

# Are private passenger motor vehicles older in more socioeconomically deprived areas?

Author: Kirsty Craig

## Key findings

- Private passenger vehicles tend to be older, on average, in areas of higher socioeconomic deprivation.
- The median age of cars increases from 12 years for decile 1 (least deprived), to 16 years for decile 10 (most deprived).
- Newer cars (0-9 years) make up 40.6% of vehicles in the least deprived areas (NZDep2018 decile 1) but only 21.7% of vehicles in the most deprived areas (NZDep2018 decile 10).

## Introduction

The Aotearoa New Zealand vehicle fleet is among the oldest in the world (see [Average age of motor vehicles](#) factsheet). Average vehicle fleet age is an indicator of the efficiency of vehicles on the road. Older cars tend to be less fuel-efficient and produce more emissions, which can affect human health.

Vehicle age is often also related to vehicle safety, with newer models having more and better safety features installed. While the emissions of older vehicles have a wide impact on the population, the safety features of newer vehicles benefit the occupants of those vehicles more directly.

This report investigates the age of private passenger motor vehicles by socioeconomic deprivation (NZDep2018 decile). This report has used motor vehicle registration data from Waka Kotahi New Zealand Transport Agency, and has used NZDep2018 deciles based on the meshblock of the registered owner's address, for all private passenger motor vehicles registered in New Zealand as at 31 December 2022. Age was calculated using vehicle year (year of manufacture or model year).

## Older cars are more common in areas of higher socioeconomic deprivation

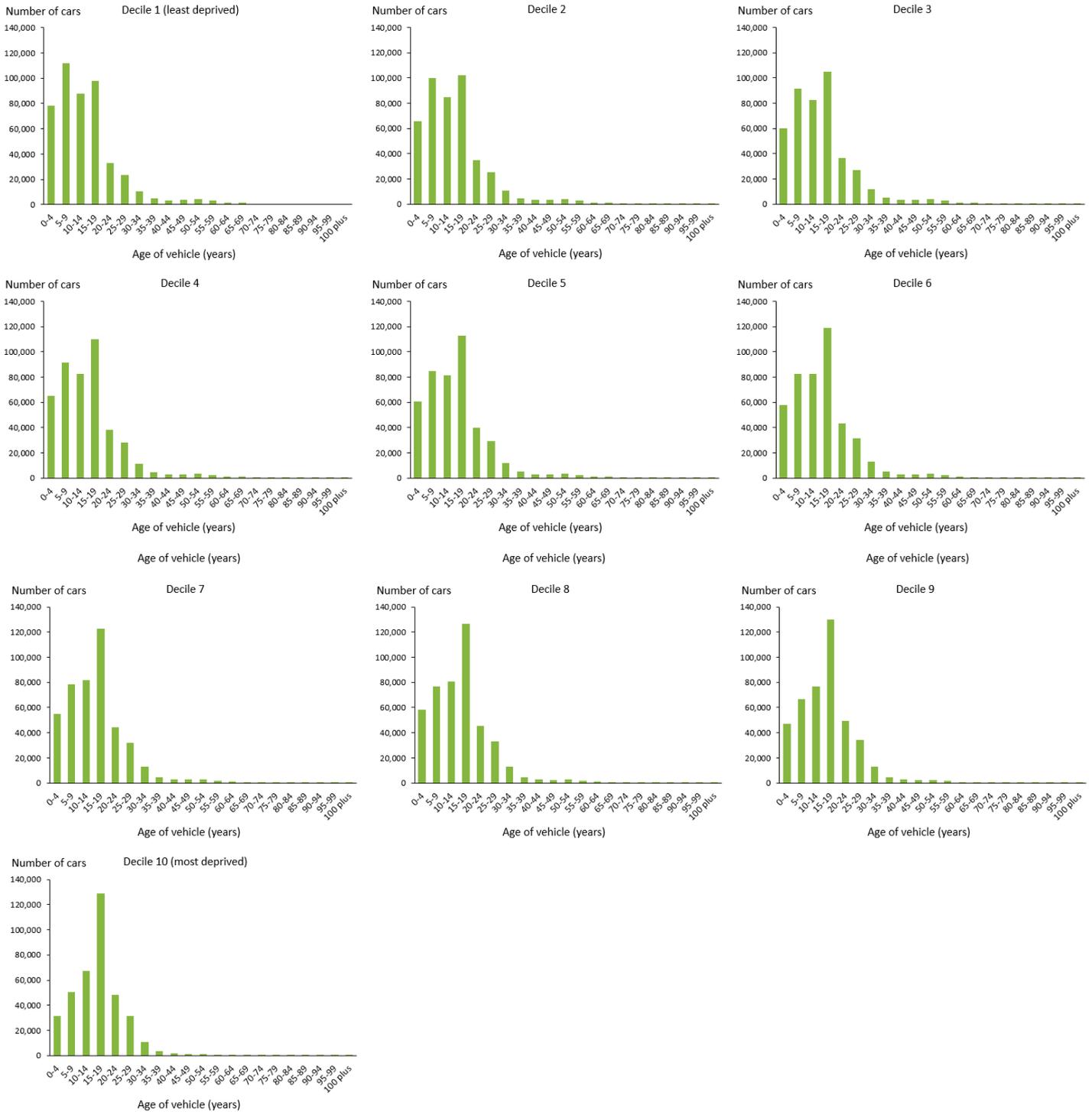
Data from the New Zealand Motor Vehicle Register shows that private passenger vehicles registered to addresses in areas of higher socioeconomic deprivation tend to be older, on average, than those registered to addresses in areas of low socioeconomic deprivation.

## *Distribution of private passenger vehicle registrations by age*

Figure 1 shows frequency distributions for each deprivation decile by age of vehicle (grouped into 5-year age groups). With increasing socioeconomic deprivation, the number of newer cars decreases, and the number of older cars increases. A peak around the 15-19 years age group also becomes more marked as socioeconomic deprivation increases.

For decile 1 (least deprived), vehicles aged 15-19 years made up 20.9% of registered vehicles, compared to 34.0% of registrations for decile 10 (most deprived) (see Table 1).

**Figure 1.** Number of cars owned by age of vehicle and NZDep2018 decile of the registered owner



**Source:** NZTA Motor Vehicle Register 2023

Table 1 shows the age breakdown of vehicles within each decile. For example, 16.7 percent of vehicles registered to decile 1 addresses were aged up to 4 years old, and 23.9 percent were between 5 and 9 years old. A table with same structure showing the counts of cars by decile and age is in Appendix A.

**Table 1.** Percentage of each NZDep2018 decile’s private passenger vehicles within specified age-group

Vehicle age (years)	Decile 1 (least deprived)	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10 (most deprived)
0-4	16.7	14.7	13.7	14.6	13.7	12.9	12.3	12.9	10.9	8.4
5-9	23.9	22.3	20.9	20.3	19.2	18.3	17.6	16.9	15.4	13.3
10-14	18.8	18.9	18.8	18.4	18.4	18.3	18.3	17.8	17.8	17.8
15-19	20.9	22.8	23.9	24.5	25.5	26.4	27.5	28.1	30.1	34.0
20-24	7.0	7.8	8.4	8.5	9.1	9.6	9.9	10.1	11.3	12.8
25-29	4.9	5.6	6.2	6.2	6.6	7.0	7.2	7.3	7.9	8.2
30 plus	7.7	7.9	8.1	7.4	7.5	7.4	7.2	6.8	6.6	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: New Zealand Motor Vehicle Register, 2023

### **Mean and median ages are higher for vehicles from more socioeconomically deprived areas**

The differing distributions in Figure 1 are reinforced by looking at mean and median ages by decile. Table 2 shows the number of private passenger vehicles registered by decile, mean age, median age, as well as maximum age (the minimum age was 1 year for all deciles). The median age of cars increases from 12 years for decile 1 (least deprived), to 16 years for decile 10 (most deprived).

Classic and vintage cars over 30 years of age are found across all neighbourhood deprivation levels and do not explain the higher average ages at higher deciles. In fact, classic and vintage cars appear to be more common in lower deciles, leading to a larger difference between the median and mean ages in lower deciles.

**Table 2.** Private passenger vehicle fleet age by NZDep2018 decile

NZDep2018 Decile	Number of vehicles	Median age (years)	Mean age (years)	Maximum age (years)
1	468,348	12	14.3	124
2	447,531	13	14.9	124
3	437,626	14	15.2	123
4	448,879	14	15.0	125
5	441,964	14	15.2	119
6	450,729	15	15.5	120
7	446,135	15	15.6	118
8	451,699	15	15.5	122
9	432,861	16	15.9	118
10	378,075	16	16.2	120

Source: New Zealand Motor Vehicle Register, 2023

### **Summary**

Vehicles registered to people living in areas with higher neighbourhood deprivation are older. Newer vehicles tend to have more and better safety features, giving vehicle occupants more protection from injury and death.

As reported in our road traffic injury hospitalisations and mortality [factsheets](#), people that live in areas of higher socioeconomic deprivation have higher injury hospitalisation rates and higher mortality rates from road traffic injuries (EHINZ 2023). Vehicle crashes are the result of many factors, but it is possible that the higher average age of vehicles is one contributor to the higher injury hospitalisation and mortality rates for people living in these areas.

## DATA AND METHODS

Data was requested from the Waka Kotahi New Zealand Transport Agency Motor Vehicle Register. The data included vehicles on the register as at 31 December 2022 where vehicle usage was 'Private passenger' and registration status was 'Active'. The dataset received had 4,421,657 records. Initial exclusions were made for kit-cars and other vehicles built from scratch (n=1,984) and one record where vehicle year (year of manufacture or model year) was missing. Records were then matched to the 2018 New Zealand Index of Socioeconomic Deprivation (NZDep2018) using the meshblock of the registered owner's address. A further exclusion was made if the meshblock did not match to the NZDep2018 index (n=15,825, 0.3% of records). This was more common for newer vehicles. The final dataset analysed contained 4,403,847 records. Vehicle age was calculated using the vehicle year. Where the vehicle year was 2022, the age was calculated as 1.

## ABOUT THE DATA

Registration is the process of adding a vehicle to the Motor Vehicle Register and is normally carried out only once in the lifetime of a vehicle. This is different from licensing (commonly referred to as 'Rego'), which refers to the fee paid to be allowed to travel on New Zealand roads.

The meshblock of the location of the registered owner's address was used to map to the New Zealand Index of Socioeconomic Deprivation (NZDep). This is a commonly-used measure of socioeconomic deprivation for small areas in New Zealand, particularly in the health sector (Atkinson, Salmond, & Crampton, 2020). The NZDep is assessed at every Census (eg 2001, 2006, 2013, 2018) and combines a number of Census variables (eg internet access, receiving income benefit, employment, household crowding etc).

## REFERENCES

Atkinson, J., Salmond, C., & Crampton, P. (2020). *NZDep2018 Index of Deprivation: Final research report, December 2020*. Wellington: University of Otago.

Environmental Health Intelligence NZ. 2023. Road traffic injury mortality. Wellington: Environmental Health Intelligence NZ, Massey University.

Waka Kotahi New Zealand Transport Agency. 2023. Unit level data on private passenger vehicles on the Motor Vehicle Register as at 31 December 2022 (extracted 26/06/2023).

## Appendix A

The table below shows the number of vehicles registered to addresses within each NZDep2018 decile broken down by age group. For example, there were 78,389 vehicles registered to decile 1 addresses that were aged up to 4 years old.

**Table 3.** Number of private passenger vehicles within specified age-group by NZDep2018 decile

Vehicle age (years)	Decile 1 (least deprived)	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10 (most deprived)	Total
0-4	78,389	65,856	59,830	65,396	60,672	58,039	54,712	58,097	46,968	31,613	579,572
5-9	111,917	99,766	91,560	91,310	85,009	82,412	78,561	76,559	66,824	50,335	834,253
10-14	88,066	84,470	82,256	82,782	81,350	82,435	81,688	80,614	76,980	67,227	807,868
15-19	97,952	102,038	104,693	109,965	112,651	119,201	122,807	126,763	130,293	128,657	1,155,020
20-24	32,859	34,853	36,811	38,265	40,146	43,433	44,313	45,667	49,093	48,522	413,962
25-29	23,153	25,221	26,970	27,929	29,034	31,666	32,112	33,060	34,019	31,176	294,340
30 plus	36,012	35,327	35,506	33,232	33,102	33,543	31,942	30,939	28,684	20,545	318,832
Total	468,348	447,531	437,626	448,879	441,964	450,729	446,135	451,699	432,861	378,075	4,403,847

Source: New Zealand Motor Vehicle Register, 2023

### Other related topics include:

[Road traffic injury mortality and hospitalisations](#)

[Active transport to and from school](#)

[Number of motor vehicles](#)

[Unmet GP need due to lack of transport](#)

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### Contact

[ehinz@massey.ac.nz](mailto:ehinz@massey.ac.nz)

### Citation

Environmental Health Intelligence NZ. 2023. *Road traffic injury hospitalisations*. Wellington: Environmental Health Intelligence NZ, Massey University.