/personal business (4 minutes), social (3 minutes) and accompanying others (2 minutes).

2011-2014

Sarah:

Sarah (like Christine) is **married** and has **primary school-aged children**. She is more likely to be working than 25 years ago. Of women like her, 39 percent are working full-time, with a further 31 percent working part-time. Around a quarter are not employed.

Sarah's morning travel

Looking at trips starting between 6am and 9:30am, we see that Sarah heads out for about 19 minutes, of which 9 minutes would be travel to work, nearly 4 minutes accompanying others and nearly 2 minutes on shopping/personal business.

Women like her who don't work spend about 16 minutes out at this time of the morning. Mostly this is accompanying others (6.5 minutes), shopping/personal business (nearly 2.5 minutes) and education (nearly 2 minutes).

Helen:

Helen (like Sue) is **married** and has **secondary school-aged children**. She is far more likely than Christine, Sarah and Sue to be working. Of women like her, nearly half (48 percent) are working full-time, with a further 30 percent working part-time. Fewer than 20 percent are not employed.

Helen's morning travel

Looking at trips starting between 6am and 9:30am, we see that Helen heads out for about 20 minutes, of which nearly 9 minutes would be travel to work, 4 minutes accompanying others and nearly 2 minutes on employer's business.

Women like Helen who don't work tend to head out for about 17 minutes. This is social (6 minutes), accompanying others (4 minutes), and personal business (nearly 3 minutes).

Morning travel: then and now

1989/90

Mark:

Mark is **married** and has **primary school-aged children**. He is likely to be working. Of men like him, 86 percent are working full-time, with a further 3 percent working part-time. Eleven percent are not employed.

Mark's morning travel[17]

Looking at trips starting between 6am and 9:30am, we see that Mark heads out for about 26 minutes. About half of this is travel to work (11 minutes). Employer's business is a further 12 minutes. There is a minute for accompanying others.

Bruce:

Bruce is **married** and has **secondary school-aged children**. He is likely to be working. Of men like him, 88 percent are working full-time, with a further 2 percent working part-time. Ten percent are not employed.

Bruce's morning travel[17]

Looking at trips starting between 6am and 9:30am, we see that Bruce heads out for about 23 minutes. Over half of this is travel to work (13 minutes). Employer's business is a further 6 minutes. There is a minute for accompanying others.

2011-2014

Daniel:

Daniel (like Mark) is **married** and has **primary school-aged children**. He is likely to be working. Of men like him, 88 percent are working full-time, with a further 4 percent working part-time. Seven percent are not employed.

Daniel's morning travel[17]

Looking at trips starting between 6am and 9:30am, we see that Daniel heads out for about 23 minutes. About half of this is travel to work (11 minutes). Employer's business is a further 5 minutes. He spends about 2.5 minutes accompanying others.

Stephen:

Stephen is **married** and has **secondary school-aged children**. He is likely to be working. Of men like him, 86 percent are working full-time, with a further 5 percent working part-time. Seven percent are not employed.

Stephen's morning travel[17]

Looking at trips starting between 6am and 9:30am, we see that Stephen heads out for about 22 minutes. About half of this is travel to work (11 minutes). Employer's business is a further 5 minutes. He spends 2 minutes accompanying others.

17 Sample too small to comment on men like Mark, Daniel, Bruce and Stephen who don't work.

6.3 Travel to school

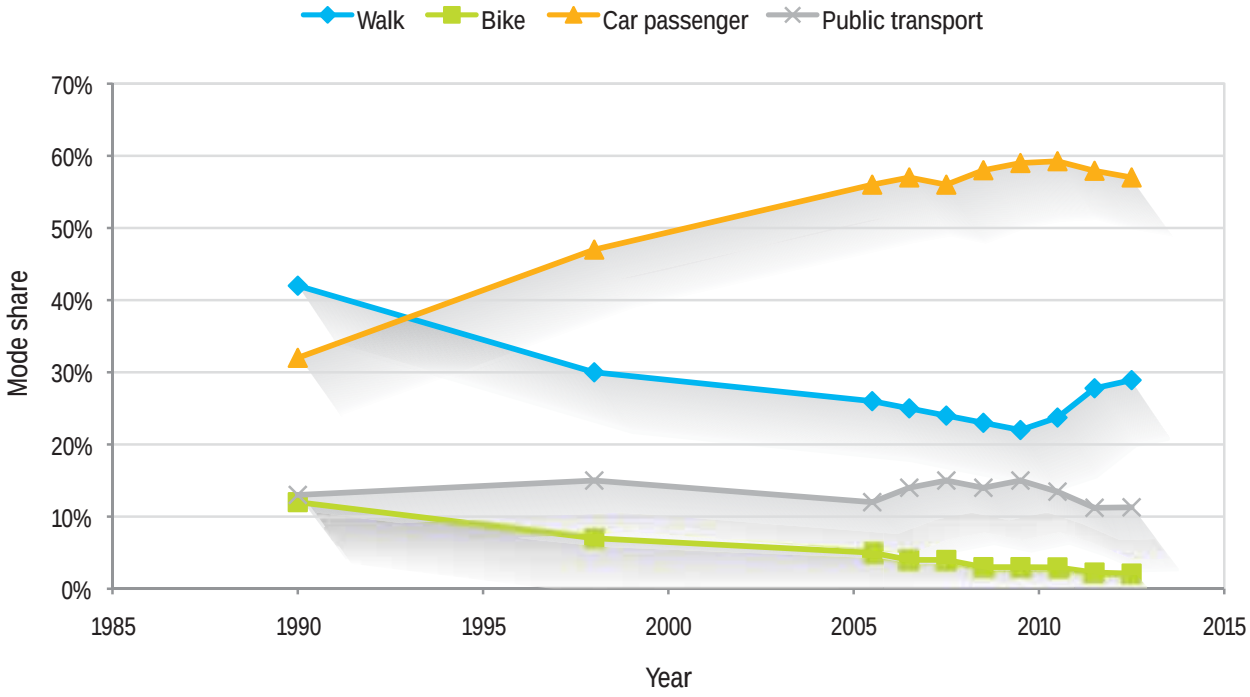
Adults are not the only ones travelling in the mornings: children need to get to school and how they travel to school has changed over the past 25 years. Children are more likely to be a car passenger now than they were 25 years ago and fewer children cycle to school.

For primary school children (aged 5–12 years old, Figure 16) in the late 1980s, walking was the most common way to get to school (42 percent of school journeys), followed by being a car passenger (32 percent) and by public transport and cycling (13 and 12 percent respectively).

By the late 1990s, the walking journeys had decreased to 30 percent, while the car passenger journeys had increased to 47 percent. Public transport had increased to 15 percent, but cycling had declined to 7 percent. By the mid-2000s, more than half of primary school children's journeys were as a car passenger (56 percent). This rose to a peak of nearly 60 percent for 2007–2011 and 2008–2012, but has since declined to 57 percent by 2010–2014.

Walking declined from 26 percent in the mid-2000s to a low of 22 percent in 2007–2011, but has since increased to 29 percent. Public transport use has varied between 11 and 15 percent.

Figure 16: Travel to school – mode share – ages 5–12 years



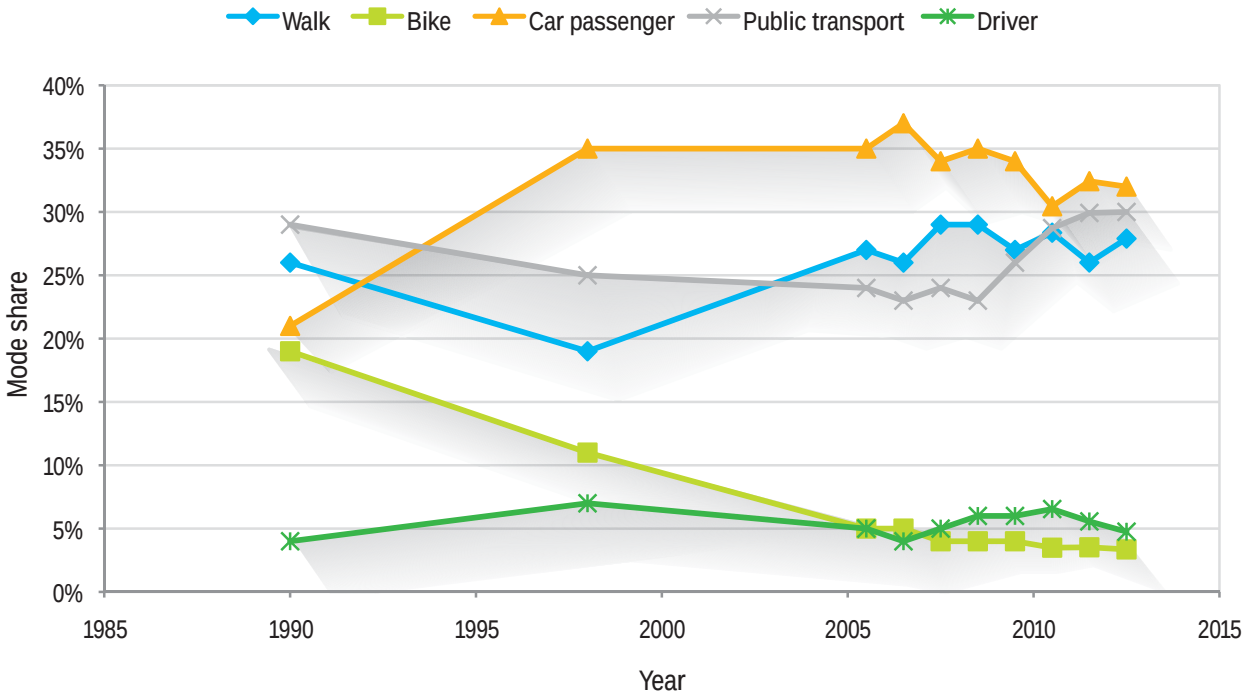
Note: After 2004 data points are based on the average of 4 years of data per point.

In the late 1980s, public transport (29 percent) and walking (26 percent) were the most common ways for secondary school students (aged 13–17 years old, Figure 17) to get to school. Around 21 percent caught a car ride with someone, 19 percent cycled and about 4 percent drove themselves.

By the late 1990s, public transport was no longer the most common way to get to school – more secondary school students were now car passengers (35 percent). Public transport declined to 25 percent, walking to under 20 percent and cycling to about 11 percent. Cycling is discussed in more detail later (Figure 18).

By the mid-2000s, 35–37 percent of journeys to school were as a car passenger, but that declined to 32 percent by 2010–2014. Walking was the next most common way to get to school in the 2000s (26–29 percent), but was overtaken by public transport around 2008–2012. Public transport was just under 25 percent for the mid-2000s, but started increasing and rose to 30 percent by 2010–2014. From around 2005–2009, slightly more teens have driven to school than cycled.

Figure 17: Travel to school – mode share – ages 13–17 years



Note: After 2004 data points are based on the average of 4 years of data per point.

Public transport is a popular way to get to secondary school

1989/90 **29%**

2010-2014 **30%**

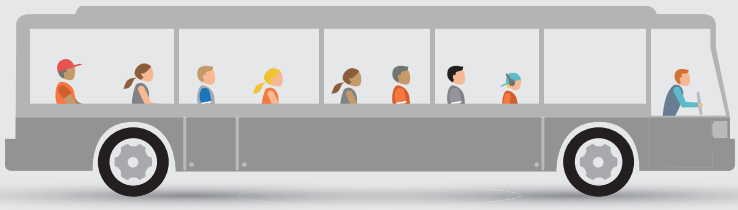
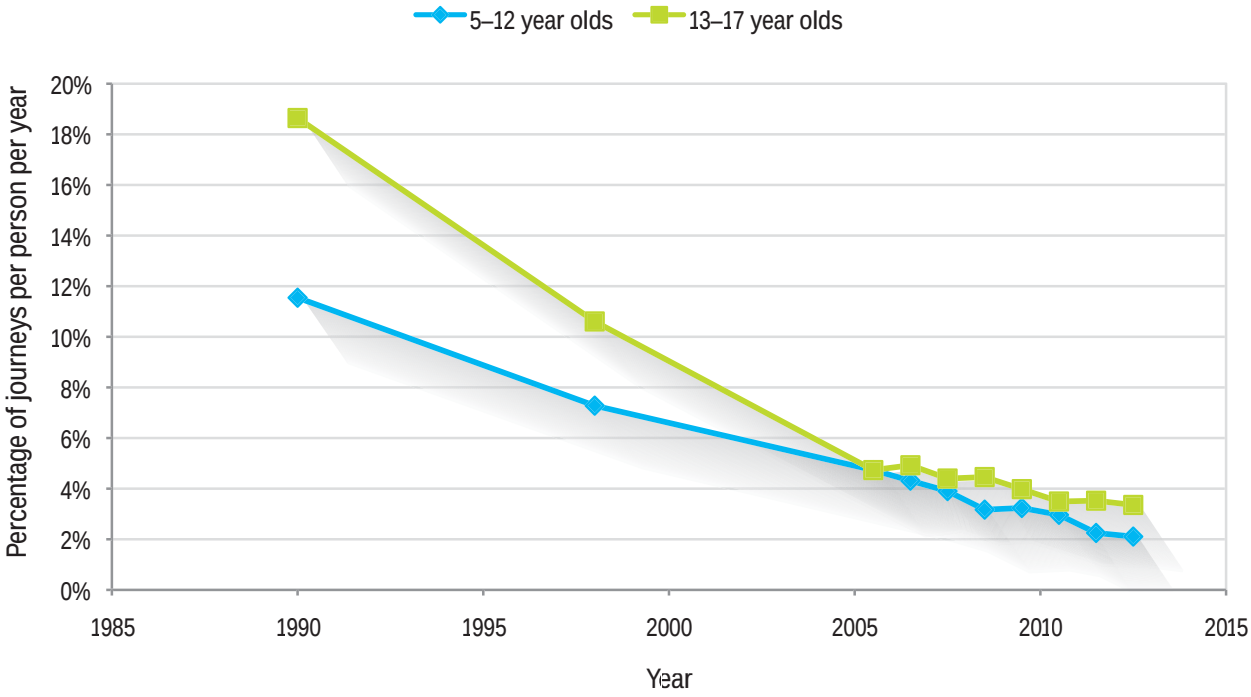
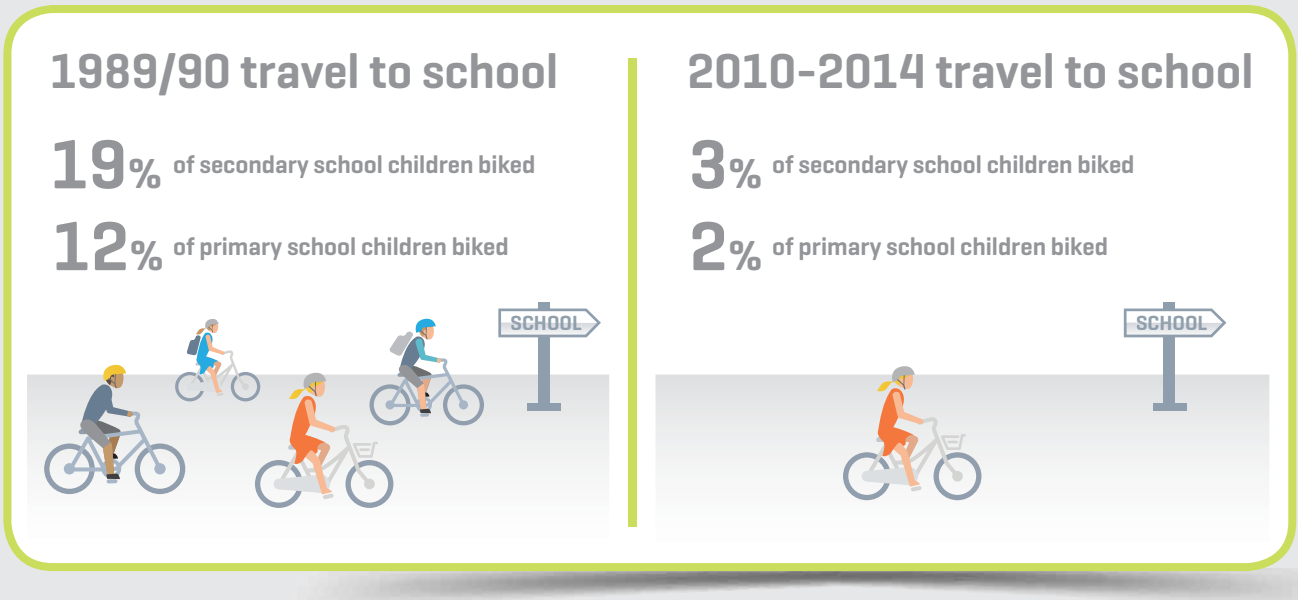


Figure 18: Percentage of journeys to school cycled



Note: After 2004 data points are based on the average of 4 years of data per point.

Cycling has seen the most dramatic decline in rates for getting to school (Figure 18). In the late 1980s, 12 percent of primary school journeys and 19 percent of secondary school journeys were by bike, but by 2010–2014 this had fallen to 2 percent and 3 percent respectively.



6.4 Why else are we travelling?

While commuting to work and school are major reasons for morning travel, they are not the only reasons for travel (Figure 19).

We spend the largest proportion of our time travelling coming home (39 percent), but as this is a catch-all category and why people went out in the first place is of more interest, we will exclude it from the rest of the analysis in this section.

Travel to work (16 percent) and education (6 percent), as discussed above, together make up less than a quarter (22 percent) of the time spent travelling.

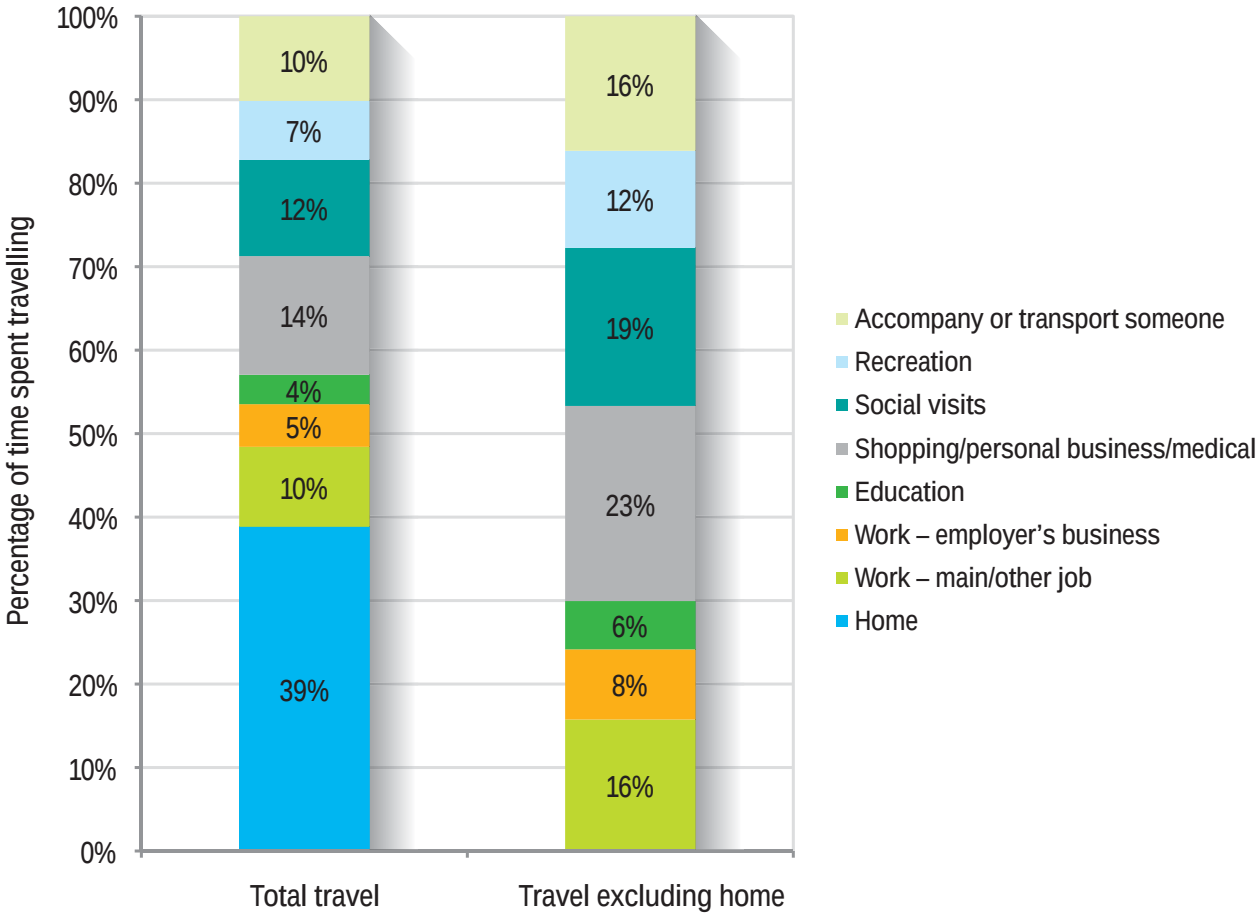
Nearly a quarter of our time spent travelling is going shopping, conducting personal business or for medical reasons. Nearly a fifth of our time is spent on social visits. Accompanying others makes up 16 percent of travel time, followed by 12 percent of travel time for recreation, and 8 percent for employer's business.

We use these categories – what do they mean?

The Travel Survey codes travel purposes into categories. Formal definitions are available in the **Glossary**, but it helps to see examples.

Purpose	What we mean and examples
Employer's business	Travel done for work rather than getting to work. This can range from a plumber driving to their next job to flying up to Auckland for a work-related conference.
Shopping	Purchasing (or intending to purchase) goods, eg grocery shopping. Includes window shopping.
Personal business	Similar to shopping, but no goods are involved. Examples include visiting a hairdresser, bank or library.
Medical	Includes visiting a doctor or dentist.
Social visits	Social visits and entertainment. This may range from visiting friends to going out to the movies or going out for a meal. Preschool activities such as playschool and daycare are currently included in this category.
Recreation	This includes recreational activities, eg going jogging or cycling, as well as travel to sports or recreation, eg driving to the park to play soccer.
Accompanying someone	Going somewhere for someone else's purpose. This can range from dropping kids off at school (their purpose is education, but the driver is accompanying), to the same children coming along grocery shopping. This also includes travel to pick someone up, eg from the airport or work.

Figure 19: Travel purpose and time (2011–2014)



We're not just commuting to work

23% Shopping
personal business/medical

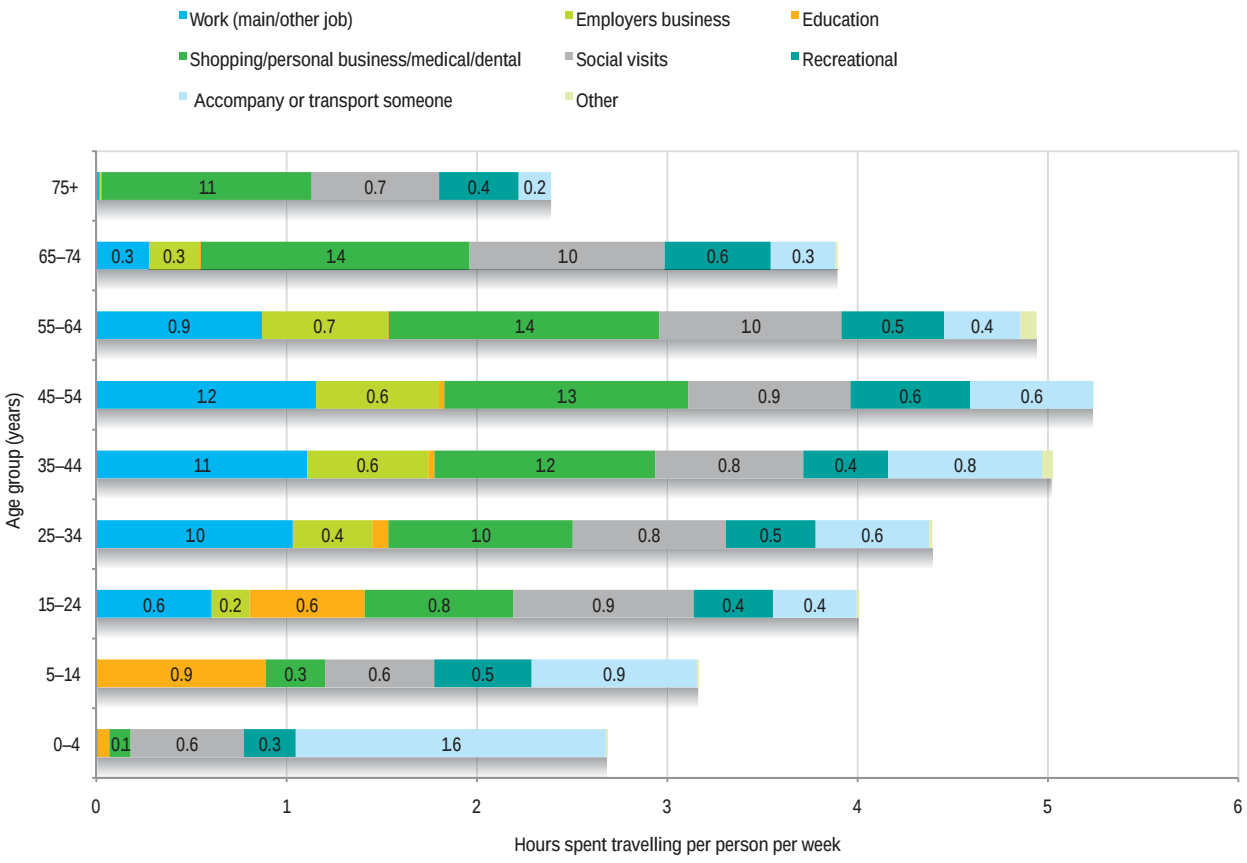
19% Social visits

12% Recreation

6% Education

The time spent travelling and the reasons for travelling vary with age (Figure 20). Education and accompanying others are major components of travel for under 15 year olds, but matter little to those aged over 65 years. Travel to work is an important reason for travel for 15–64 year olds, but not for children and those over 75 years old. Those aged 25–54 years spend similar amounts of time travelling to work as they do for shopping/personal business, though the amount of time each age group spends on each varies. In general, the amount of shopping and personal business increases with age, reaching a maximum for 55–74 year olds. For those aged 65–74 years old, this is more than 45 percent of their travel.

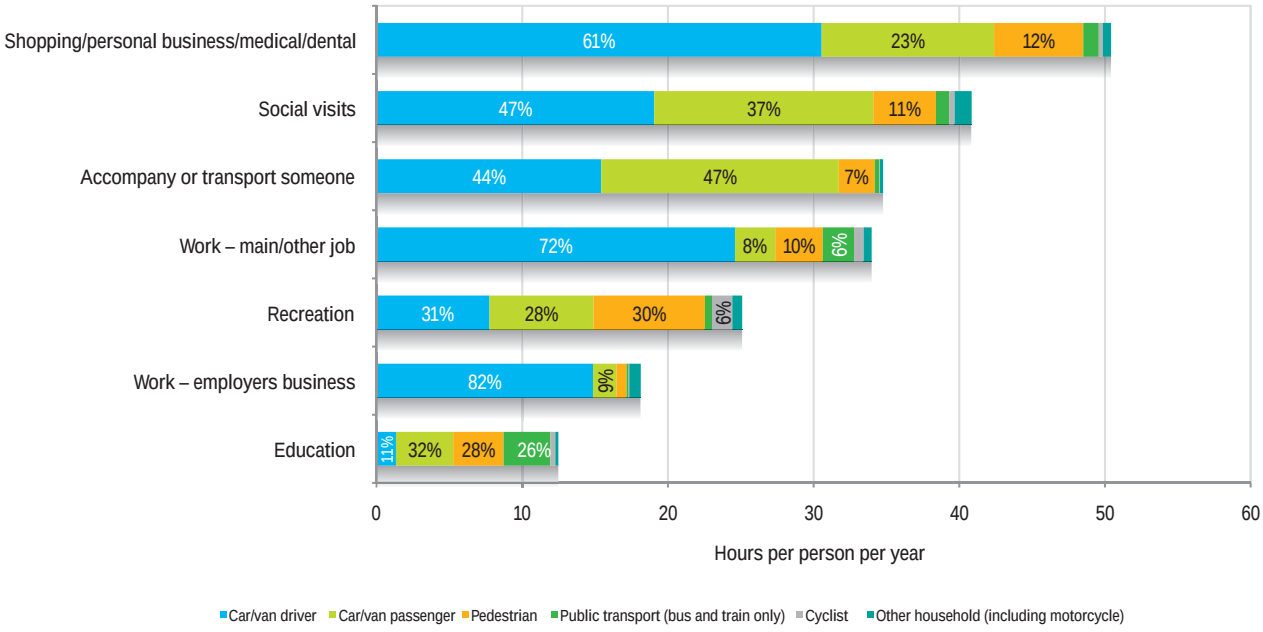
Figure 20: Reason for travel by age group[18] (2011–2014)



Reasons for travel also affect people's decisions on how to travel. Travel to work, shopping/personal business and especially employer's business are the reasons for more than half the time spent driving. Less than half of the time spent travelling for social visits and accompanying others is driven, and this is even lower for recreation (31 percent) and education (11 percent). Of course, in the case of education, the age of most of the travellers precludes driving as a mode of travel.

18 Excludes travel home.

Figure 21: Mode share of time spent travelling, for each trip purpose/destination type (2010– 2014)



Evenly split:

Travel for and to recreation is evenly split between driving (31 percent), being a passenger (28 percent) and walking[19] (30 percent). Recreational travel features the highest proportion of cycling, at 6 percent.

Nearly half of all travel accompanying others is as a passenger (47 percent) and many of these will be children (Figure 20).

30% Walking

31% Driving

28% Being a passenger

Recreational travel features the highest proportion of cycling 6%

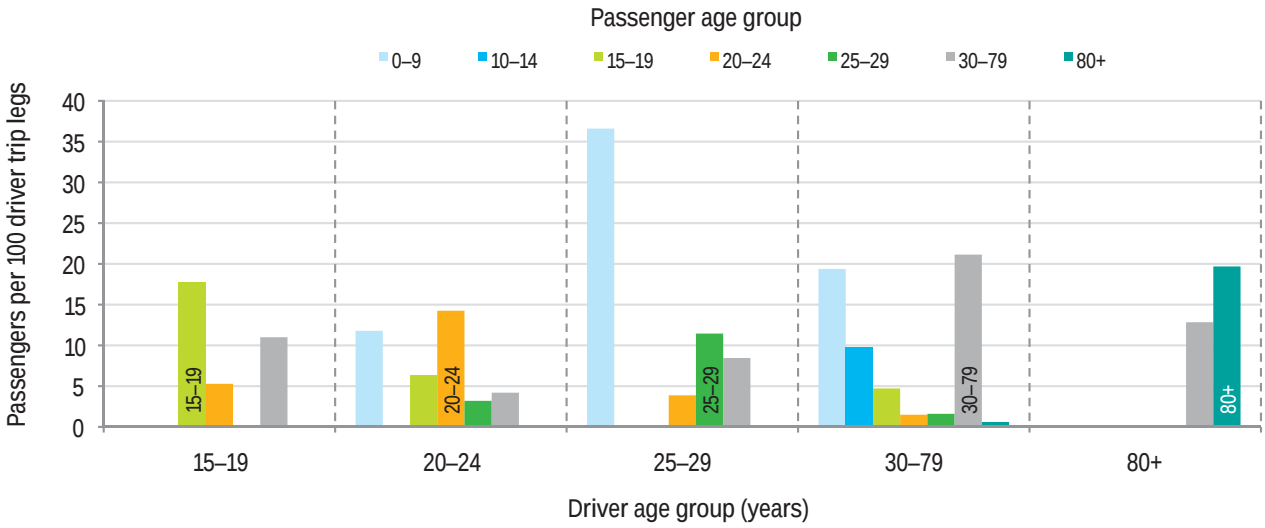
19 This includes running.

6.5 Who people travel with

Who people travel with depends on their age and stage of life. People over 15 years old generally travel with someone their own age in the car, such as partners, spouses or friends (Figure 22).

This changes once people are old enough to have children, when you start seeing young passengers turning up. Children grow up and their parents get older. Once young people start driving, they tend to drive with friends their own age or with an older person. Drivers 80 years and over tend not to drive younger people around.

Figure 22: Passengers in each age group by age of driver, per 100 driver trip legs (2011–2014)



Note: Only shown if more than 100 trips sampled.

Anna Like any typical 18 year old driver, Anna is most likely to drive by herself, but when she doesn't, her passengers are most likely to be her friends Emma and Li (also 18 years old). Before she got her restricted licence, her driving was supervised by her parents (Mike and Sunita), but now she enjoys the freedom of not needing the supervision during the day.

Sarah

27 year old Sarah's driving often involves transporting her primary school-aged children around. She is able to get out and about without them a bit more now Olivia (the youngest) has started school.

7 Alcohol consumption and travel

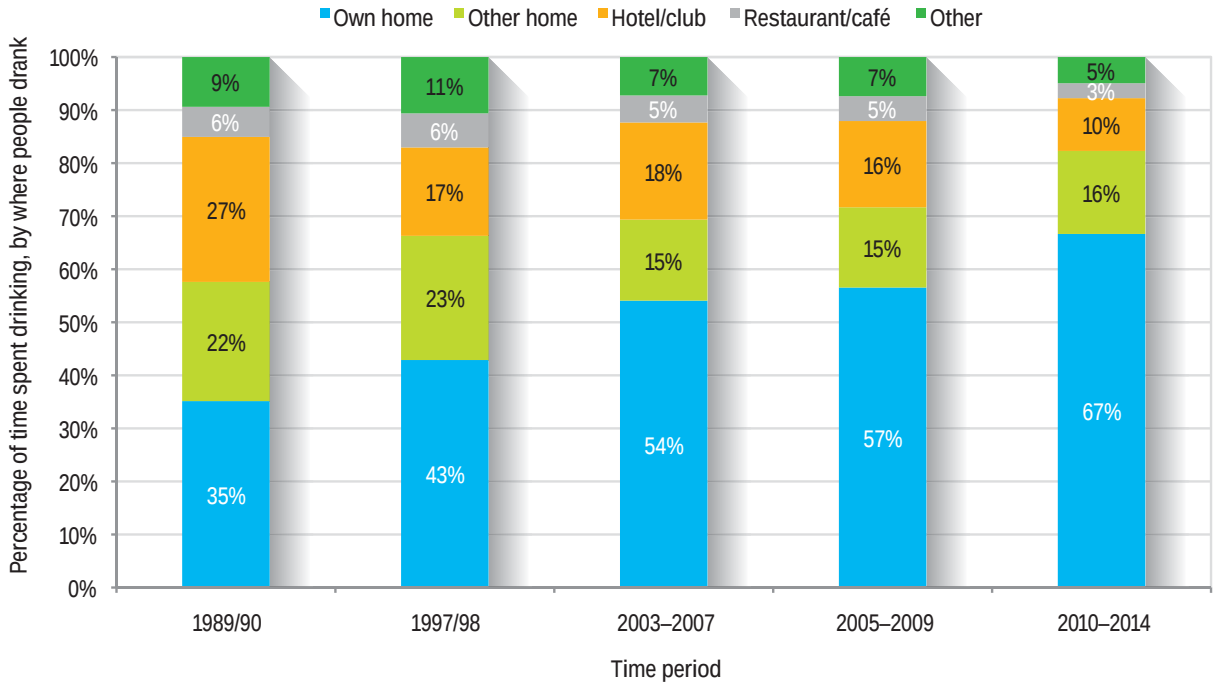
Alcohol consumption in New Zealand is a major area of research, ranging from the health implications of the quantities of alcohol consumed, to the increased risk of crashing when it is combined with driving. It is also an area where we have seen some large changes over the past 25 years.

In 1989, 41 percent of fatal crashes had alcohol/drugs as a contributing factor and 321 people died in those crashes. In 2014, 23 percent of fatal crashes had alcohol/drugs as a contributing factor, with 70 people dying in those crashes[20].

Since 1989, New Zealand has introduced compulsory breath alcohol testing, changed the blood and breath alcohol limits, changed the penalties for being over the limits and reduced the minimum alcohol purchase age from 20 to 18 years[21]. We have seen a reduction in drink driving-related casualties, but to understand the underlying behaviour and the context of the policy changes better, we need to have an idea of the basic alcohol consumption and travel patterns.

As well as being interviewed about their travel over 2 days, the New Zealand Household Travel Survey asked people about their alcohol consumption over the travel days and on the night before. People were asked about the starting time, finishing time and venue of each drinking session, as well as the type and number of drinks consumed[22]. The 1989/90 and 1997/98 surveys asked about the start and end times of drinking sessions and the venue, but only asked this of people who drove on the travel days and did not ask about type and number of drinks.

Figure 23: Percentage of time spent drinking by venue, for people who drove on the travel days (national average)



% of drinking time at own home

1989/90

35%

67%

2011 - 2014

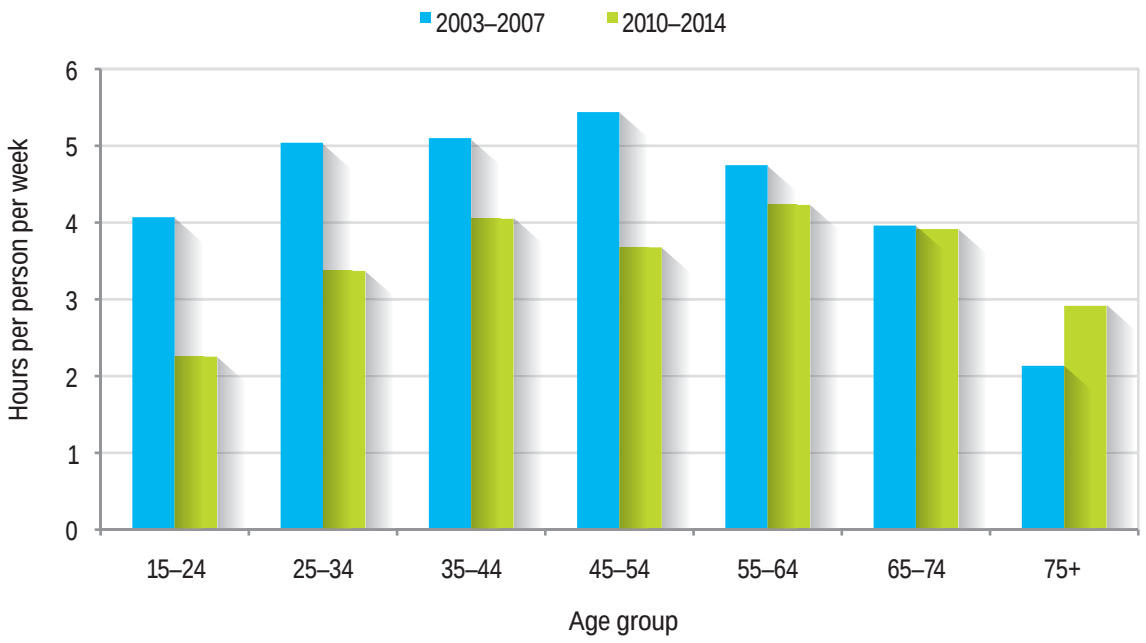
20 From www.transport.govt.nz/research/crashfacts/alcohol-and-drugs/.

21 For more information on alcohol/drug crashes and the legislation changes, see www.transport.govt.nz/research/crashfacts/alcohol-and-drugs/.

22 Accuracy of recall (especially around amounts) may decrease with the amount of alcohol consumed in a drinking session.

The places people reported drinking have changed over the past 25 years. In the late 1980s, more than a third of time spent drinking was in people's own home, and more than a quarter was out at a hotel, pub or club. Twenty-two percent was at someone else's home. By the late 1990s, the time drinking at home had increased to 43 percent, and the time out drinking at a hotel, pub or club had decreased to 17 percent. This trend continued in the 2000s, until by 2010–2014 two-thirds of people's time spent drinking was at home, with a further 16 percent at someone else's home. Only 10 percent was at a hotel, pub or club and 3 percent at a restaurant or café.

Figure 24: Time spent in drinking sessions by age (2003–2007, 2010–2014)



As with many things, the time spent drinking varies by age. In 2010–2014, those aged 35–44, 55–64 and 65–74 years spent around 4 hours per person per week drinking.

Between 2003–2007 and 2010–2014, the time spent drinking has decreased for those under 75 years of age, but increased for those older than that.

In 1989 more people died in crashes with driver alcohol/drugs as a factor than our total road toll in 2014.

321

1989 Alcohol/drug related road deaths

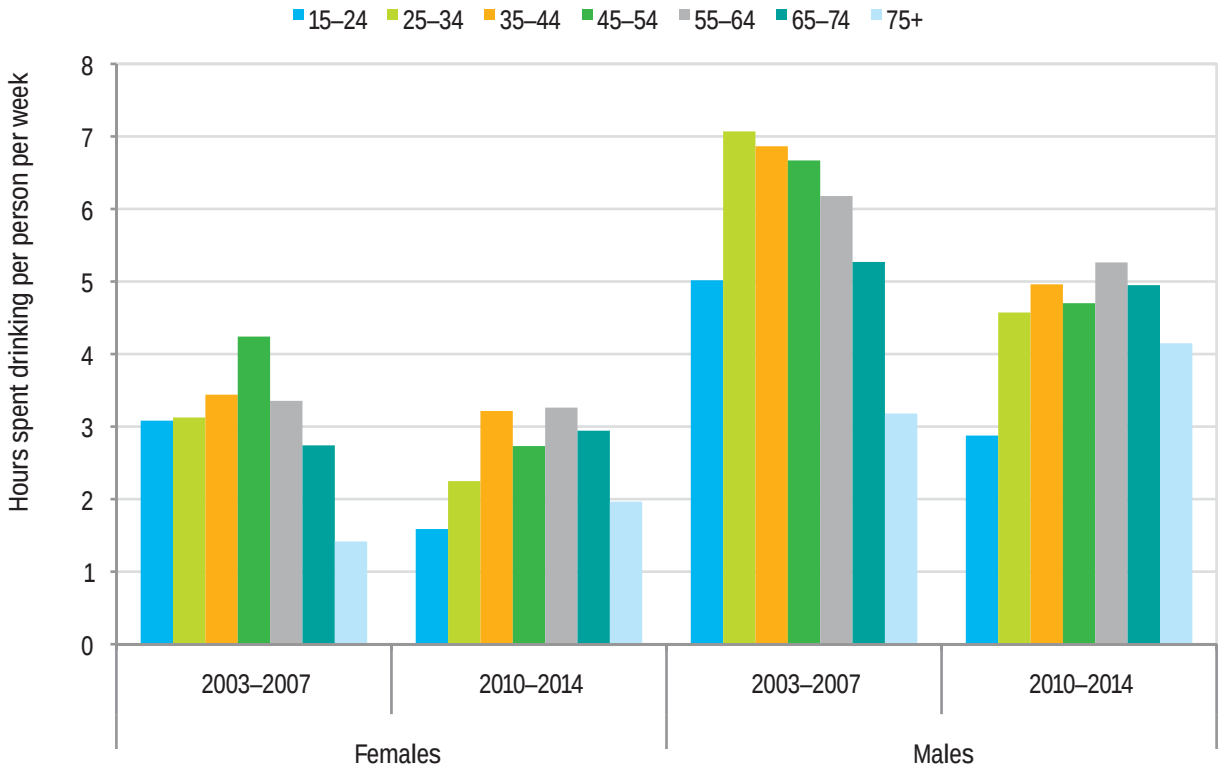
294

2014 Total road toll

This trend of younger people drinking less is observed for both males and females, but is more marked for men. Men in general tend to spend more time drinking per person per week than women (Figure 25). In 2003–2007, men spent twice as long drinking per week as women, on average. An extreme was 25–34 year olds, where men spent on average 7 hours drinking per week, whereas the women that age were only averaging around 3 hours. By 2010–2014, 25–34 year old men were spending around 4.5 hours a week drinking, and women that age just over 2 hours a week.

In contrast, older women's (75+ years old) drinking time per week has increased from 1.5 hours per week in 2003–2007 to just over 2 hours per week in 2010–2014. For 75 year old men, the time spent drinking has increased from just over 3 to just over 4 hours per week over that same period.

Figure 25: Time spent drinking (hours per person per week) by age, gender and time period (2003–2007, 2010–2014)



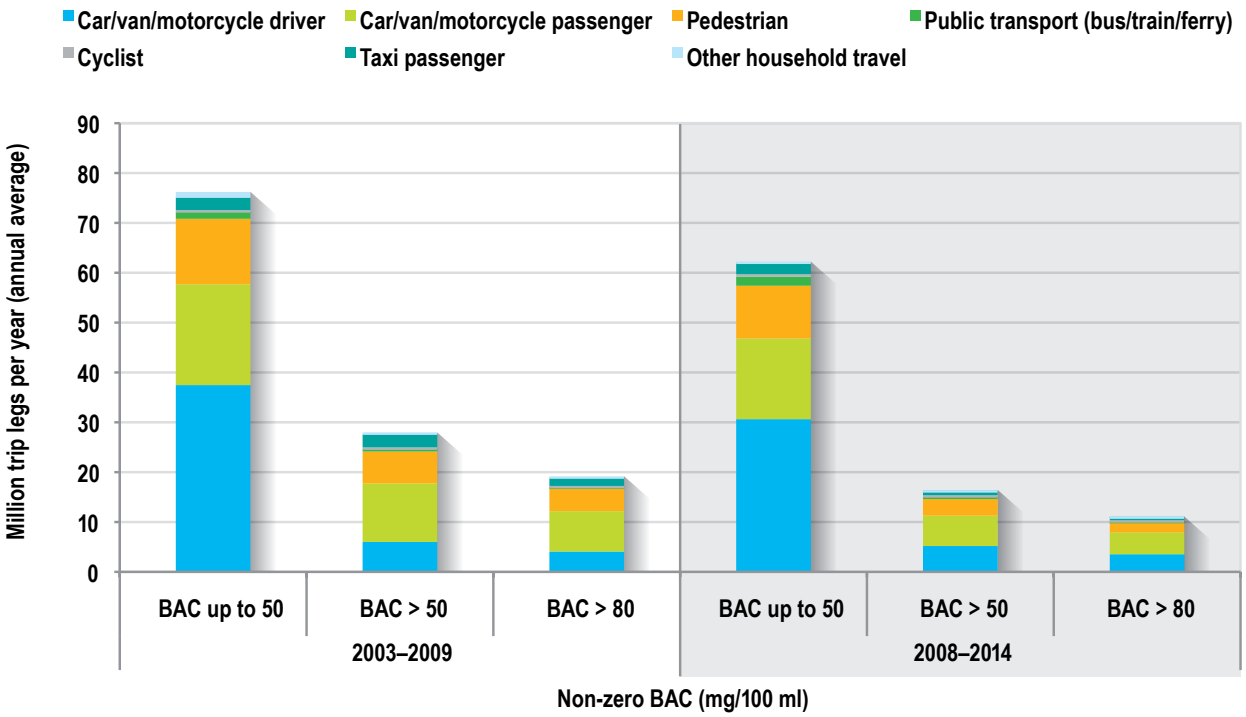
There have also been changes in the likelihood of drinking on a given day. For instance in 2003–2007, on any given day, 89 percent of 15–24 year old women didn't drink. At the other extreme, 5 percent of 15–24 year old women drank six or more standard drinks. By 2010–2014 those who didn't drink on a given day had increased to 92 percent and those who had six or more drinks had decreased to 2 percent.

A similar pattern is observed for men aged 15–24. In 2003–2007, on any given day, 83 percent of men in this age group did not drink and about 9 percent of men had six or more standard drinks. By 2010–2014, 88 percent did not drink on a given day and only 4 percent had six or more standard drinks.

For both males and females, there have been similar reductions for all the age groups under 65 years. For those aged 65 or over, the proportion that did not drink on a given day either stayed the same or decreased. Currently the age group most likely to have a drink on any given day is the 65–74 age group.

Blood alcohol concentrations (BAC) after a drinking session, and hence for any travel afterwards, can be estimated by taking the amount of alcohol reported and assuming a standard alcohol metabolism rate and average weights for men and women. Figure 26 shows estimated rates of travel with various BAC levels. This is indicative only, as we are not actually measuring it at the time and people may underreport the amounts of alcohol consumed. More details on the method used are available in McSaveney and Povey (2010).

Figure 26: Trip legs per year with non-zero BAC by mode (2003–2009, 2008–2014)



Overall, we see less travel after drinking alcohol in 2008–2014 than we did in 2003–2009.

In 2003–2009, people aged 15 years and over made about 5,200 million trip legs per year in household travel via all modes. Of these, approximately 104 million trip legs per year were started with a non-zero BAC (2.0 percent of all household travel). For nearly 28 million trip legs per year, the person had an estimated BAC of over 50mg of alcohol per 100ml of blood (0.5 percent of all household travel). For 19 million trip legs per year, the person had an estimated BAC of over 80mg of alcohol per 100ml of blood (0.4 percent of all household travel).

In comparison, between 2008 and 2014, people aged 15 years and over made about 4,950 million trip legs per year in household travel via all modes. Of these, approximately 79 million trip legs per year were started with a non-zero BAC (1.6 percent of all household travel). For about 16 million trip legs per year, the person had an estimated BAC of over 50mg of alcohol per 100ml of blood (0.3 percent of all household travel). For 11 million trip legs per year, the person had an estimated BAC of over 80mg of alcohol per 100ml of blood (0.2 percent of all household travel).

Many of these trips were not driving. Of those that were driven, about 37 million trip legs per year were done by someone with a non-zero BAC of under 50 (below the current legal limit[19] for most adults) in 2003–2009. By 2008–2014, this had decreased to about 31 million. Driven trips with a BAC of over 50 (above the current legal limit) decreased from around 6 million trip legs per year in 2003–2009 to 5 million trip legs per year in 2008–2014. This is a decrease from 0.18 percent to 0.16 percent of all driver trip legs.

If you are interested in public attitudes to road safety, especially around alcohol, and how they have changed over time, please see the Ministry of Transport Public Attitudes Survey at **www.transport.govt.nz/research/roadsafetysurveys/** for more information.

8 Cycling

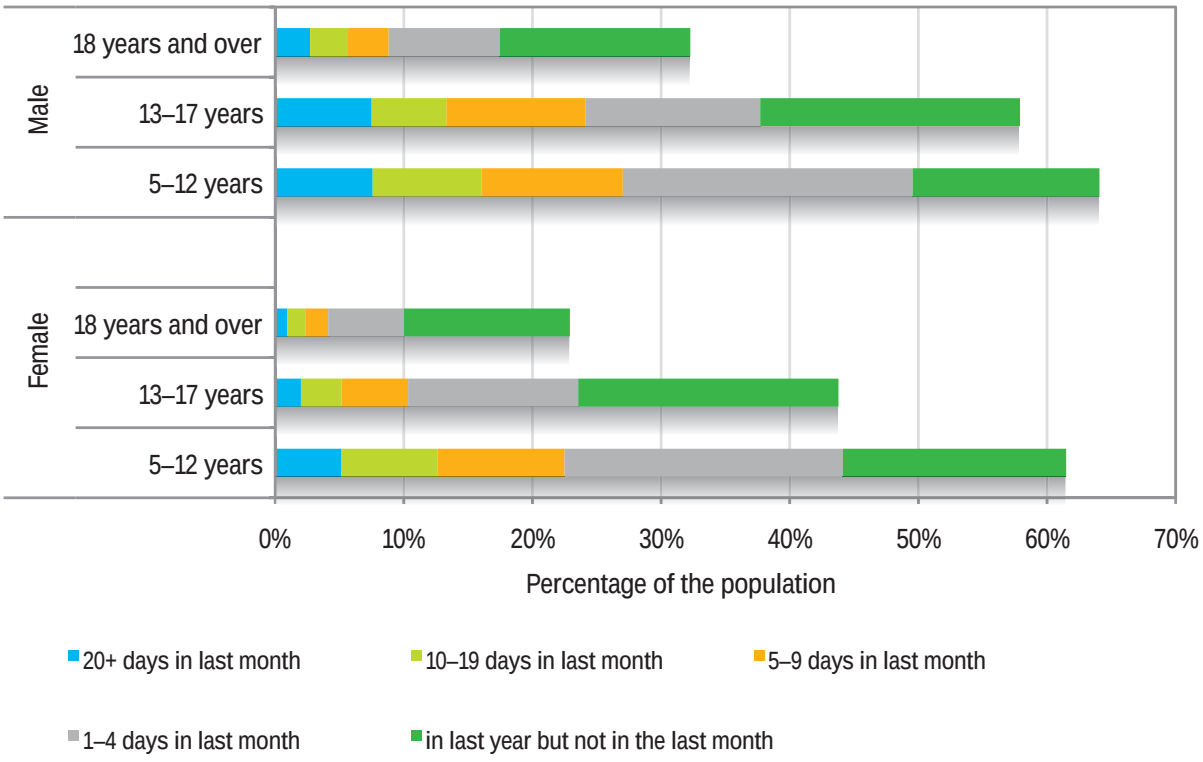
Cycling is a popular activity, both for recreation and for transport, and is enjoyed by young and old.

On average, just under half of New Zealand households have at least one bicycle in working order and this increases to over two-thirds in households with children. Twenty-five years ago, these proportions were similar, with just over half of all New Zealand households having one or more bicycles, rising to three-quarters of households with children.

It is all very well for people to have access to a bicycle, but are they using them? We can see how common it is to cycle by looking at how often people report cycling in the past year (Figure 27).

Those most likely to have cycled in the past year are children aged 5–12 years. More than three out of every five children aged 5–12 years has spent some time cycling in the past year – both boys and girls. Nearly half of all boys in this age group have cycled in the last month, with 44 percent of girls in this age group doing the same. Overall, males are more likely to have cycled in the past year than females. This is a similar pattern to that observed in 2003–2006.

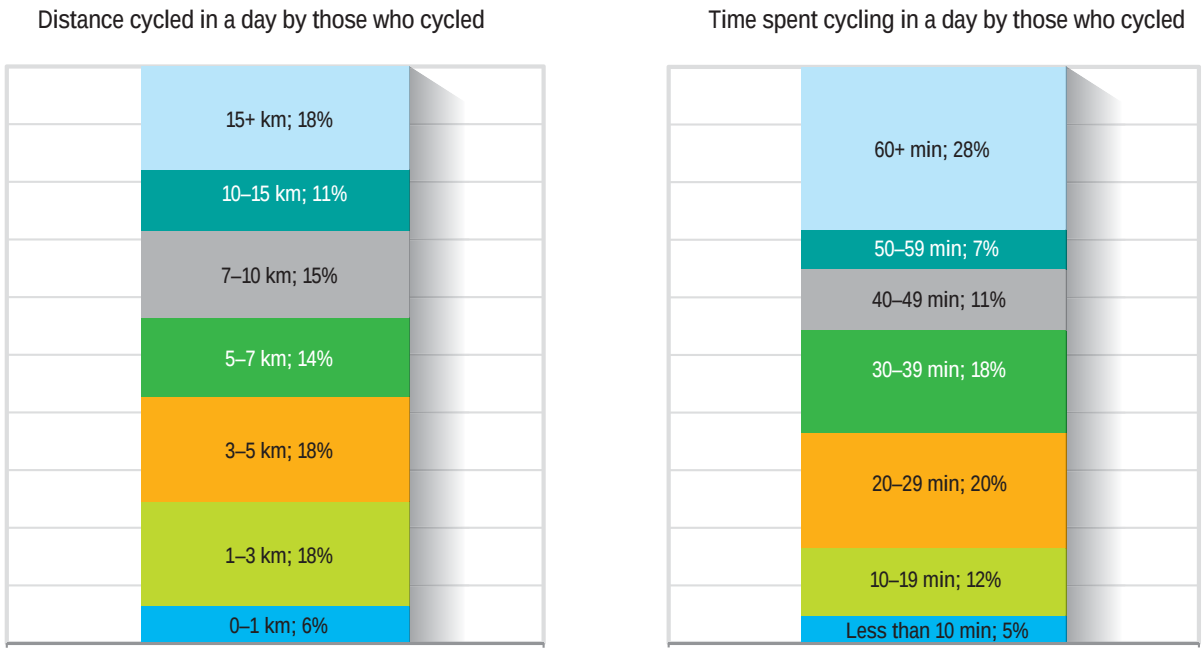
Figure 27: Percentage of population who cycled in the last year (2011–2014)



We can get more detailed information by looking at cycling travel recorded in the survey. However, because there is a lower likelihood of people cycling on a travel day, we have aggregated more years together.

Please also note this survey records cycling on the road and footpath. Off-road cycling, such as mountain biking, is not included.

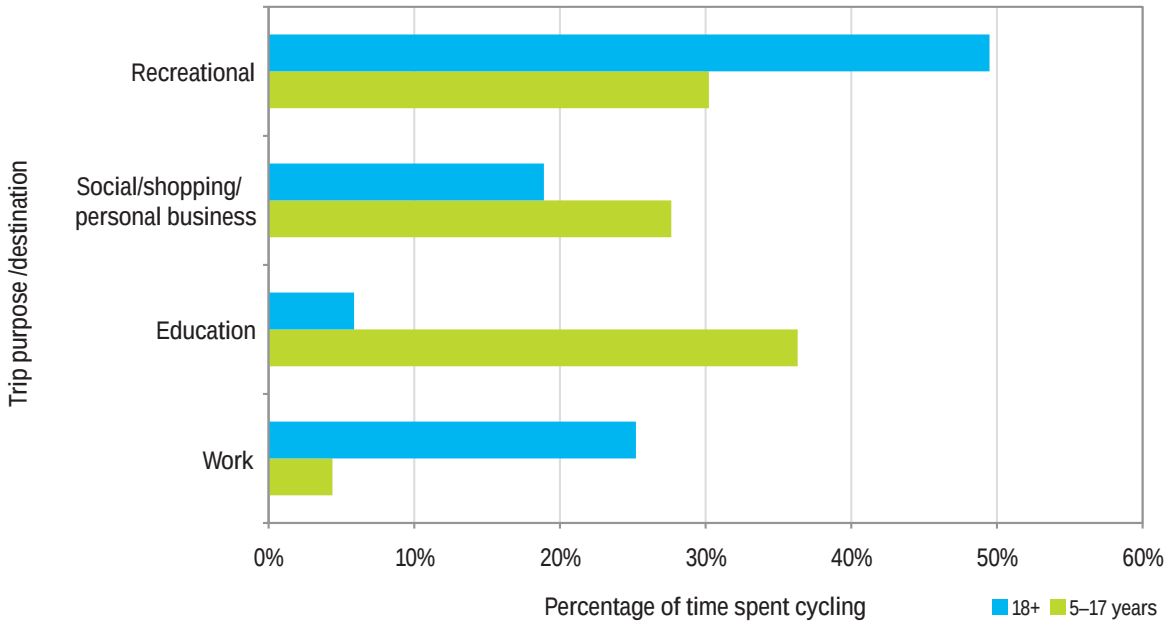
Figure 28: Distances cycled and time spent cycling in a day by those who cycled (2011–2014)



Looking at distances cycled, we can see over half of those who cycled on a given day travelled more than 5km over the course of that day (Figure 28). Sixty-three percent of those who cycled spent half an hour or more cycling, and 28 percent cycled for more than an hour through the day.

63% of those who cycled spent **30** mins or more cycling in a day

Figure 29: Percentage of time spent cycling by trip purpose/destination (2011–2014)



People cycle for different reasons at different ages (Figure 29). Adults (aged 18 years and over) are more likely to cycle for recreation (nearly half of their time spent cycling[23]) and work (about a quarter of their time spent cycling). Children (aged 5–17 years old) also cycle for recreation (about 30 percent), but over 35 percent of their time spent cycling is to get to school.

8.1 Driving and cycling

Few cyclists tend to only cycle as their main means of travel – many people who cycle drive as well.

In this survey people were asked how far they thought they had driven in the past year. About 50 percent of people aged 15 years and over have driven less than 10,000km in the past year. It is only the most frequent cyclists, those who cycled 20 or more days in the past month, who drove appreciably less than the average. About 60 percent of these frequent cyclists drove less than 10,000km in the previous year, compared to less than 45 percent for those who had cycled 5–9 days in the last month.

Cycling and the future

We have seen cycling to school decrease over the past 25 years and that young children are, on average, cycling less than they used to[24]. What we don't know is whether this will have an effect on the amount of cycling people will do in the future – will fewer children cycling lead to fewer adults cycling when they grow up?

What we can do is try to provide an environment which encourages more people to cycle. This includes initiatives such as the Urban Cycleways Fund, which is investing $100 million in improving urban cycling infrastructure. More information on this is available from **www.transport.govt.nz/cityrides**.

23 Excluding cycling home.

24 See Cyclist fact sheet 2015 www.transport.govt.nz/assets/Uploads/Research/Documents/Cycling-2015-y1012.pdf (accesed 18 September 2015) for this and more cycling trends and patterns

9 Motorcycling

Who motorcycles has been one of the larger changes over the past 25 years. Twenty-five years ago motorcycling was dominated by the young (aged 15–29 years), but now older riders (45 years and older) travel much more by motorcycle. This change is reflected in the crash statistics.

CRAIG

Craig is in his forties. He rode a motorbike in the late 1980s, when he was young and couldn't afford a car, stopped for a while once he got a car, but has recently got back into it. These days most of his motorcycling is for social or recreational reasons. He rides a more powerful motorcycle than he did in his youth and travels much more on the open road.

His nephew James also rides, but it is on a motor scooter (<50cc engine), which he uses for commuting around town to save petrol costs.

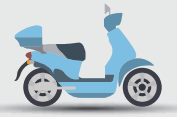
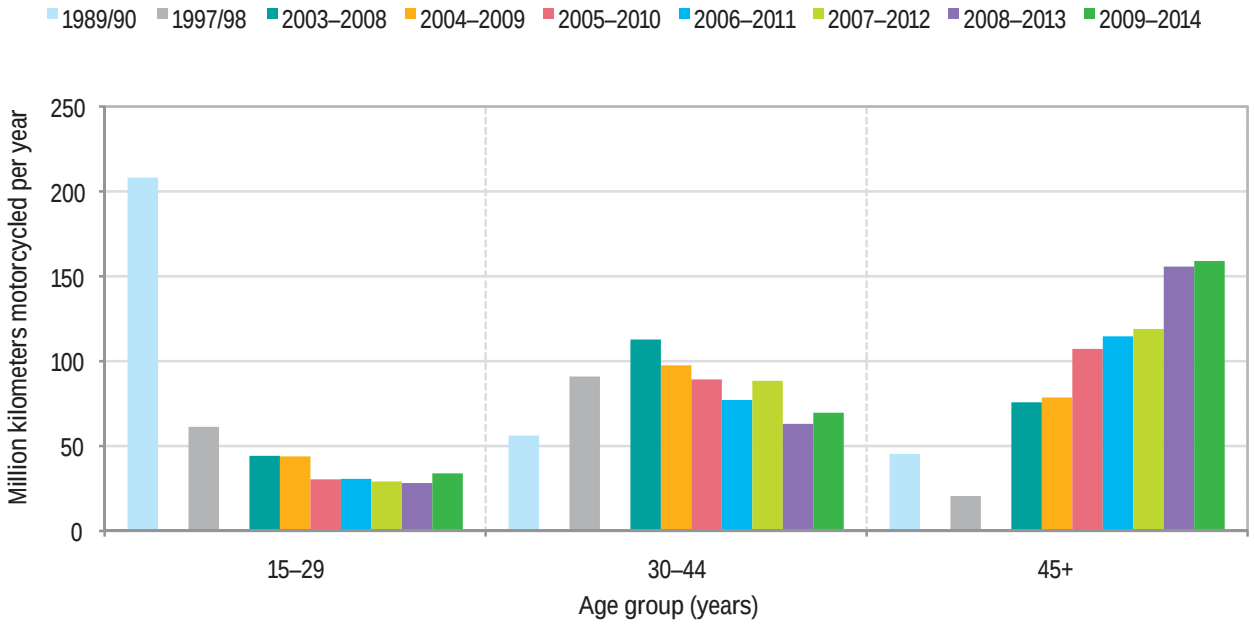


Figure 30: Million kilometres motorcycled per year



Note: This graph visually compresses the time interval between 1989/90, 1997/98 and 2003–2008.

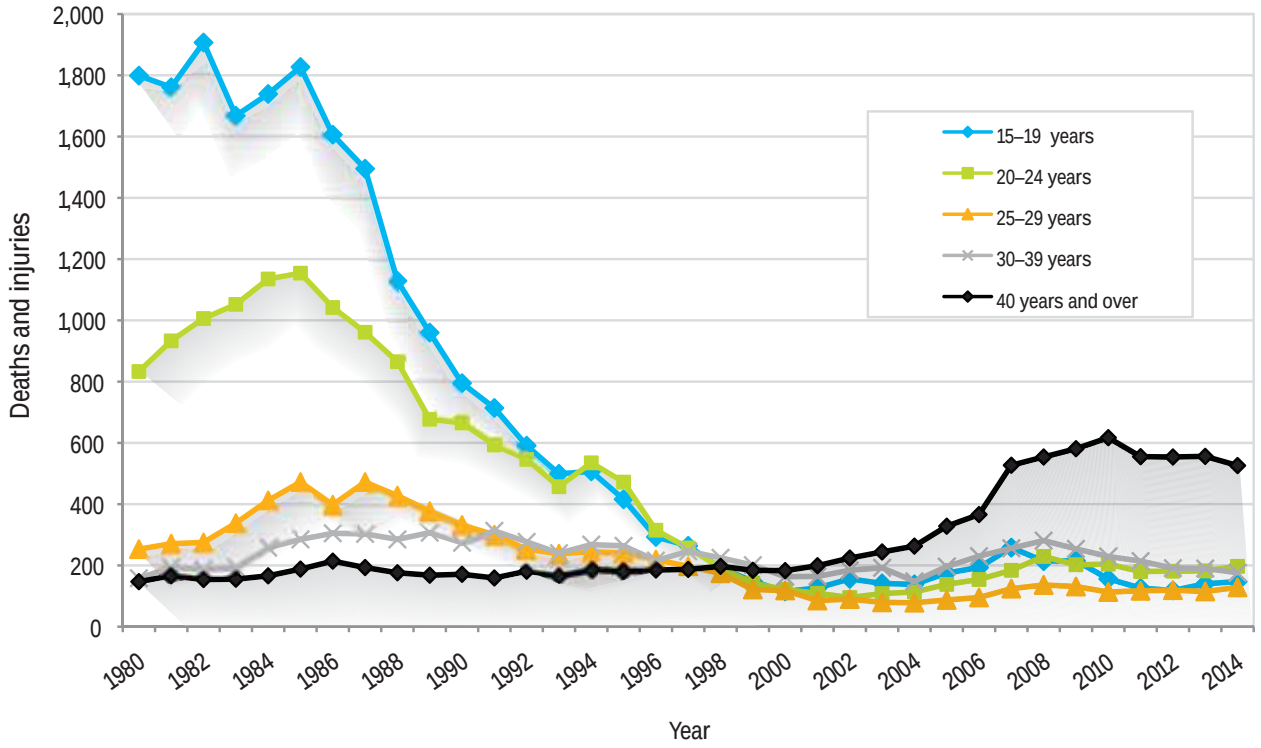
The distance ridden by different age groups has changed markedly over the past 25 years. By the late 1990s, the distance ridden by younger riders (aged 15–29 years) had dropped to nearly a quarter of that of the late 1980s. This had roughly halved again by the mid to late 2000s.

In contrast, the distance ridden by 30–44 year olds increased between 1989/90 and 2003, but has since declined.

The distance ridden by those aged 45 years and older has increased since the late 1990s (sample too small in 1989/90 for 45+ year olds to make a valid comparison).

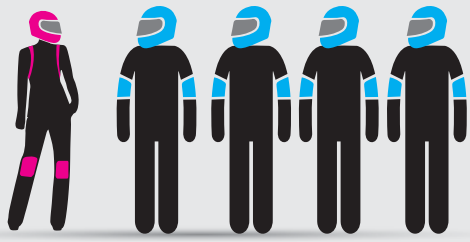
These trends are reflected in the crash statistics (Figure 31), where 15–19 year olds dominate in the 1980s, followed by 20–24 year olds. After a peak in the mid-1980s, motorcyclist casualties declined dramatically, reaching a low around the turn of the millennium. Since then, casualties in motorcyclists aged 40 years and over have increased markedly, roughly plateauing from 2007 onwards.

Figure 31: Motorcyclist deaths and injuries by age group



In 2010 – 2014

Fewer than 1 in 5 motorcyclist licence holders surveyed were female **18%**



Over the same period

Fewer than 1 in 5 motorcyclists injured on NZ roads were female **18%**

Fewer than 1 in 10 motorcyclists who died on NZ roads were female **7%**

9.1 Who motorcycles

We have several ways of looking at who motorcycles. We can look at who has a motorcycle licence, who has ridden a motorcycle in the past year, and who rides a motorcycle over the survey period. Each gives a different picture.

Looking at the most recent data, we see that between 2009 and 2014 about 440,000 people each year reported having a motorcycle licence – that is about 13 percent of the population aged 15 years and over. However, more males than females have a motorcycle licence – about 360,000 men (21 percent of the male population aged 15 and over) and around 80,000 women (about 4 percent of the female population aged 15 and over). Fewer than one in five motorcycle licence holders are women.

Back in the late 1980s, nearly one in three men had a motorcycle licence. By the late 1990s, this had declined to just over one in four men with a motorcycle licence, and by the early 2010s around one in five men had a motorcycle licence.

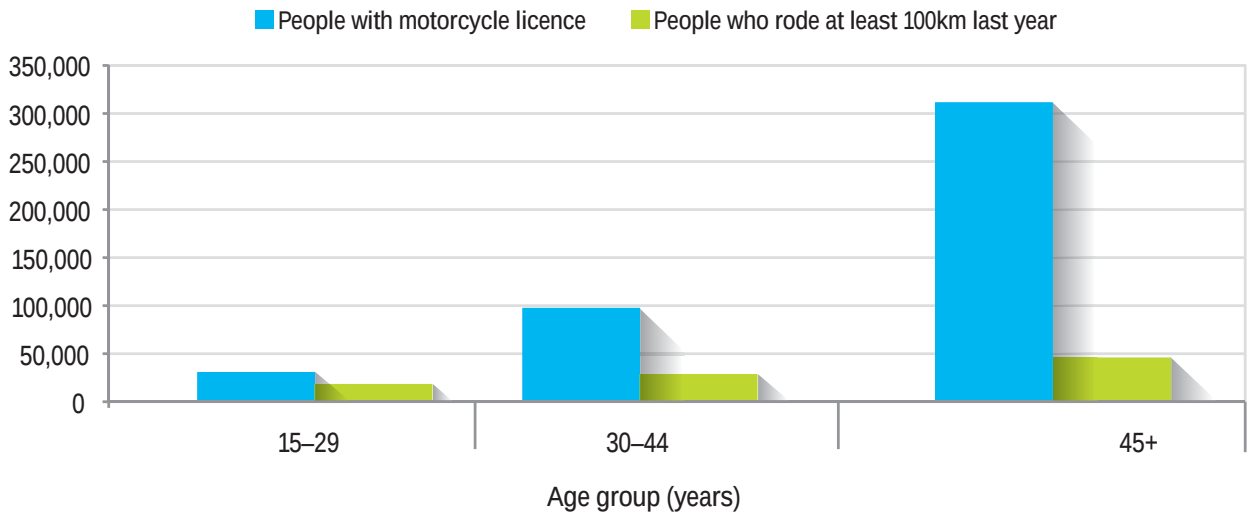
However, just because a person has a licence, it doesn't necessarily mean they have motorcycled recently.

Between 2009 and 2014, a little over 90,000 people each year reported riding a motorcycle 100km or more in the past year. This is nearly 3 percent of the population aged over 15. Again, more males than females have motorcycled more than 100km in the past year – nearly 80,000 men (almost 5 percent of the male population 15 and over) and nearly 15,000 women (less than 1 percent of the female population aged 15 and over).

Back in the late 1980s, this was higher, with nearly 10 percent of men aged 15 years and over having motorcycled 100km or more in the past year. By the late 1990s, this had declined to around 7 percent of men aged 15 years and over.

In Figure 32, we can see the difference between motorcycling in the last year and having a licence, by age group. More people have a motorcycle licence than have ridden in the past year, especially in the older age groups (30 years and over).

Figure 32: Licensed motorcyclists and people who rode last year (2009–2014)

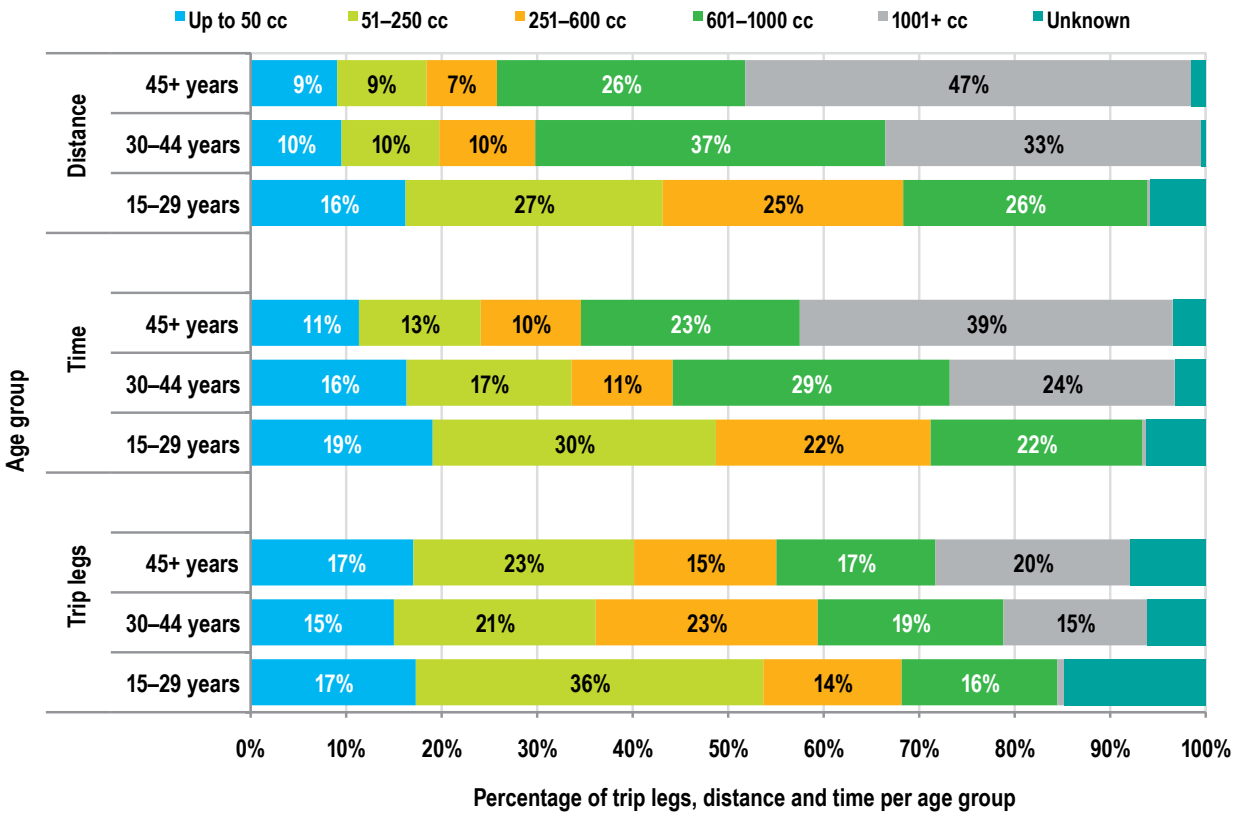


The age group differences have shifted over time.

Twenty-five years ago, about 10 percent of 15–29 year olds and about 6 percent of 30–44 year olds said they had ridden 100km or more in the past year. By 1997/98, the 15–29 year olds who had motorcycled had declined to 5 percent, the 30–44 year olds had declined to 5 percent and the 45+ year olds (now a large enough sample) were around 2 percent. By 2009–2014, only 2 percent of 15–29 year olds had motorcycled 100km or more in the past year, and 3 percent of those aged 30–44 years and 45+ years had done the same.

Very few people who have ridden in the past year have a motorcycle licence only (2 percent), with nearly three-quarters having a car licence as well. Nearly a quarter have only a car licence but ride a motor scooter, which requires only a car licence to operate.

Figure 33: Percentage of trip legs, distance and time per age group by vehicle cc rating (2009–2014)

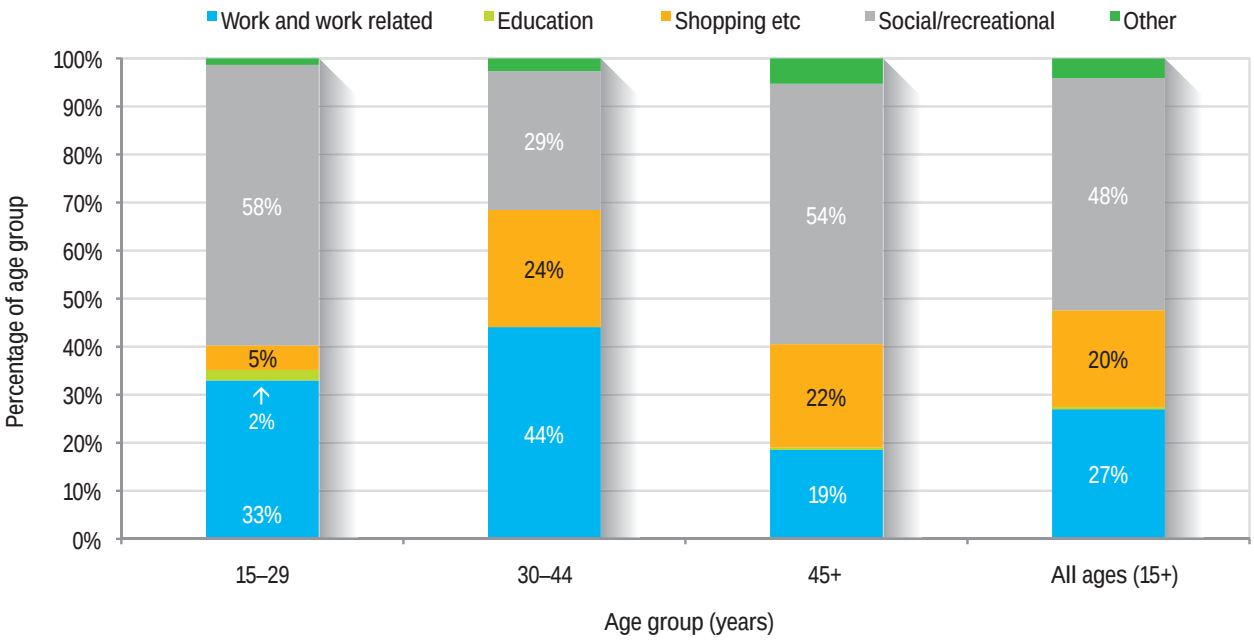


9.2 How are motorcycles used?

Young people (15–29 years old) tend to ride lower-powered motorcycles than older people. This is partially because of the limit on the power of motorcycle engine with learner and restricted licences (see **www.nzta.govt.nz/licence/** for details). In all, about two-thirds of the distance travelled by 15–29 year olds on motorcycles is on bikes with an engine size of 600cc or less (Figure 33). This compares to nearly three-quarters of the distance travelled by 45+ year olds being on motorcycles with an engine size of over 600cc, with nearly half their distance travelled being on bikes of over 1,000cc.

There is a similar pattern for time spent motorcycling. However, the majority of trip legs (well over half) are on bikes with lower-capacity engines, indicating that the larger-capacity engines are used for longer trips, often on the open road (see Figure 33).

Figure 34: Percentage of distance motorcycled by purpose and age (2009–2014)



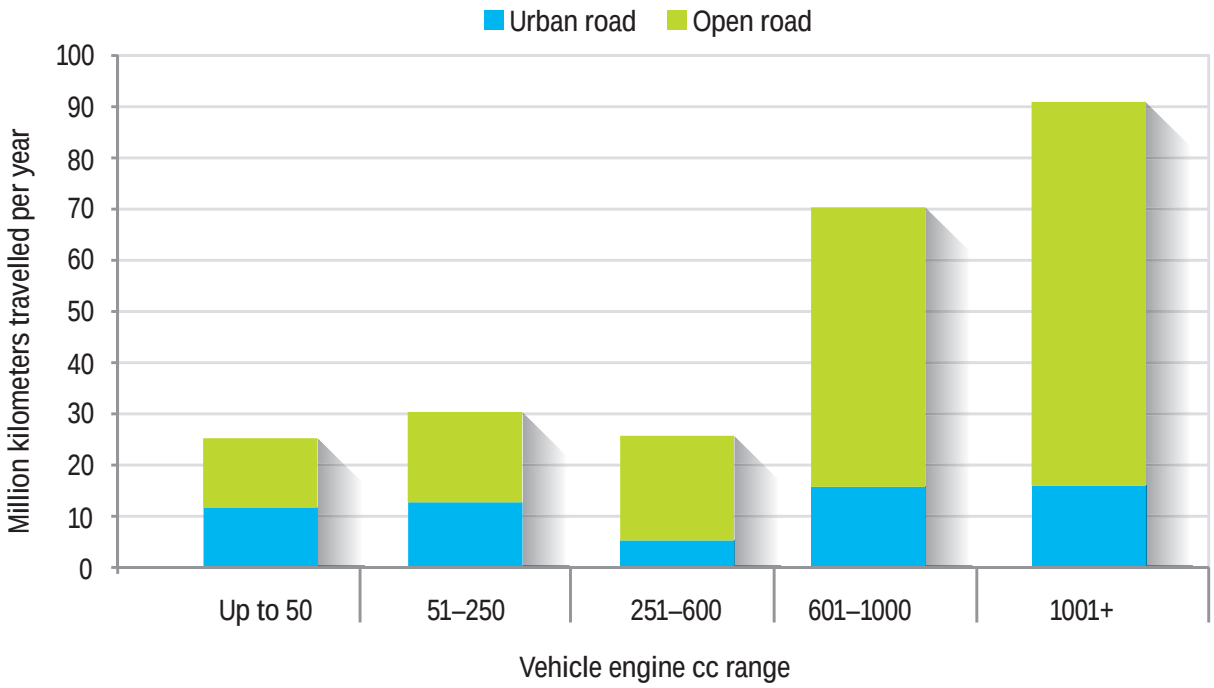
The most common reason for motorcycle travel[25] is social/recreational trips (Figure 34). Travel for social/recreational purposes accounts for nearly half of all the distance ridden and well over half for younger (15–29 years) and older (45+ years) riders.

For riders aged between 30 and 44 years, getting to work and work-related trips are the most common, accounting for over 40 percent of the distance ridden by this age group. For all age groups, work and work-related trips account for just over a quarter of the distance ridden.

Motorcycling on the open road (speed limit of over 70km per hour) is generally associated with larger engine size motorcycles and older riders (Figures 35 and 36).

25 Excluding travel home.

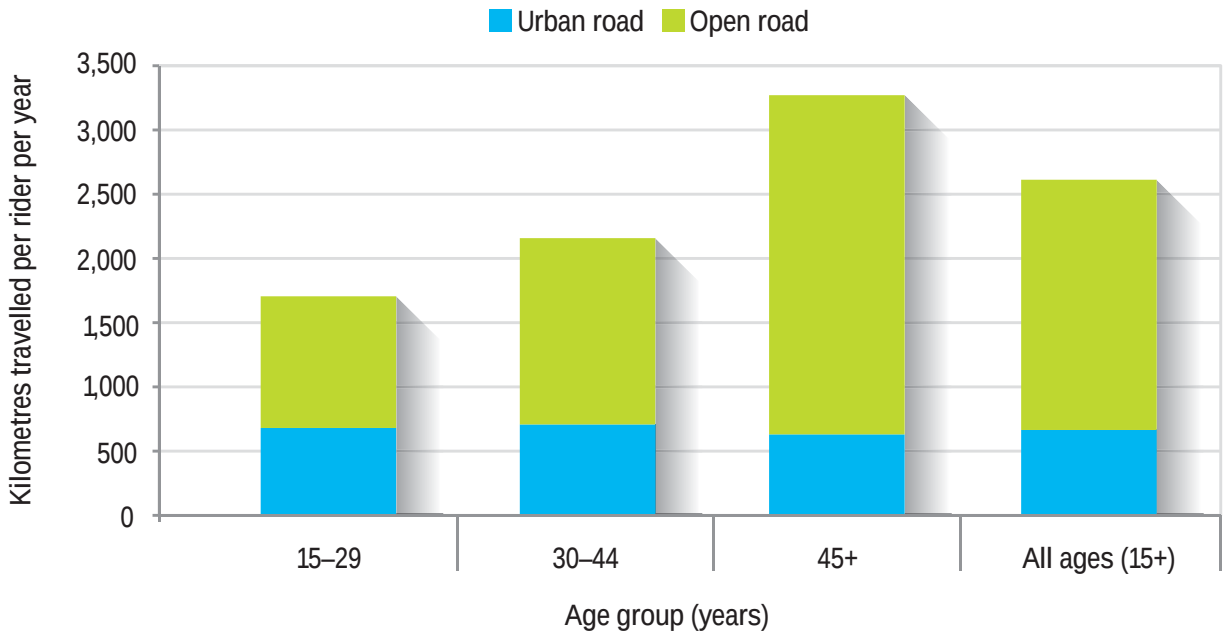
Figure 35: Motorcyclist distance travelled per year by road type and engine cc (2009–2014)



About 80 percent of the distance ridden on bikes over 250cc is on the open road. This compares to 56 percent for smaller bikes. Overall, 75 percent of the distance ridden on the open road, but only 51 percent of the distance ridden on urban roads, is on bikes of over 600cc.

Riders aged 45 years and over travel further than other riders. About 81 percent of the distance they travel is on the open road, compared to 67 percent for 30–44 year olds and 60 percent for younger (15–29 years) riders. Urban road distances travelled tend to be similar for all ages.

Figure 36: Distance travelled per rider per year by age group and road type (2009–2014)



Note: Riders are defined as those who have motorcycled more than 100km in the past year.

10 Public transport

Public transport can play an important role in getting around for those who use it, especially in regular day-to-day commutes. Public transport use depends on age and especially location – people can't use a transport mode if they are in a place where it isn't available.

In this context, when thinking about public transport, we are thinking about local trips (generally less than an hour or 100km) by bus, train or ferry.

Urban people are far more likely than rural people to have used public transport in the past year. Some urban areas have more people who use public transport than others. Of the cities in the table below, only in the Wellington urban area[26] have more than half the population used public transport in the past year. Nearly two-thirds of Wellington people have used public transport in the past year, compared to just under half of the people in Auckland, over a third of people in Christchurch and Dunedin, and less than 30 percent of people in Hamilton. Looking at those who commute regularly by public transport (20 or more days in the past month), Wellington and Auckland both have around 10 percent of their population doing so, whereas in Hamilton, Christchurch and Dunedin, only around 2–3 percent do so.

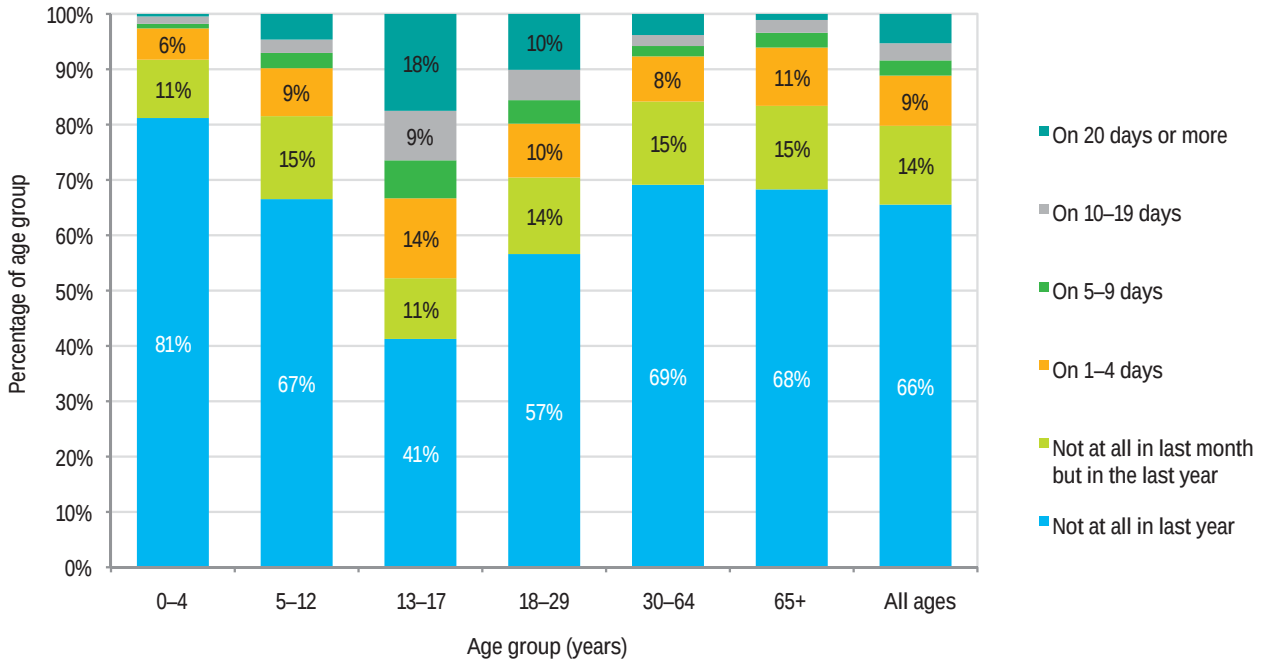
Public transport usage in the past year by urban area (2011–2014)

	Urban area					
	Auckland	Hamilton	Wellington[26]	Christchurch	Dunedin	National
People sampled	*4,892*	*1,213*	*1,864*	*3,697*	*959*	*24,851*
Used public transport...						
Not at all in last year	52%	71%	34%	63%	61%	66%
Not at all in last month but in the last year	17%	13%	25%	17%	18%	14%
On 1–4 days	12%	9%	19%	10%	11%	9%
On 5–9 days	4%	3%	5%	3%	4%	3%
On 10–19 days	4%	2%	7%	4%	4%	3%
On 20 days or more	10%	2%	10%	3%	2%	5%
In the last year	**48%**	**29%**	**66%**	**37%**	**39%**	**34%**
Total	100%	100%	100%	100%	100%	100%

26 Including Wellington, the Hutt Valley, Porirua and Kapiti.

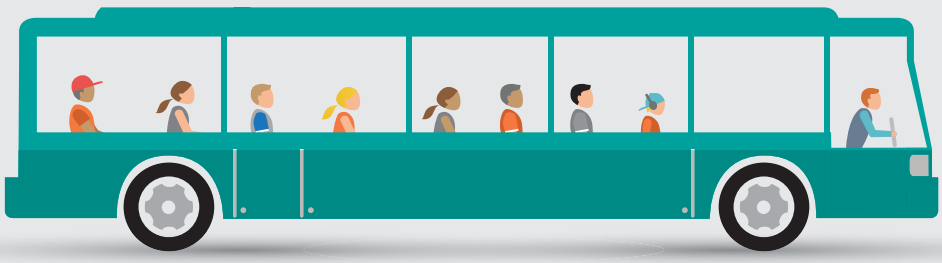
Those most likely to have used public transport in the past year (Figure 37) are those aged 13–17 years (that is, secondary school-aged children). Eighteen percent of them are using it 20 or more days a month, meaning it is probably their main way of travelling to school.

Figure 37: Public transport usage in the past year by age group (2011–2014)



Who uses public transport the most?

18% of 13–17 year olds (that is, secondary school-aged children) use public transport on 20 or more days a month



People who used public transport in the past year are more likely to spend more time walking (Figure 38). Those who regularly commute using public transport are also more likely to walk on a given day, with about half walking for more than 10 minutes per day. Those who haven't used public transport in the past year are also least likely to walk on a given day, with nearly 85 percent not walking.

People with no vehicle in the household are also most likely to have used public transport in the past year – 60 percent of those with no household vehicle have used public transport in the past year, compared to less than 40 percent of those in households with one or more household vehicles (Figure 39).

Figure 38: Time spent walking per day by frequency of public transport use (2011–2014)

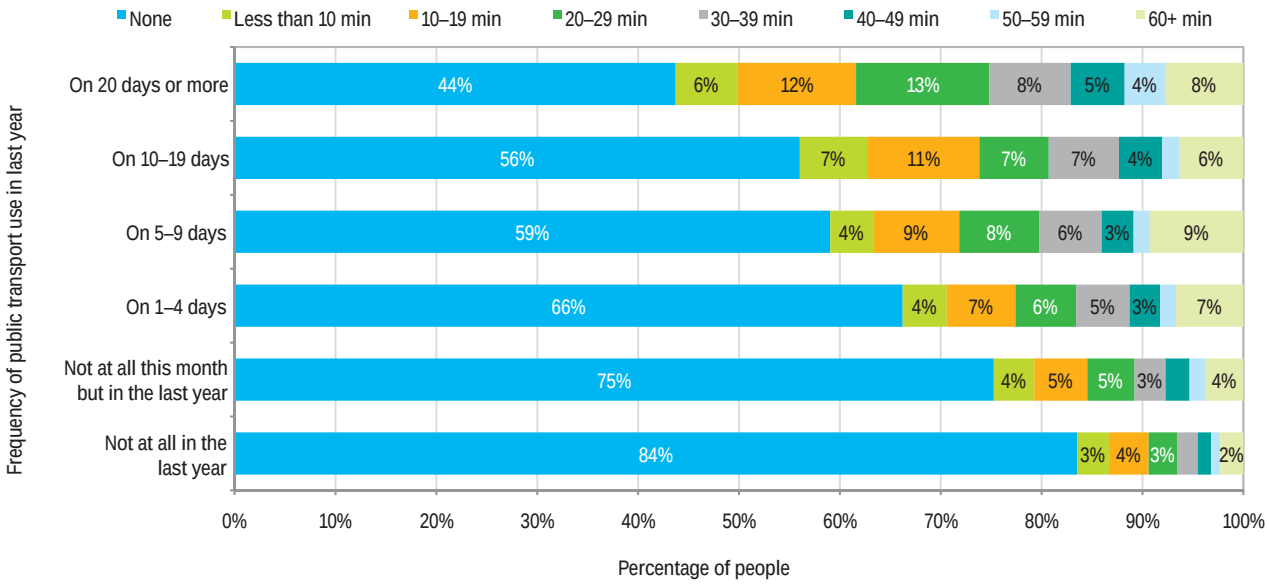
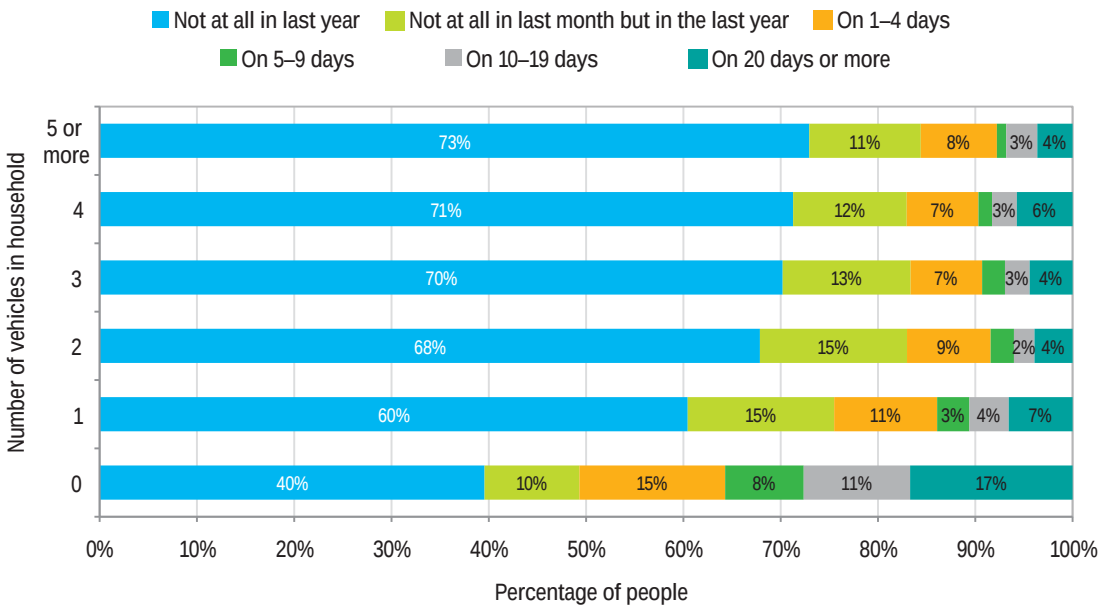
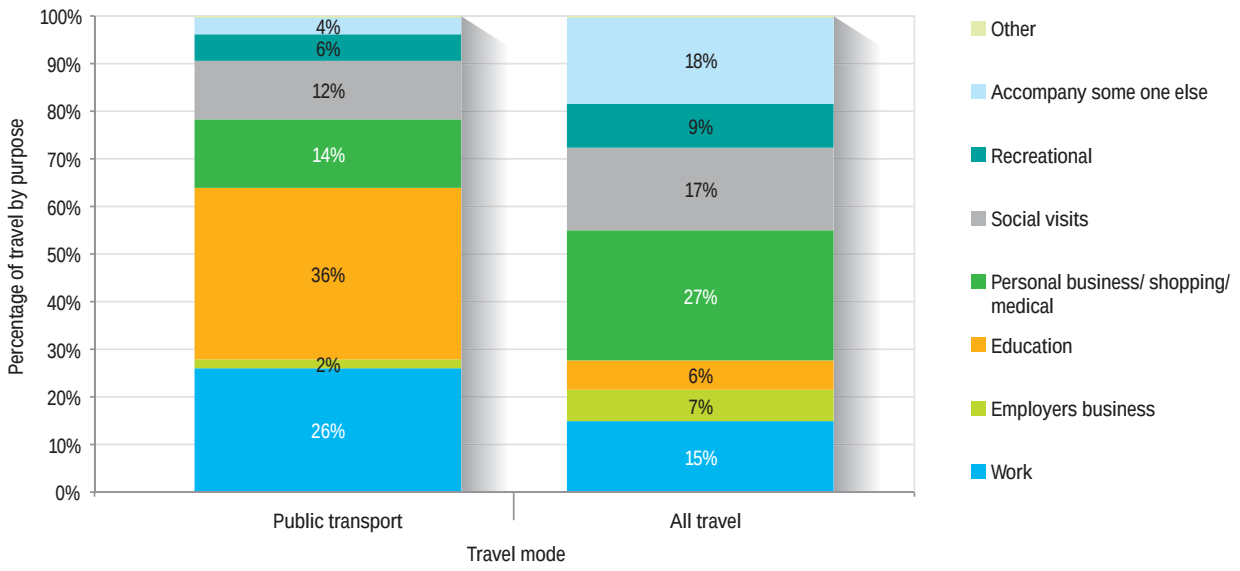


Figure 39: Frequency of public transport use by number of vehicles in household (2011–2014)



People tend to use public transport to travel for quite different reasons compared to their average travel (Figure 40). If we look at the purpose of travel by public transport, we see that 36 percent of trip legs are for education, whereas education trips make up only 6 percent of all travel[27]. Travel to work also makes up 26 percent of public transport trip legs[28], whereas it makes up 15 percent of trip legs overall. Only 14 percent of trip legs by public transport are for personal business, such as shopping, whereas shopping/personal business makes up over a quarter of trip legs overall.

Figure 40: Percentage of travel by purpose when using public transport compared to all travel (2011–2014)



Walking and public transport (2011–2014)

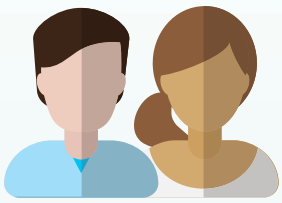
Those who regularly commute using public transport are also more likely to walk on a given day.

Did you know? The Ministry of Health recommends at least 30 minutes of moderate intensity physical activity on most if not all days of the week.
www.health.govt.nz/our-work/preventative-health-wellness/physical-activity

27 Excluding travel home.
28 Excluding travel home.

11 Across New Zealand

11.1 A tale of two cities: Auckland and Wellington (2009–2014)



AUCKLAND

Michael and Mele and their children are a typical[29] Auckland family.

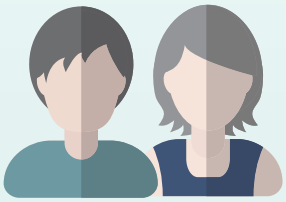
Michael takes about 20 minutes to drive to work, driving around 9km. His neighbour Amit commutes to work using public transport, but it is not that common. On his street of 100 houses, only about nine men use public transport more than 10 times a month.

Michael and Mele generally do their shopping close by, travelling around 3km or less and within a 10 minute drive for about half their trips.

Michael spends nearly 9 hours per week travelling, with over an hour and a half of that being to work. Another hour each week is spent travelling for shopping and personal business.

Mele spends about 7.5 hours per week travelling. Nearly an hour and a quarter of this is for transporting other people, such as dropping the kids off at school or picking them up from friends' homes. She spends a similar amount of time travelling for shopping or personal business, and about 50 minutes per week travelling to work.

Michael and Mele's children are less likely than Craig and Kim's children to have used public transport in the past year, with nearly 60 percent of children like them not having used it in the past year. However, 11 percent use it regularly, on 20 or more days in the last month.



WELLINGTON

Craig and Kim and their children are a typical Wellington[30] family[31].

Craig takes about 15 minutes to get to work, driving around 7.5km. In Wellington, it is a bit more common to commute to work using public transport, and on his street of 100 houses about 17 men use public transport more than 10 times a month.

Craig's shopping trips tend to be slightly further afield, travelling about 3.5km or less (within a 10 minute drive) for half of them. Kim tends to shop closer, travelling about 2.5km or less and only travelling for around 8 minutes or less for half her shopping trips.

Craig spends 10 hours a week travelling, with an hour and a half of that being to work. Nearly an hour and a quarter each week is spent travelling for shopping and personal business.

Kim spends nearly 8.5 hours per week travelling. Over an hour and 20 minutes of this is for transporting other people, such as dropping the kids off at school or picking them up from friends' homes. She spends a similar amount of time travelling for shopping or personal business, and about an hour a week travelling to work.

Craig and Kim's children are reasonably likely to have used public transport in the last year. A quarter of children like them have not used public transport in the last month, but have used it in the last year. Another quarter have used public transport 1–4 times in the past month. Around 7 percent used public transport, on 20 or more days in the last month.

29 Approximately 50 percent of the Auckland urban area population live in a household with children (age <18 years old), where at least one adult is aged 20–54 years.
30 Includes Wellington, the Hutt Valley, Porirua and Kapiti.
31 Approximately 45 percent of the Wellington area population live in a household with children (age <18 years old), where at least one adult is aged 20–54 years.

11.2 Town and country: urban/rural differences (2009–2014)

We have looked at the sorts of differences we see between Auckland and Wellington, but what about more basic breakdowns such as the difference in travel for urban and rural people?

Here we will look at an urban (town) and a rural (country) couple, this time each with no children, and see what their travel is like.

TOWN

John and Liz each spend a reasonable amount of their time travelling – John spends about 9 hours a week travelling and Liz about 8.5. For John, a little under three-quarters of that time is spent driving, whereas for Liz it is about half her travel time.

Travel to work and personal business/shopping dominate John's travel, each taking about an hour and 20 minutes per week. Liz averages about an hour and a half per week for shopping and personal business, with an additional hour a week each for social visits/entertainment and getting to work. Neither are that likely to have used public transport or cycled in the past year (about 40 percent or less probability of use for people like them).

About half of John's trips are around 4km or less. He tends to travel furthest on employer's business – about half of those trips are 6km or more.

Liz's trips tend to be closer – about half her trips are around 3km or less. Personal business/shopping and recreational trips tend to be shortest, with more than half of those being under 2.5km.

COUNTRY

Wiremu and Moana don't spend that much of their time travelling – Wiremu averages about 2 hours 20 minutes a week travelling and Moana nearly 2 hours and 40 minutes. For Wiremu, 80 percent of that time is spent driving, whereas for Moana it is a little over half her travel time.

Personal business/shopping (averaging about 22 min per week) followed by employer's business (18 minutes) and social visits (18 minutes) are Wiremu's main travel, with travel to work averaging only about 15 minutes per week, but he has the advantage of working close to home. Moana averages about half an hour a week for shopping and personal business, with an additional 21 minutes per week for social visits and entertainment, and 19 minutes for getting to work.

Wiremu and Moana are less likely to have used public transport than John and Liz (less than 15 percent of people like them used it in the last year), but have a similar probability of having cycled in the past year (around 30–40 percent).

Wiremu and Moana's trips tend to be further than John and Liz's. Nearly half of Wiremu's trips are more than 6km. Half his work trips are nearly 8km.

Moana tends to stay a little closer to home, but still travels further in each trip than Liz, with more than half her trips being over 4km. She also travels further to work – just under half her work trips are more than 6km.

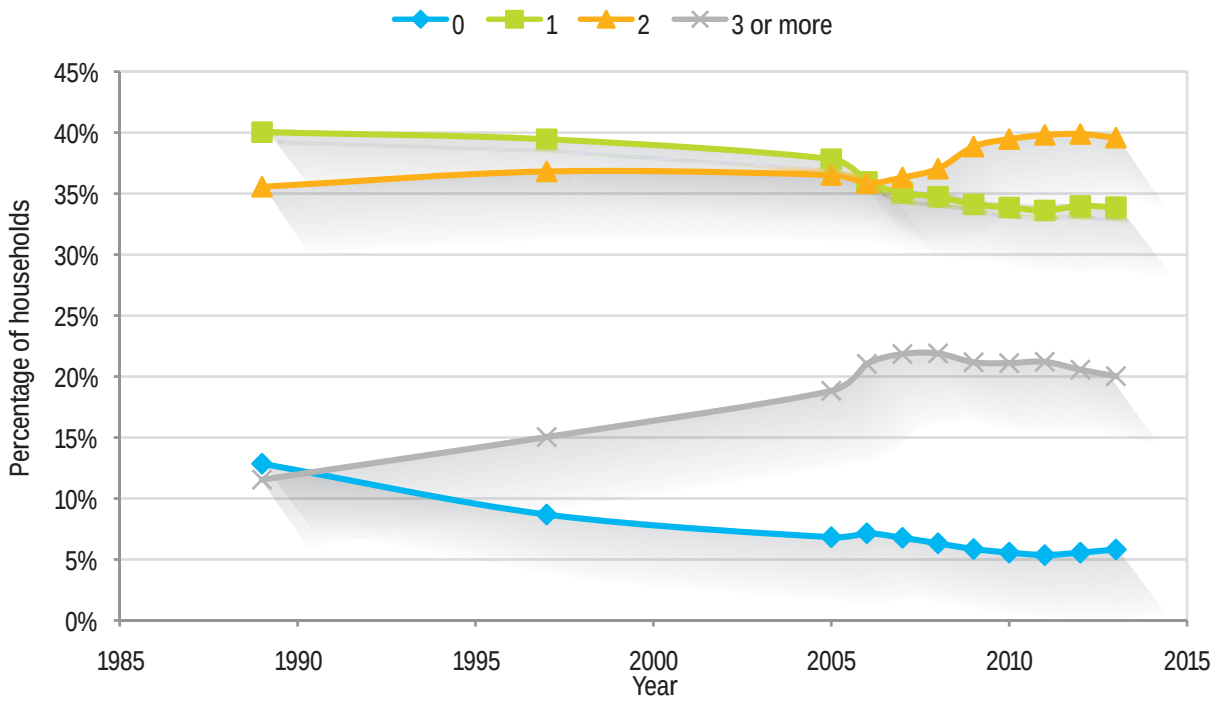
12 Household vehicles

12.1 We have more of them

Not only has the way people travel changed over the past 25 years, but the number of vehicles in a household has also changed.

About three-quarters of households have either one or two cars[32] (Figure 41). In the late 1980s, 40 percent of households had one car and just over 35 percent of households had two. By 2011–2014, this had switched and 40 percent of households had two cars, while 34 percent had one car.

Figure 41: Number of household vehicles



Note: After 2004 data points are based on the average of 3 years of data per point.

The number of households with no car has declined steadily over the past 25 years. About 13 percent of households did not have a car in the late 1980s. By 2011–2014, only 6 percent of households did not have a car.

Over the same time period, the percentage of households with three or more cars has increased from 12 percent to about 20 percent.

The average number of cars in a household was 1.50 in 1989/90. This increased to 1.64 in 1997/98 and reached a peak of 1.88 cars per household around 2008–2012, but has since declined slightly to an average of 1.84 cars per household.

This trend is confirmed by the New Zealand Census, which also asks about the number of household vehicles. More information on this is available from Statistics New Zealand.

32 Here car is used as a synonym for light four-wheeled vehicle. This includes cars, vans, station wagons and SUVs.

A variety of things can affect the number of vehicles in a household. One is the structure of the household. The New Zealand Household Travel Survey looks at the household type, and over the course of the survey we can see changes (Figure 42).

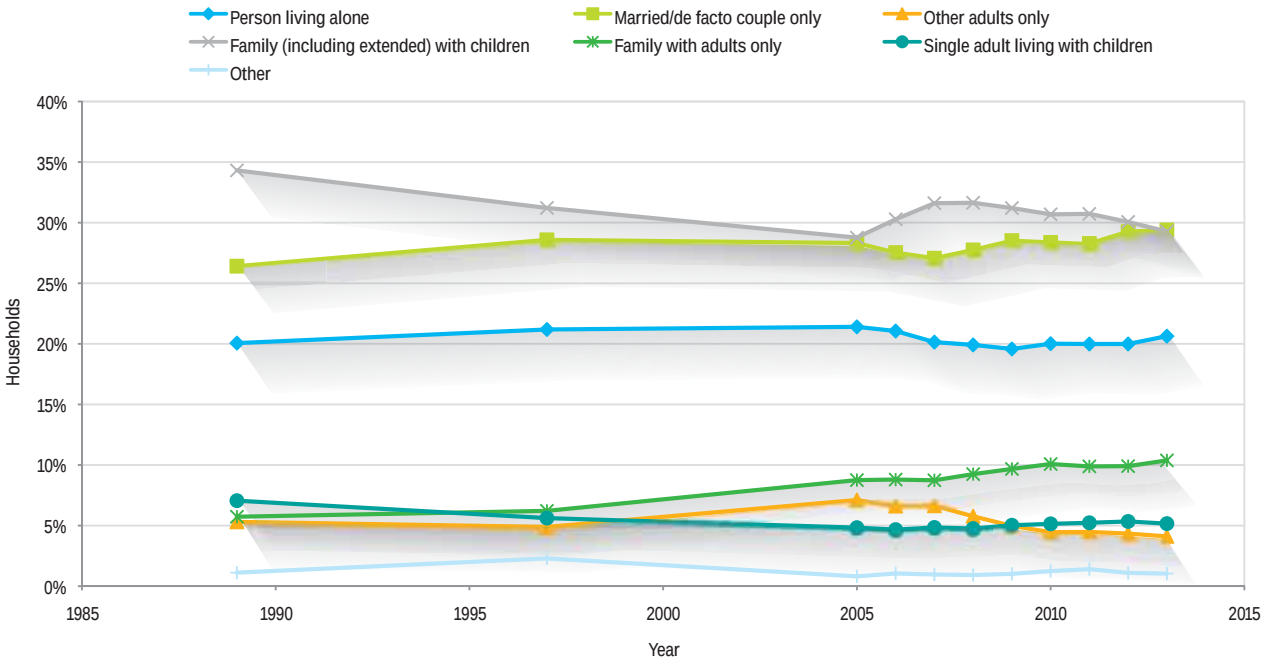
A major change over the past 25 years has been a decrease in the percentage of households with children.

In the late 1980s, families with children (34 percent) and single adults with children (7 percent) made up about 41 percent of all households. By 2011–2014, this had dropped to about 34 percent.

There has been an increase in households made up of couples and families with adults only. Married/de facto couples made up 26 percent of the households surveyed in the late 1980s and this increased to 29 percent by 2011–2014.

Over the same period, the proportion of households with families with adults only has increased from 6 percent to 10 percent. Over the past decade, the proportion of other adults living together (for example, flatting) has decreased.

Figure 42: Proportion of households by household type



Note: After 2004 data points are based on the average of 3 years of data per point.

12.2 How old are our cars?

In 2014, the average age of a vehicle in the New Zealand light passenger vehicle fleet was 14.3 years[33]. This has increased in the past few years. Between 2000 (when these fleet statistics time series began) and 2008, it was less than 13 years.

More detailed information on the age of the New Zealand vehicle fleet and associated trends is available from the annual fleet statistics: **www.transport.govt.nz/research/newzealandvehicle**.

Younger people tend to spend more time in older vehicles and older people tend to spend more time in newer vehicles. Men tend to spend more time in newer vehicles than women, but that may be affected by the fact that men tend to spend more time in company vehicles, which are usually newer.

ANIKA

Anika is a young student at university. About half her time in cars is spent in vehicles that are at least 15 years old and for about half of that time she is the driver. She has a cheap, old car that she got from a family friend when they got something smaller and more economical. It goes (mostly), but the repairs are starting to get a bit expensive and it goes through a lot of petrol. When the timing of classes is right, to save money she catches a ride in with a flatmate who has a slightly newer car.

MARGARET

Before they retired recently, Margaret and Ian got a new car. With just the two of them to shift around, it seemed worth getting a quite young vehicle (5–9 years old) – they wanted something that would be as fuel efficient and cheap to run as possible and that would last them for quite a while. Also, when he retired Ian lost the use of the company car (a style of vehicle he quite liked), so it made sense to upgrade to a similar model.

33 2014 New Zealand Vehicle Fleet Annual Statistics www.transport.govt.nz/assets/Uploads/Research/Documents/NZ-Vehicle-Fleet-2014-final.pdf (accessed 1 October 2015).

12.3 Parking

It is all very well to look at when and how people travel, but once you have driven to a destination, there is the eternal question of where to park. This becomes even more important when you look at emergent technologies such as plug-in electric vehicles – do people have parking where they can plug in a vehicle to charge?

For each driver trip in the Travel Survey, the driver is asked where he or she parked the vehicle. The responses are coded into the following categories:

i] **Off-street – resident's property:**
includes the driver's garage or residential property, or someone else's residential property (for example, Mum's driveway).

ii] **Off-street – private:**
applies to parking provided for specific individuals, for example employee car parks, visitor car parks on business premises, and loading bays, and to car parking buildings where payment is required. Any park where the driver needs to provide the registration number to someone, or display a special card or ticket to avoid being towed away, is private.

iii] **Off-street – public:**
includes covered and open-lot car parks where a special ticket is not needed, such as supermarket car parks, public transport interchanges, mall parking.

iv] **On-street – time limit:**
metered parking, pay and display, free parking with a time limit.

v] **On-street – no time limit:**
any place or time when no time limit applies, including metered parks outside the payment hours, on-road residents' parking.

vi] **Not parked:**
used where the stop is just to drop someone off (the driver stays in the vehicle) or to buy petrol.

Overall, about 92 percent of vehicles are parked on the resident's property overnight (after the last recorded vehicle trip of the day). Looking at a selection of urban areas[34], we see Auckland and Tauranga have the highest proportion of vehicles parked on the resident's property (94 percent), while Dunedin has the lowest (82 percent). However, Dunedin has the highest rate of vehicles being parked overnight on-street with no time limit (10 percent), followed by Wellington (7 percent). This compares to 3 percent nationally.

Just over 80 percent of stops after travelling to work are parking in private off-street parking. This has increased from around 70 percent in the late 1980s. In the late 1980s, the second most common place to park for work was on-street parking with no time limit (14 percent), but this had declined to 8 percent by 2011–2014.

Overall, parking on the street with no time limits has declined compared to other parking areas. In the late 1980s, it was nearly 20 percent of all stops where people parked, but by 2011–2014 it had fallen to 11 percent of all stops. Private off-street parking increased from 22 percent in the late 1980s to 27 percent in 2003–2005, and has since held steady.

More information is available in the Parking fact sheet: **www.transport.govt.nz/research/travelsurvey/**.

34 Auckland, Hamilton, Tauranga, Wellington (including the Hutt Valley, Porirua and Kapiti), Christchurch and Dunedin.

13 Where to from here?

The past 25 years have seen changes not only in travel, but also in technology. The next generation of the New Zealand Household Travel Survey will take advantage of those developments, both from the surveying perspective and from the data access perspective.

June 2014 saw the last 2-day surveying for the New Zealand Household Travel Survey, rounding off 11 years of continuous data. It also gave the opportunity to step back and look at what we want to get from a household travel survey and how advances in technology could allow us to get that information more efficiently and effectively.

Between 2003 and 2014, the Household Travel Survey shifted from collecting information by using an interviewer with a pen and a paper form to the interviewer directly entering the information into a laptop. The next version of the Household Travel Survey (already in progress) will see it shift to an online form with the option of GPS units recording when and where people have travelled. Using the GPS units reduces respondent burden and means we can extend the survey from 2 days (a reasonable length of time for people to remember when interviewed about it a few days later) to 7 days, with GPS information-prompted recall at the end of each day or every few days. This gives us a chance to understand better how people's travel changes through the week, rather than how it differs from someone else's weekend.

The way people can access Travel Survey data has also changed over the past 25 years. Where once you might have read only a paper copy of the final report, now there are PDF fact sheets and some spreadsheet information freely available online. The spreadsheets containing data used to produce this publication can be accessed online. In the longer term, the intent is to have Household Travel Survey data available via Confidentialised Unit Record Files for researchers to access online. It is also envisaged data from the new generation of the survey may be more immediately accessed online via analytics software, further expanding its use to a wider audience.

With these new technological innovations, privacy, security and confidentiality are still vital. While the new survey will be collecting data on actual trip behaviour, including addresses, any data collected will be used for statistical purposes only. Results will be reported at an aggregate level only and no information that can identify any individual or household will be published from this survey.

A perennial area of interest is the whys of any changes we do observe, and this is a difficult area to monitor. To a certain extent, we don't know what some of the potential travel influences of the future will be. Twenty-five years ago, the internet would not have been thought of as a potential influence on travel behaviour, but now it may be. This means the traditional areas monitored by a travel survey may need to be expanded, to start thinking about attitudes and influences as well as the traditional demonstrated behaviour. We find ourselves in the space of wanting to know why people don't travel, as well as why they do. We are therefore starting research into what some of the drivers of travel change are and how we might monitor them through the survey (or by other means). This will contribute to some new questions in the future.

A new use of the survey will be the retention of willing participants' contact details to create a panel of people for further survey work. This will allow us to ask more detailed questions to relevant people such as targeting cycling-specific questions to those who cycle frequently, or ask questions related to particular policy issues.

We thank everyone who has taken part in the survey in its various forms over the past 25 years. Your input has been invaluable in helping us understand how people in New Zealand travel. We hope this will continue into the future and, with your help and cooperation, we look forward to being able to report on future years of New Zealand travel.

Acknowledgements

All this knowledge would not have been available without the work of various organisations over the years.

The 1989/90 survey was commissioned by the Ministry of Transport, then the Land Transport Safety Authority (LTSA) organised the 1997/98 survey. LTSA commissioned the continuous survey from 2003 and responsibility for the survey transferred over to the Ministry of Transport when LTSA was disestablished in 2004.

Various companies have been responsible for the surveying over the years:

- 1989/90 and 1997/98 Ampt Applied Research
- 2003-2008 Opus
- 2008-2014 Research International (now TNS).

From 2015, the new survey is now in the hands of CBG.

Various individuals have worked on the Travel Survey over the years. These include but are not limited to:

- Mike Keall
- Bill Frith
- Stuart Badger
- Wayne Jones
- Paul Phipps
- Lynley Povey
- Jennifer McSaveney
- Matt Jones

14 Appendix: How the survey works

The New Zealand Household Travel Survey is a national survey of daily personal travel. It consists of three surveys that have the same core questionnaire and methodology, so the results can be compared over the past 25 years: 1989/90, 1997/98 and 2003-2014.

Each collected information on how, when, where and why people travelled over a specified 2-day period. The 1989/90 survey was conducted by the Ministry of Transport over a 12-month period during 1989 and 1990 and included nearly 9,000 people aged 5 years and over. The 1997/98 survey was conducted by the Land Transport Safety Authority over 12 months in 1997 and 1998 and surveyed over 14,000 people of all ages.

The 2003–2014 survey was an ongoing survey, designed to sample a smaller number of people per year, so several years' data needs to be aggregated for analysis. From 2003 to 2008, approximately 2,000 households per year were sampled, which resulted in responses from about 3,500 people each year. From June 2008, the survey was expanded to sample 4,500 households per year. The survey finished in June 2014.

From October 2015, a new version of the survey starts. It shifts the survey from 2 days of recorded travel to 7 days, but using GPS to make it easier for people to recall their travel. More details on it are discussed in Chapter 13.

14.1 Methods

The survey was based on personal interviews with each member of a participating household. Households were selected from cities, towns and rural areas throughout New Zealand.

Households were randomly selected from urban and rural areas within each region. Each address (household) was allocated two consecutive 'Travel Days'. These travel days were spread throughout the year, so that on every day of the year, some households were recording their travel.

Before their travel days, each selected household was sent an introductory letter and pamphlet introducing the survey and their interviewer. Once the household agreed to participate, the trained interviewer visited to collect some basic data (such as who lived in the household and how many vehicles were owned), and left a memory jogger for each household member to record their travel. Following the travel days, the interviewer returned to interview the household. Participants used the memory jogger to recall their travel, and the interviewer probed for additional detail. Parents could answer on behalf of children under 10, and all other household members were interviewed in person.

Following the survey, the trips were mapped to calculate the distance travelled.

For the earlier surveys, walking trips were not mapped and distances walked were estimated from the time spent walking[35].

Travel by professional drivers (for example, truck drivers, courier drivers and taxi drivers) in the course of their work was excluded from the analyses. Personal travel by these people was included in the survey.

This method has been used for all three surveys, with some modifications to the sampling strata used.

For more detailed information about the methodology, and to view the questionnaires used, visit the Ministry's website at **www.transport.govt.nz/research/travelsurvey/**.

35 Estimated walking distances used a conversion factor of 4.4km/h, determined by mapping a sample of walking trips in the 1997/98 survey (O'Fallon & Sullivan, 2005).

15 Appendix: A selection of research using the New Zealand Household Travel Survey

15.1 Ministry of Transport papers

McSaveney, J. (2009, September-October). *Alcohol consumption in the Ongoing New Zealand Household Travel Survey*. Australasian Transport Research Forum, Auckland, New Zealand.

McSaveney, J., & Povey, L. (2010, September-October). *Alcohol and travel in the New Zealand Household Travel Survey*. Australasian Transport Research Forum, Canberra, Australia.

15.2 External publications

Abley, S., Chou, M., & Douglass, M. (2008). *National travel profiles part A: Description of daily travel patterns*. NZ Transport Agency Research Report 353. Wellington, New Zealand: NZ Transport Agency.
http://www.nzta.govt.nz/resources/research/reports/353

Genter, J. A., Donovan, S., Petrenas, B., & Badland, H. (2008). *Valuing the health benefits of active transport modes*. NZ Transport Agency Research Report 359. Wellington, New Zealand: NZ Transport Agency.
http://www.nzta.govt.nz/resources/research/reports/359

Keall, M., Chapman, R., & Howden-Chapman, P. (2009). Changes in New Zealand transport mode choices over time by size of city. *WIT Transactions on The Built Environment, 107*.

Keall, M., & Woodbury, E. (2014). An analysis of changes in mobility and safety of older drivers associated with a specific older driver on-road licensing test: A population study. *BMC Public Health, 14*, 165.
http://www.biomedcentral.com/1471-2458/14/165

Lindsay, G., Macmillan, A., & Woodward, A. (2010). Moving urban trips from cars to bicycles: Impact on health and emissions. *Australian and New Zealand Journal of Public Health*, 35(1), 54–60.
http://onlinelibrary.wiley.com/doi/10.1111

O'Fallon, C., & Sullivan, C. (2005). *Trip chaining: Understanding how New Zealanders link their travel*. Transfund New Zealand Research Report 268. Wellington, New Zealand: Transfund New Zealand.
http://www.nzta.govt.nz/assets/resources/268.pdf

O'Fallon, C., & Sullivan, C. (2009). *Trends in older people's travel patterns: Analysing changes in older New Zealanders' travel patterns using the Ongoing New Zealand Household Travel Survey*. NZ Transport Agency Research Report 369. Wellington, New Zealand: NZ Transport Agency.
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http://www.nzta.govt.nz/resources/research/reports/373

Sullivan, C., & O'Fallon, C. (2010). *Walking and cycling: Improving combined use of physical activity/health and transport data*. NZ Transport Agency Research Report 435. Wellington, New Zealand: NZ Transport Agency.
http://www.nzta.govt.nz/resources/research/reports/435/

Tin Tin, S., Woodward, A., Thornley, S., & Ameratunga, S. (2009). Cycling and walking to work in New Zealand, 1991–2006: Regional and individual differences, and pointers to effective interventions. *International Journal of Behavioral Nutrition and Physical Activity, 6*, 64–74.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2754975/

Tin Tin, S., Woodward, A., & Ameratunga, S. (2010). Injuries to pedal cyclists on New Zealand roads, 1988–2007. *BMC Public Health, 10*, 655.
http://www.ncbi.nlm.nih.gov/pubmed/21034490/

Tin Tin, S., Woodward, A., Thornley, S., & Ameratunga, S. (2011). Regional variations in pedal cyclist injuries in New Zealand: Safety in numbers or risk in scarcity? *Australian and New Zealand Journal of Public Health, 35*(4), 357–363.
http://www.ncbi.nlm.nih.gov/pubmed/21806731

Wedderburn, M. (2013). *Improving the cost-benefit analysis of integrated PT, walking and cycling*. NZ Transport Agency Research Report 537. Wellington, New Zealand: NZ Transport Agency.
http://www.nzta.govt.nz/resources/research/reports/537/

16 Appendix: Glossary

Driver	In this publication, 'driver' includes all drivers of private light four-wheeled vehicles such as cars, utes, vans and SUVs.
Household	Group of people living at the same address, sharing facilities but not necessarily financially interdependent. May be an individual, couple, family, flatmates or a combination of these (for example, family plus boarder).
Journey	A series of one or more trip legs where the only intermediate stops are to change to another mode.
Passenger	Passenger in a private vehicle (car, van, ute, SUV, truck). Passengers in buses, trains and taxis are coded under those categories. Aircraft and boat passengers are included in the 'Other' category.
Professional driver	Someone who is employed to transport goods or people, including couriers, truck drivers, bus and taxi drivers. Trips by professional drivers in the course of their work are excluded. Other travel by professional drivers (including travel from home to work) is included. If a person drives a lot for work, but this is not the primary purpose of the job (for example, a plumber, real estate agent, district nurse), then all trips by this person are recorded (he or she is not a professional driver).
Public transport	Passenger in local bus, train or ferry. Distances are currently only available for bus and train trips. Local bus and train trips have been defined as 60km or less, local ferry as 1 hour or less. Bus/train/ferry trips of longer than this distance/duration have been coded to 'other household travel'.
SUV	Sports utility vehicle. Used in this report to refer to light passenger vehicle with high wheel base and distinctive body shape. Normally, but not always, four-wheel drive.
Travel	Includes all on-road travel by any mode; any walk which involves crossing a road or walking for 100 metres or more along a public footpath or road; cycling on a public road or footpath; some air and sea travel. Excludes off-road activities such as tramping, mountain biking, walking around the mall or walking around the farm.
Travel mode	The method of travel. Includes vehicle driver, vehicle passenger, pedestrian, cyclist, motorcycle rider or passenger, bus or train passenger, ferry or aeroplane passenger and other modes (for example, horseriding).
Trip distance	For road-based trips, distances are calculated by measuring the distance from the start address along the roads to the finish address by the quickest (not necessarily the shortest) route. If the respondent states that the quickest route was not used, the interviewer records an intermediate point which is then used in mapping the route.
Trip leg	A single leg of a journey, with no stops or changes in travel mode. For example, driving from home to work with a stop at a shop is two trip legs – one ending at the shop and one ending at work. This does not include trips where people walk less than 100 metres without crossing a road, trips on private property that start and end at the same place without crossing a road, and off-road round trips.

Trip purposes/ destinations	**Return home** includes any trip to the home address or any trip returning to the place where they are going to spend the night. **Work** includes travel to the main place of work and travel to any other jobs. **Employer's business:** includes work-related travel other than to and from work (for example, travelling to meetings or clients). **Education** is for travel by students only and includes institutions such as primary and secondary schools, and universities. It does not include preschool education such as kindergarten, Playcentre, crèche, and kōhanga reo, which are included under *social visit/ entertainment*, as in the Statistics New Zealand Time Use Surveys of 1998/99 and 2009/10. **Shopping** is entering any premises that sells goods or hires them for money. A purchase need not be made. **Social visit/entertainment** includes entertainment in a public or private place (for example, eating out at a restaurant or food court, or picnics). **Recreational** includes active or passive participation in sporting activities and travel for which the main goal is exercise. **Personal business** includes stops made to transact personal business where no goods were involved. This includes stops made for medical or dental needs and for dealing with government agencies involved with social welfare. **Accompany or transport someone** covers when the reason of the travel is to go somewhere for someone else's purpose. **Change mode of travel** covers when the purpose of the stop was only to change to another mode of transport.
Ute	Utility vehicle; a light flatbed truck weighing up to 3.5 tonnes. Typically based on a car or van model with a front cab and a flatbed instead of rear seats or luggage space.
Walk	Includes walkers, joggers, users of mobility scooters and children on tricycles. Does not include off-road walking (for example, tramping or walking around private land).

17 Appendix: References

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