



Cycling for transport

Household Travel Survey

v1.0 Nov 2008

The New Zealand Household Travel Survey is an ongoing survey of household travel conducted for the Ministry of Transport. Each year, people in over 2 000 **households** throughout New Zealand are invited to participate in the survey by recording all their **travel** over a two-day period. Each person in the household is then interviewed about their travel and is also asked about their alcohol consumption and other travel-related information.

This fact sheet looks at cycling by New Zealanders – who cycles, where to, and how the patterns have changed over time. Note that this travel survey captures cycling in the road / footpath environment; off-road activities such as mountain biking are not included in these estimates. This fact sheet uses data from 14 070 people in 5 723 households, collected between July 2003 and June 2007. The information will be updated as new data become available.

Words shown in **blue** are defined in the glossary at the end of this sheet. Click on the word or phrase to go directly to the glossary.

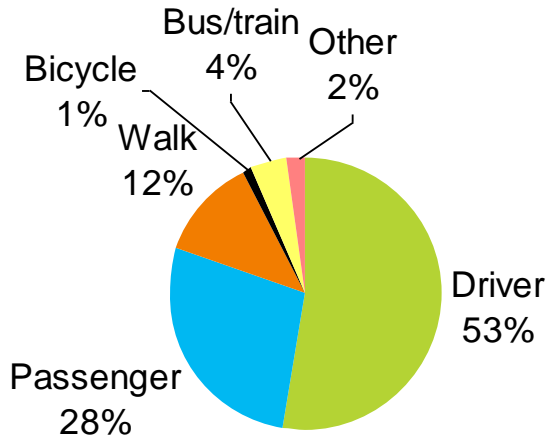
Highlights

- Cycling makes up 1% of total time travelled and 1% of the number of **trip legs**.
- Males spend more time cycling than females for all age groups.
- 65% of those 5-12 years old, 60% of those 13-17 years old and 26% of those 18 years and over have cycled at some stage in the last year.
- 18% of people reported cycling in the last month.
- Of those who have cycled in the last month, those in smaller towns or rural settings are more likely to have cycled than those in **major urban centres**.
- 70% of **households** of a family with children have one or more bicycles.
- 79% of those living alone do not have a bicycle.

Share of transport

Figure 1: Overall mode share

a) Share of total travel time



b) Share of trip legs

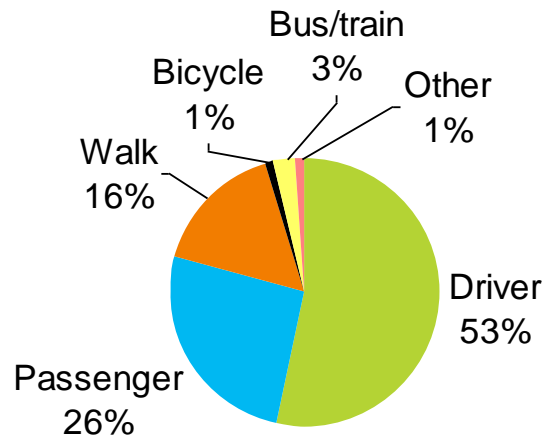


Figure 1 shows each travel mode's share of the total travel time, trip legs and on-road distance travelled. Cycling makes up 1% of total time travelled and 1% of all trip legs. Walking distance has been imputed from time spent walking, using a conversion factor of 4.4 km/h. This is based on work done by Carolyn O'Fallon and Charles Sullivan (O'Fallon and Sullivan, 2004) using a sample of walking trips from the 1997/98 Household Travel Survey.

Table 1: Mode share of time, distance and trip legs

Travel mode	Trip legs in sample	Million hours per year	Million km per year	Million trip legs per year
Drivers	64 248	895	33 400	3 590
Passengers	31 951	472	18 900	1 760
Walking	18 753	209	920 ¹	1 080
Bus passenger	2 366	66	1 700	150
Bicycle	1 987	21	250	86
Taxi passenger	465	7	180	24
Train	315	11	See note	19
Other modes ²	636	25	See note	43
Total	120 721	1706	55 400	6 760

Note: Distance estimates are available for road-based modes only. Totals may not add exactly due to rounding.

Overall New Zealanders spend 21 million hours per year cycling, covering a total of 250 million km per year, and 86 million **trip legs** per year.

Mode share by age group

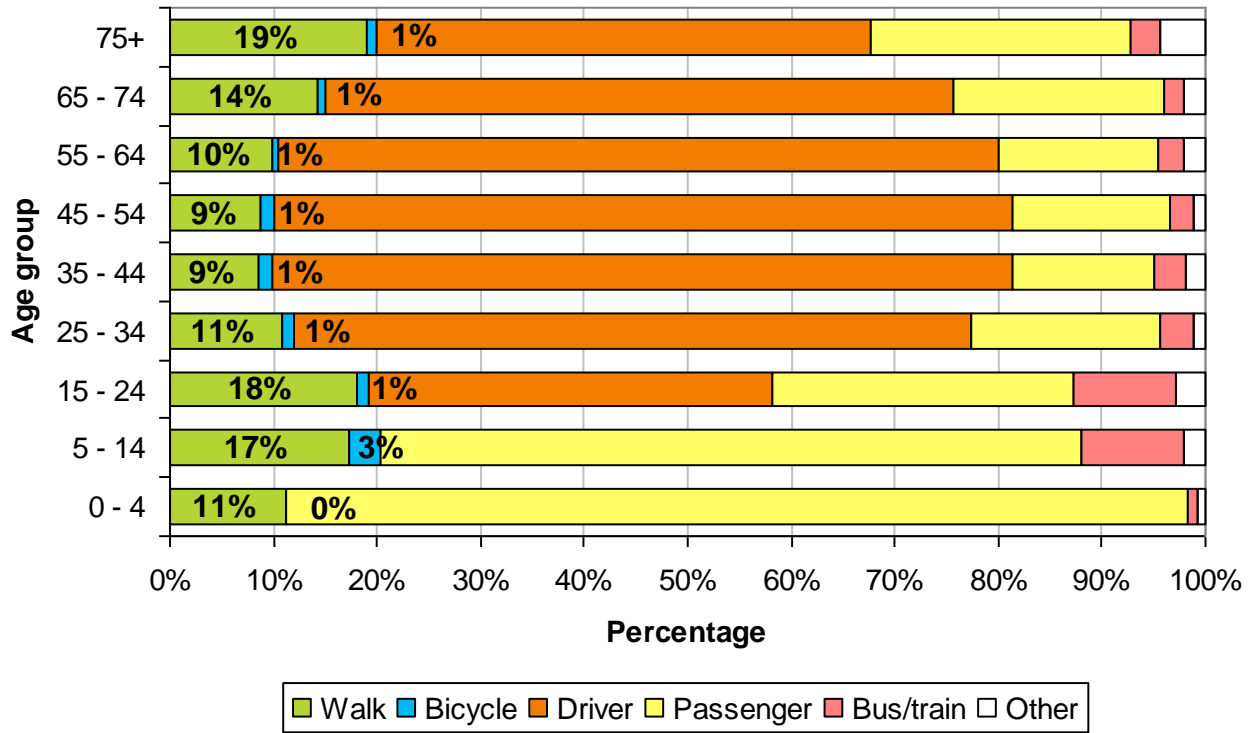
Figure 2 shows travel patterns for various age groups. School-aged children, young adults and older road users were the most likely to choose active travel modes (walking and cycling). Those 5-14

¹ This distance is imputed from a walking speed of 4.4km/h.

² 'Other' includes travel by air and sea as well as uncommon land modes e.g. riding horses or mobility scooters.

years old spend the greatest percentage of their time cycling, at 3%. People aged 35 – 64 were the most car-dependent, with 11% or less of their total travel time spent walking or cycling.

Figure 2: Mode share (percentage of total time spent travelling by each mode of travel)



Cycling makes up only 1% of overall travel time and trip legs (see Figure 1). As there are far fewer cycling trips observed than walking trips, less detail is able to be obtained from the survey, but there is still a great deal available for those who do cycle.

Who cycles?

Table 2: How many people cycle, by age group and sex

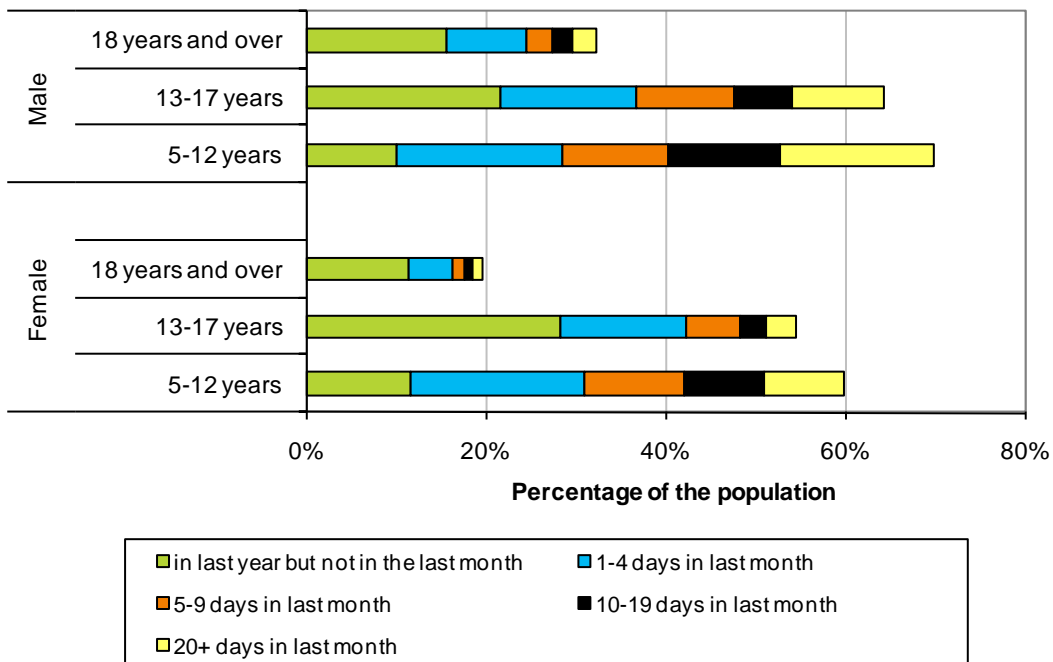
Sex	Age group	Percent of the population in each age/ sex category who cycled...					
		at some stage in the last year	in last year but not in the last month	1-4 days in last month	5-9 days in last month	10-19 days in last month	20+ days in last month
Female	5-12 years	60%	12%	19%	11%	9%	9%
	13-17 years	55%	28%	14%	6%	3%	3%
	18 years and over	20%	11%	5%	1%	1%	1%
Male	5-12 years	70%	10%	18%	12%	13%	17%
	13-17 years	64%	22%	15%	11%	6%	10%
	18 years and over	32%	16%	9%	3%	2%	3%
All	5-12 years	65%	11%	19%	11%	11%	13%
	13-17 years	60%	25%	15%	8%	5%	7%
	18 years and over	26%	13%	7%	2%	2%	2%

The two day sampling period means that there is quite high odds that someone may cycle, but just not have done so in the sampled period. Hence people are also asked about whether they have cycled within the last month or last year. These results are presented in Table 2 and graphically in Figure 3.

Two-thirds of children aged 5 – 12 have ridden a bike in the last year. Almost 60% of 13 – 17 year olds and a quarter of adults reported having ridden a bike in the previous year. This suggests that most New Zealanders still learn to ride a bike as children though relatively few adults cycle regularly.

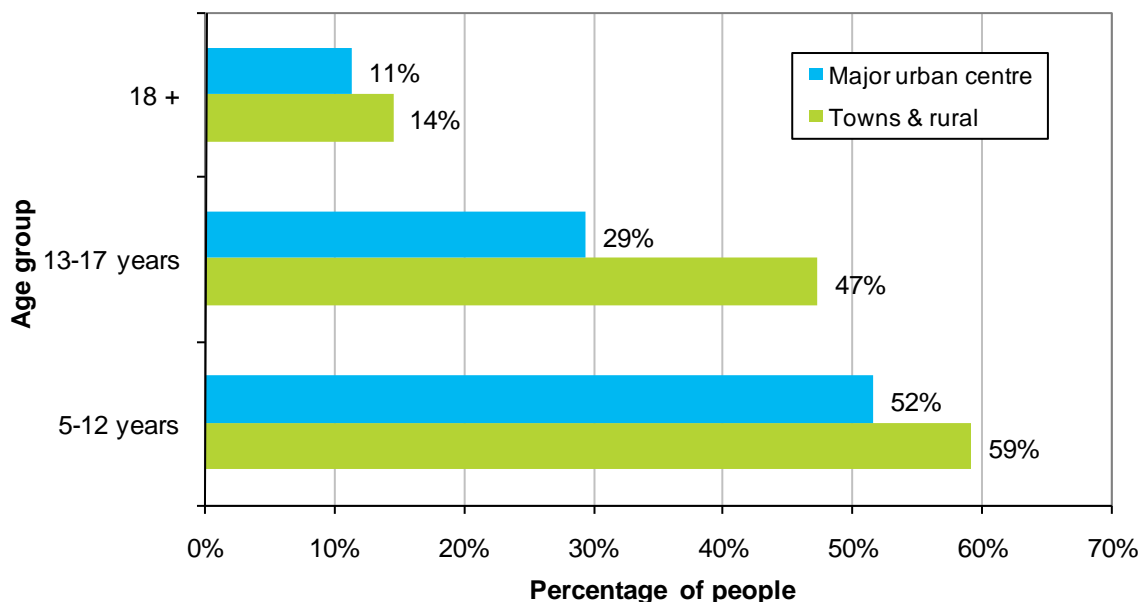
Over one third (35%) of 5 – 12 year olds and 20% of those aged 13 – 17 years old reported riding a bike on at least 5 days in the previous month, but relatively few adults – only 5% - were regular cyclists.

Figure 3: Percentage of the population who cycled...



These results show that males aged 5-12 years are most likely to have cycled in the past year, followed by males aged 13-17 years. Overall, females are less likely to have cycled in the past year than males for all age groups.

Figure 4: Percentage of age groups who have cycled in the last month by age and residential area.



People living in town or rural settings are more likely to have cycled in the last month than those in major urban centres. However the same age pattern appears to hold whether in an urban or rural household.

Cycle travel

Males spend more time cycling per year than females, both as children, and as adults (aged over 18 years) (see Table 3). Females of all ages cycle the shortest distance per person per week, at 0.7 km, while males aged between 5 and 17 years cycle the longest distance at 1.7 km per person per week. Male adults cycle the furthest per trip leg, averaging 4.6 km per trip leg, with female adults averaging 3.4 km per trip leg, whereas male children average the shortest trip legs at 1.2 km per trip leg.

Overall, those aged 13-17 years cycle the furthest at 2.2 km per person per week, but those 18 year and over average the larger number of km per trip leg at 4.1 km.

Table 3: Cycling trips by age group and sex

Sex	Age group	Trip legs in sample	Trip legs per year (million)	Time spent cycling per year (million hours)	Distance cycled per year (million km)	Km cycled per person per week	Km per trip leg
Female	Child, 5-17	218	9.3	2.0	15	0.7	1.6
	Adult, 18 and over	450	16.8	4.7	58	0.7	3.4
Male	Child, 5-17	685	31.5	5.6	37	1.7	1.2
	Adult, 18 and over	604	28.0	8.9	128	1.7	4.6
All	5-12 years	520	23.5	4.0	25	1.0	1.1
	13-17 years	383	17.3	3.7	37	2.2	2.1
	18 years and over	1 054	44.8	13.5	185	1.2	4.1

Destinations

For each piece of travel recorded, the respondent is asked about his or her destination or the purpose of the trip leg. These responses are coded into the categories shown in Table 4. 'Home' is used for the return leg of all travel; the categories shown include only travel to the stated destination types.

In Table 4 cycling may not have been the only travel mode used in achieving the final destination; however only the time and distance spent cycling has been included in the table. Care should be taken with extrapolating from the time spent cycling per year and distance cycled per year due to the small number of trip legs sampled. Percentages will not add up to 100% for each age group due to categories not specified where there was too small a data set.

Table 4: Cycling trips by trip purpose / destination and age group

Age group	Purpose/destination	Trip legs in sample	Trip legs per year (million)	Time spent cycling per year (million hours)	Distance cycled per year (million km)	Percent of cycling time excluding return home
5-17 years	Return home	290	13.4	2.5	19.7	
	Work	99	3.8	0.7	5.6	21%
	Education	122	5.9	1.2	11.4	33%
	Social/Shopping/Personal business	120	5.5	0.7	7.1	20%
	Recreational	68	3.9	0.8	4.9	23%
	Age group total	699	32.5	6.0	48.8	100%
18+ years	Return home	297	13.4	4.2	61.6	
	Work	265	10.0	2.4	29.5	37%
	Education	10	Sample too small	Sample too small	Sample too small	2%
	Social/Shopping/Personal business	130	5.5	1.3	18.8	20%
	Recreational	119	5.5	2.6	36.9	40%
	Age group total	821	34.2	10.5	146.9	100%

From Table 4, there is a distinct pattern shift between those under 18 years old and those over 18 years old. For those under 18 years old, 33% of cycling time is spent travelling for education, 23% recreational and 20% work, whereas this shifts to 37% for work and 40% for recreation, and education becomes negligible for those over 18 years old. Cycling for social, shopping or personal business stays steady on 20%. This is also shown in Figure 5.

Figure 5: Time spent cycling by trip purpose / destination.

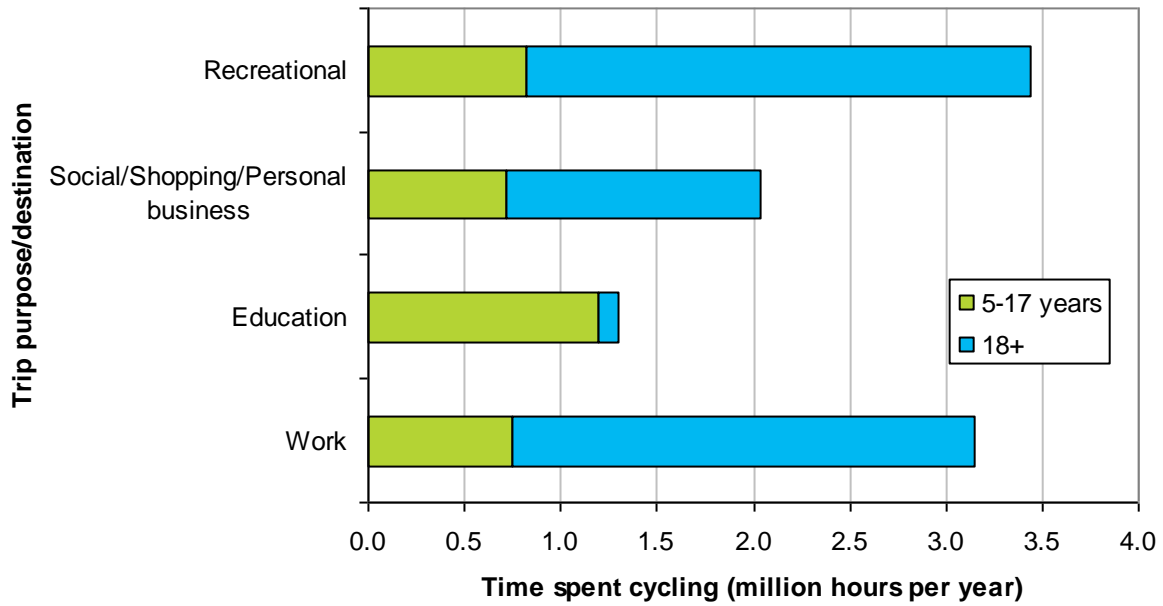
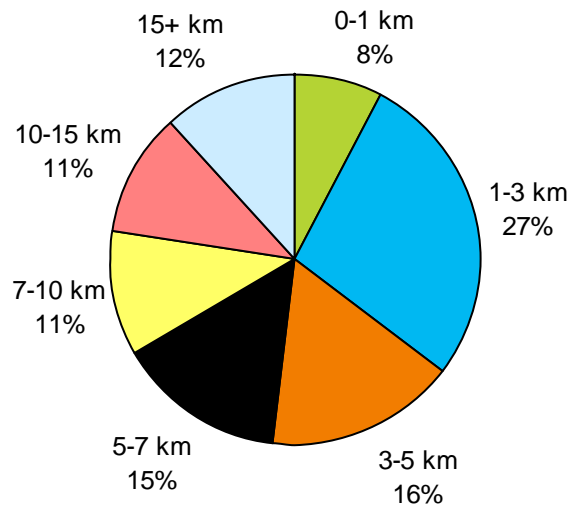
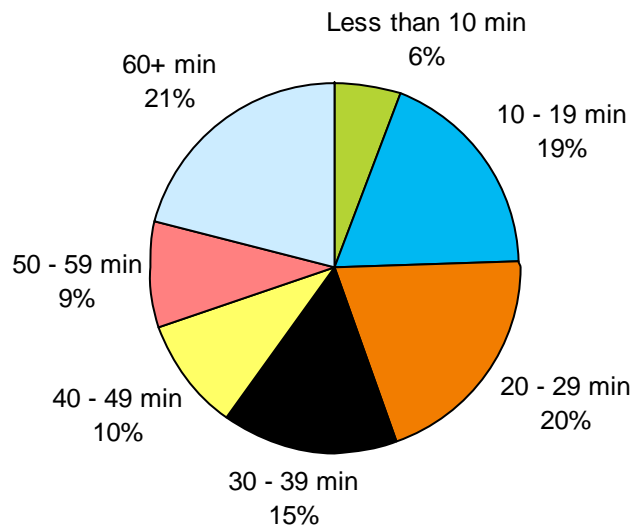


Figure 6: Distances cycled in a day by those who cycled.



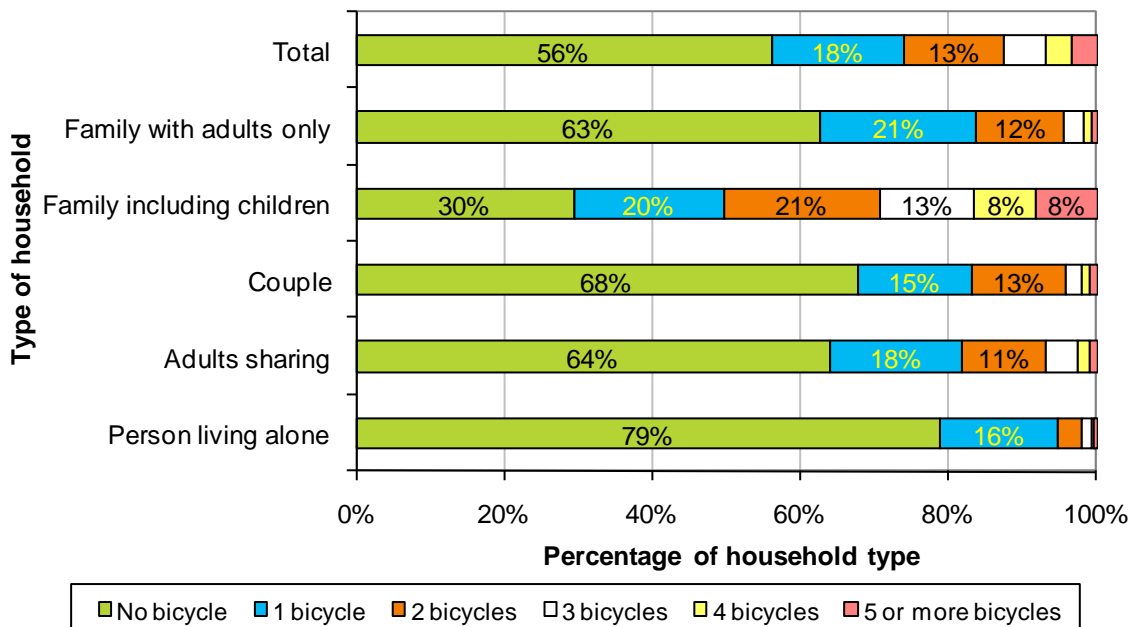
Examining the actual distance cycled by a person in a day, if they cycled (Figure 6), the largest proportion of distances are 1-3 km, followed by 3-5 km and 5-7 km respectively. 23% of people who cycled, cycled more than 10 km in a day.

Figure 7: Percentage frequency distribution of time spent cycling in a day by those who cycled.



With respect to the time spent cycling by a person in a day (Figure 7), 19% of people who cycled, cycled for between 10-19 minutes and 20% cycled for between 20 – 29 minutes. 21% cycled for over an hour in a day.

Figure 8: Percentage of households with bicycles.



Each household was asked how many bicycles in working order that the household owned (excluding children’s tricycles). Households with children are far more likely to have bicycles: 70% of households of a family with children have one or more bicycle. Generally it appears that the more people there are in the household and the younger they are, the more likely it is that there are bicycles in the household. Families with adults only and adults sharing are next most likely to have a bicycle or more in the house (37% and 36% respectively). Only 32% of couples have one or more bicycles in the house and 79% of those living alone have no bicycle.

Trends in cycling

Examining the 4 time periods the surveys cover, for children (under 18 years) there has been a statistically significant reduction in both the time per person spent cycling (Table 5 and Figure 9) and the distance cycled per person (Table 6 and Figure 9). The estimated time cycled per week for those aged 5-12 years has decreased from 28 minutes in 1989/90 to 9 in 2004-2007. The estimated distance cycled has also decreased from 2.8 km in 1989/90 to 0.9 km in 2004-07. For those aged 13-17, the time spent cycling per week has decreased from 52 minutes in 1989/90 to 13 minutes in 2004-07. The distance cycled per week has also decreased substantially from 7.9km in 1989/90 to just 2.1km in 2004-07. There has been no such reduction for adults.

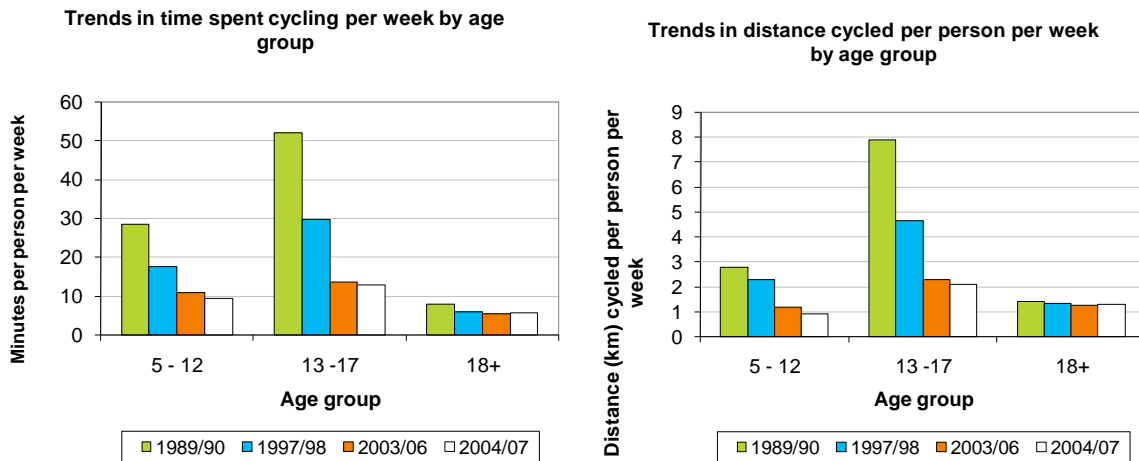
Table 5: Trends in minutes spent cycling each week per person by age group

Age group	1989/90	1997/98	2003-06	2004-07
	Estimated minutes cycling per week	Estimated minutes cycling per week	Estimated minutes cycling per week	Estimated minutes cycling per week
5 - 12	28	18	11	9
13 -17	52	30	14	13
18+	8	6	5	6
Total 5 or over	15	10	7	7

Table 6: Trends in km cycled each week per person by age group

Age group	1989/90	1997/98	2003-06	2004-07
	Estimated km cycled per week	Estimated km cycled per week	Estimated km cycled per week	Estimated km cycled per week
5 - 12	2.8	2.3	1.2	0.9
13 -17	7.9	4.6	2.3	2.1
18+	1.4	1.3	1.3	1.3
Total 5 or over	2.2	1.8	1.3	1.3

Figure 9: Trends in time spent cycling per week and distance cycled per week by age group.



References:

O'Fallon & Sullivan (2004). Trip chaining: understanding how New Zealanders link their travel. Transfund Research Report, September 2004.

Additional information:

Transport Monitoring Indicator Framework

<http://www.transport.govt.nz/transport-monitoring-indicator-framework/>

Cyclist fact sheet (cyclists involved in motor vehicle crashes)

<http://www.transport.govt.nz/cyclists-1/>

Comparing Modes Fact Sheet for information about travel to school and travel to work.

<http://www.transport.govt.nz/latest-results-1/>

For more information about the background to the survey see the Ministry of Transport website at www.transport.govt.nz/ongoing-travel-survey-index/

Glossary

Driver: in this fact sheet includes all vehicle drivers including motorcyclists and taxi drivers.

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 (eg family plus boarder).

Household types:

Family includes any configuration: multi-generational, cousins, step parents, de facto partners with own, step or foster children, same sex partners with children etc. This is further divided into *Family with adults only* and *Family including children*.

Couple includes same sex couples.

Adults sharing includes couples living with boarders or flatmates.

Person living alone

Journey: a series of one or more trip legs where the only intermediate stops are to change to another mode.

Major urban centre: a very large urban area centred on a city or major urban centre. This uses the Statistics New Zealand criteria of an urban centre with a population of 30 000 or more and includes satellite areas eg Kapiti, Cambridge.

Passenger: passenger in a private vehicle (car, van, ute, SUV, truck, or motorcycle). Passengers in buses, trains and taxis are coded under those categories. Aircraft and boat passengers are included in the 'Other' category.

Towns and rural: this uses the Statistics New Zealand criteria of an urban centre of between 10 000 – 29 999 or a rural area with a population of less than 10 000, including satellite areas.

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 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 so forth.

Trip distance: For road-based trips, distances are calculated by measuring the distance from the start address along the roads to the finish address. If an unusual route was used, the interviewer records an intermediate point to indicate the route; otherwise, the journey is assumed to follow the quickest available 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 100m 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 they are going to spend the night.

Work includes travel to main place of work, travel to any other jobs and travel done on employer's business.

Education is for travel by students only and includes institutions such as primary and secondary schools, universities etc. It does not include preschool education such as kindergarten, Play centre, crèche, kōhanga reo etc which are included under *social visit / entertainment*.

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 e.g. eating out at a restaurant or food court, picnics etc.

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.

Walk: Includes walkers, joggers, users of mobility scooters and children on tricycles.

Work: Employer's business: includes work-related travel other than to and from work (eg travelling to meetings or clients).

Prepared by the Transport Monitoring team of the Ministry of Transport, November 2008.