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The Low Income Penalty Report.

Is the UK's current car tax system hurting the poorest in society?

AUGUST 2021

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Is the UK's current car tax system hurting the poorest in society?

Foreword from
James Blackham

As long-standing campaigners for fairness in motoring, we commissioned this report to get to the bottom of a theory we've had for a while.



We've believed for some time that lower income households are subsidising more wealthy drivers when it comes to the UK's current flat-rate Vehicle Excise Duty (car tax), but until now we haven't been able to prove this. Some previous reports in the media even suggested that the opposite could be true.

It's not controversial to suggest that those who use our roads the most should pay a proportional share for how much they use them. It makes sense to pay more if you create more congestion in our towns, and cause more wear and tear to our roads.

We've already seen positive examples of pay-as-you-use models in other areas of motoring, such as with congestion charging and Ultra Low Emissions Zones (ULEZ) incentivising behavioural changes.

This became all the more important recently, following **IPCC's** report and the **UN's 'code red' verdict** on human-induced climate change. As a society we've already caused irreversible damage, but it's not too late to change our personal behaviours to limit future impact.

Another initiative has been to incentivise the purchase of electric and hybrid cars. This is a step in the right direction, but we're concerned that, despite Government incentives, the high cost of these brand new cars is still leaving many cleaner and greener vehicles out of reach for lower income households.

In partnering with the University of Manchester, we knew we were teaming up with a socially aware and responsible organisation who would strive to get to the bottom of this important issue.

The findings of this report are loud and clear. Lower income drivers face a triple-lock of hardship at the hands of our current car tax system. Despite driving shorter distances, less often and being priced out of more efficient vehicles, these households are being used to prop up the driving habits of much wealthier households.

We firmly believe that a pay-by-mile car tax is the only fair and just solution.

We urge the Government to adopt a fairer approach for lower mileage drivers, charging and taxing motorists for the miles they actually drive and rewarding those who drive less. This new model would not only save lower income households money, but reduce congestion and emissions - which will benefit all road users, however they choose to travel.

James Blackham

James Blackham
CEO and co-founder of By Miles

Executive summary.

Key findings from the research.

Lower income households drive

40%

fewer miles than the highest income bracket.

Highest income households drive

4× further

than the lowest income households.

15%

of households in the lowest income group own a new car

(registered in the last three years), compared to 28% from the highest-income households.

Only 22%

of drivers from low income households

pay the cheapest tax bands (A-C). In the wealthiest group, this rises to nearly 30%.

26%

fewer low income households

pay the cheapest tax bands (A-C), compared with the highest income households.

10 pence

vs. 3.2 pence per mile

Low income drivers being taxed over double per-mile than more wealthy road users.

The key recommendations.

1

Replace VED (car tax) and Fuel Tax with a pay-by-mile tax system.

Create a road tax system that not only takes into account the emissions and weight of the car, but also the number of miles travelled, replacing VED and Fuel Tax. This system would offset the penalty paid by the low-income households who travel less. Road pricing is the best alternative to support the need to replace tax revenue from Fuel Duty (we further point out that VAT is also paid at 20% on fuel), which would otherwise be lost.

3

Apply the pay-by-mile tax at time of MOT, based on actual mileage driven.

This will be a low tech and straightforward way of levying the fee and could be applied as a per-mile rate once annual mileage is recorded. Drivers from low income households who travel a lot still travel less than those in more affluent ones (Figure 4B), so are unlikely to be penalised by a pay-by-mile model. The so-called rebound effect (i.e. increase in vehicle fuel efficiency leading to more car travel) is likely to be smaller for low-income households** when compared with more affluent ones.

2

Establish a pay-by-mile road tax that is used to improve roads.

Car tax should be ring-fenced and actually spent on improving our roads — not just for drivers. This revenue is vital to fund the maintenance and building of our road network, and could also be used to improve public transport infrastructure or support the transition to electric vehicles, which would also benefit households without a car.*

4

Further incentivise lower income households to replace their cars with more efficient models.

Provide incentives for low-income households, especially those in forced car ownership (e.g. where there are few public transport services available or it is unsafe to walk and cycle) to replace their cars with newer and more efficient ones. This can be done based on the existing Motability Scheme for those in receipt of a qualifying mobility allowance.

*European Commission 2004
**Stapleton et al. 2017

Introduction.

This report demonstrates the bias and social inequalities in mobility and accessibility across different social groups in England during the timeframe between 2002 and 2019. In this section, we demonstrate that there are stark mobility and accessibility inequalities between those with low incomes, compared to households with the highest incomes. In our analysis, we used the National Travel Survey (NTS). The NTS is a household survey of personal travel by habitants of England travelling within Great Britain. The survey has been collected for over 50 years on a regular basis. The NTS also collects data on household income, which provides the means to carry out the analysis of travel separated by income levels.

We began the analysis by establishing key patterns of travel using various modes of transportation. We have applied several inequality indicators to explore the scale, differences, and consistency of the travel patterns between lower and higher income groups.

Firstly, we analysed car ownership across different income households. Based on the NTS data, we found that low-income households tend to own older and fewer cars than households with higher income levels. Also, cars owned by low-income households are less efficient and therefore more likely to be in a more expensive tax band.

Following this, we analysed driving habits in England. We found that lower income households drive less, and that their travel distance is 40% shorter than higher-income households. In addition, low income households make fewer trips, on average.

These issues are important because unequal mobility can often have serious implications for social exclusion, equality of opportunities, wellbeing and quality of life.

Part one.

Understanding the multitude of challenges faced by lower income households.

According to the Joseph Rowntree Foundation (JRF 2021), in 2018/19 there were 14.5 million people living in poverty in the UK, when using a definition of a Minimum Income Standard (MIS).

MIS is a benchmark of goods required for an adequate standard of living, including transportation. Since this research took place, income inequalities are projected to increase even further (Hood and Waters 2017).

Car travel has been slowly but steadily decreasing since around 2002 (Stapleton et al. 2017; Heinen and Mattioli 2019). As Banister (2018; 2019) highlights, there is strong evidence that the poorest in society travel shorter distances and make fewer trips, compared to the rich. Those on lower incomes also tend to be more likely to use buses, taxis, bicycles and walking as their main mode of transport.

As a method of transport, private car ownership is relatively affordable and available to about 70% of the adult population in the UK (Banister 2019). However, the poorer households use it much less than the rich, in terms of the number of trips, distance and time spent travelling (Banister 2018; Lucas et al. 2019). Banister (2019) sees that as a “double injustice”, where those with lower incomes and lower levels of mobility are penalised through higher road death rates and higher levels of pollution (cf. Lucas et al. 2019).¹

The cost of new vehicles and the current car tax and insurance pricing model is creating further inequality for the low income households. This is especially important in light of the growing use of electric

vehicles. Even though the technology development may render the purchase price of newer electric vehicles similar to petrol or diesel ones, low-income households may still not be able to benefit from those lower costs (Lucas et al. 2019).

For the purpose of this report, **household income** is defined in the National Travel Survey (2018) as ‘the total gross income of all household members before the deduction of tax, National Insurance and pension contributions’. The income is adjusted for household size as well as inflation by using Retail Price index from the month the interview was carried out.

The **low-income household** is defined as a household with income in the lowest 20% in England, averaged over a given year. For example, in the financial year 2019/2020, the first quintile point was £18,125, equivalised to take into account a households’ size and composition (ONS, 2020). That is, all households with their equivalised income lower than this point have been defined as low-income households. 13.4 million individuals, or 6.2 million households, were in this group.

In contrast, the fifth quintile contains 12.9 million individuals, or 5.4 million households, whose gross equivalised income in the financial year 2019/2020 was higher than £49,066. Children and people aged over 70, as well as women, are more likely to be in the lowest income quintile, while low-income households were also more likely to comprise of single adults or single parent families, and were more likely to include persons belonging to non-White ethnic minorities (Lucas, 2012).

¹ For a discussion on fairness, equity and social justice in the context of transportation, see, e.g., Karner et al. (2020) and Hail and McQuaid (2021).

Part two.

The impact of lower income households owning and driving older cars.

We begin by looking at the distribution of car ownership by different income levels. The low-income households are, as defined in Section 3, households with income in the first quintile of all incomes in England, averaged over a given year. The results of the analysis are based on the data from the National Travel Survey (NTS).² The specific tables from the NTS are shown in Table 1.

Over the past 50 years, there has been a steady flow of research on populations who are 'transport disadvantaged', normally interpreted as those with limited access to transport, and the implications of this disadvantage. In this section, we discuss the unequal distribution of travel between social groups, including car ownership, the issue of affordability of the right vehicle and how likely lower income households are to own older cars.

Table 1. National Travel Survey and table title.*

NTS0101 Trips, distance travelled, and time taken in England.

NTS0103 Average number of trips by main modes - index: England, 2002 onwards.

NTS0105 Average distance travelled by main modes - index: England, 2002 onwards.

NTS0107 Average distance travelled by selected private transport modes.

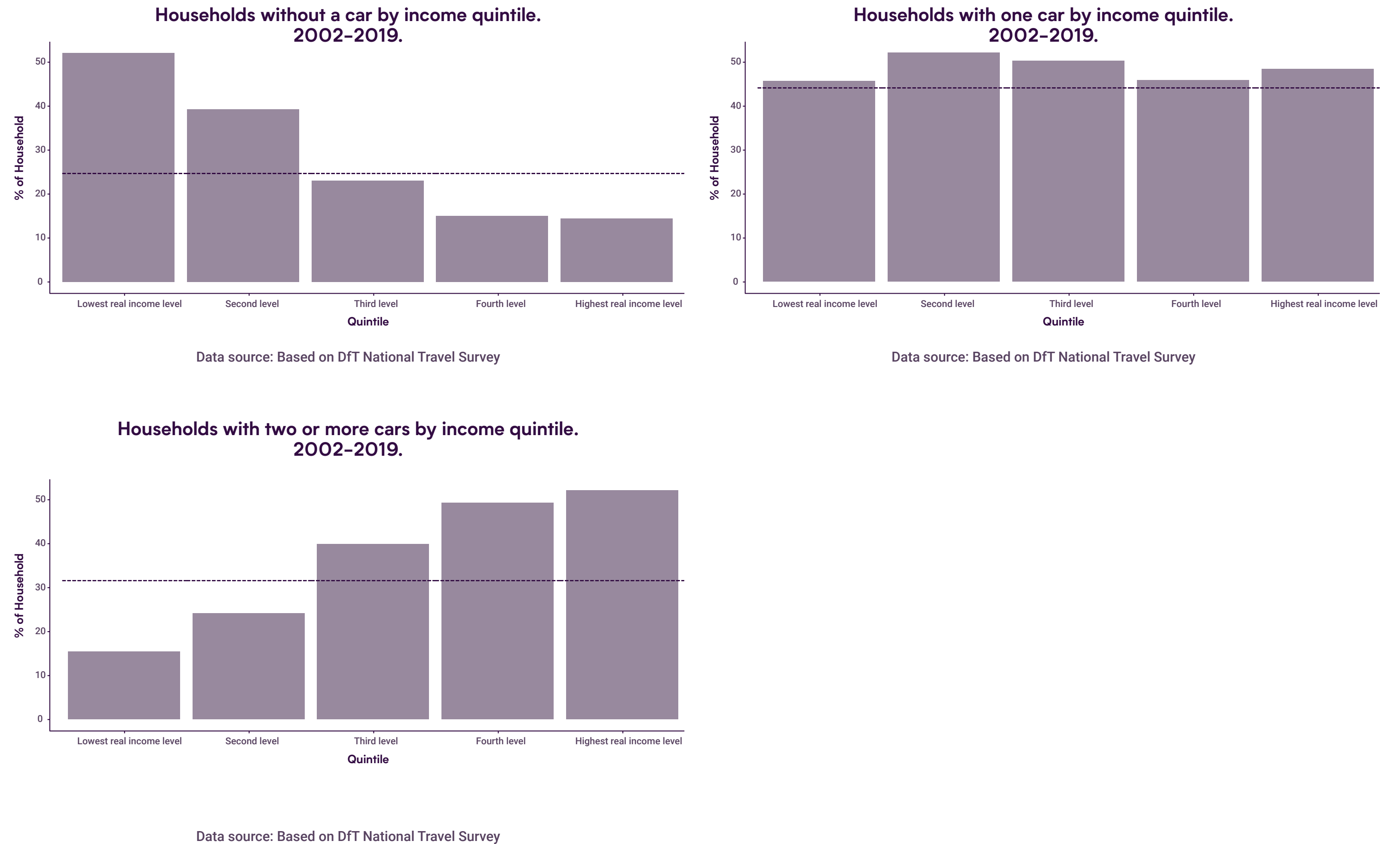
*The figures used in the table are National Statistics and the results presented are weighted. The survey results are subject to sampling error.

² <https://www.gov.uk/government/statistics/national-travel-survey-2019>

We start our analysis by showing the accessibility to a car for different income levels. Figure 1 shows how low-income households have lower levels of access to a car than households with higher incomes. Although the level of non-car ownership in the lowest income households has been steadily decreasing over the last 17 years, over 50% of the lowest income households still do not have access to a car. Regarding the level of single-car ownership, the level does not vary over the income groups and over the years (see Appendix). This can be explained primarily by affordability and other factors such as the availability of public transport (Lucas, 2012).

As mentioned in Section 3, access to cars in the UK is common (Banister 2019). However, low-income households are generally unable to afford newer, more efficient and greener cars (Lucas et al. 2019). We assess the access to more efficient cars by analysing a) car tax rates paid and the b) the age of the cars owned by households with various levels of income.

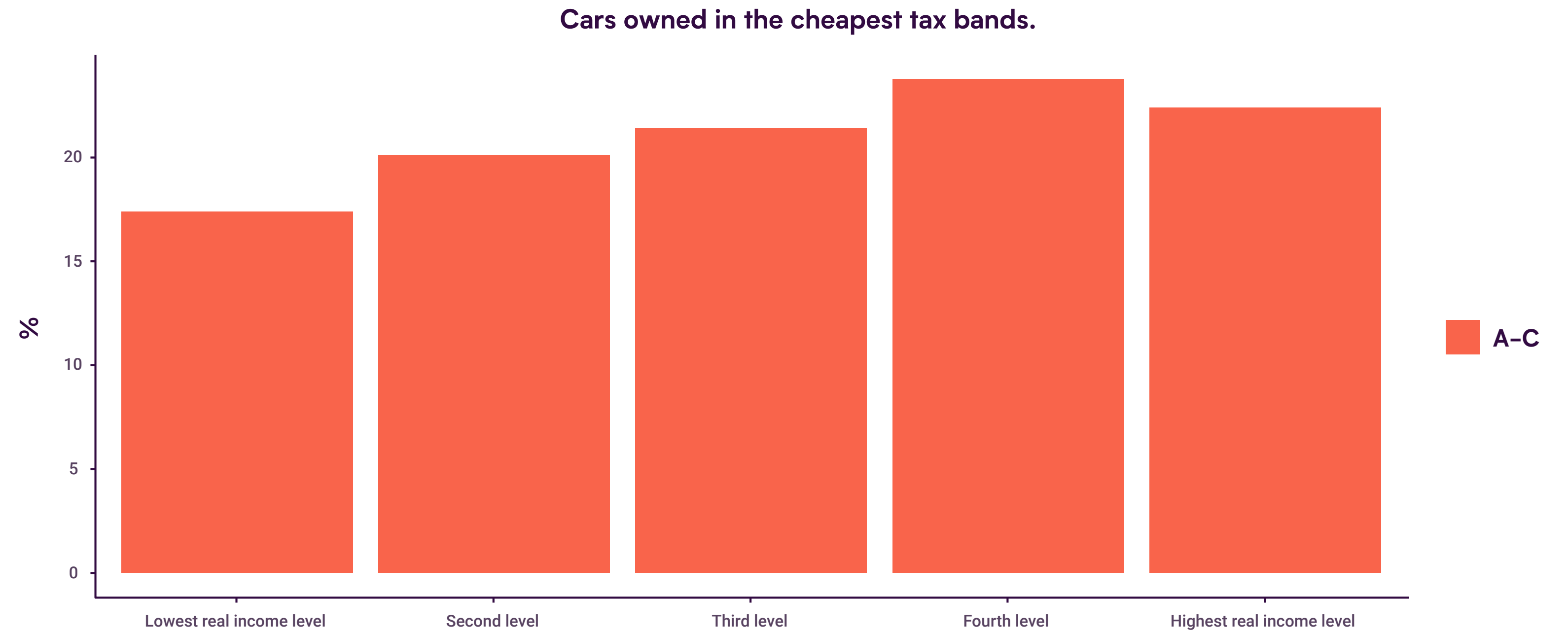
Figure 1. Household accessibility to car by income quintile 2002–2019.



The NTS uses vehicle tax rates for cars registered between 1 March 2001 and 31 March 2017³. These rates are based on fuel type and CO2 emissions. The lowest tax band (A), with CO2 level of up to 100g/km, has no cost, in order to incentivise ownership of electric, emission-free vehicles. Tax bands B and C, for petrol and diesel cars with CO2 emissions of up to 120g/km, cost £20 and £30, respectively⁴. Cars with emissions higher than 120g/km note a sharp increase in vehicle tax to £130, and tax increases with the CO2 emissions. The tax bands for cars registered after 31 March 2017⁵, the vehicle tax is null only for cars with zero CO2 emissions, i.e., for electric cars. For cars that run on other fuels, the tax rates differ by emissions only at the first tax payment upon registration. From the second registration onwards, the road tax for diesel and petrol vehicles is fixed at £155.

Figure 2 shows the percentage of households that own one or more vehicles in the tax bands A-C (with CO2 limits as those before 31 March 2017), averaged over 2015-2019. We found that 21.9% of the households had their car within the three cheapest tax bands, compared to 25.1% for the household in the second quintile and 28.2% for those in the richest households⁶. The differences between the proportions of car ownership in specific tax bands are statistically significant ($p < 0.001$).

Figure 2. Cars owned in the cheapest tax bands by income group.



Data source: Based on DfT National Travel Survey

³ <https://www.gov.uk/vehicle-tax-rate-tables/rates-for-cars-registered-on-or-after-1-march-2001>

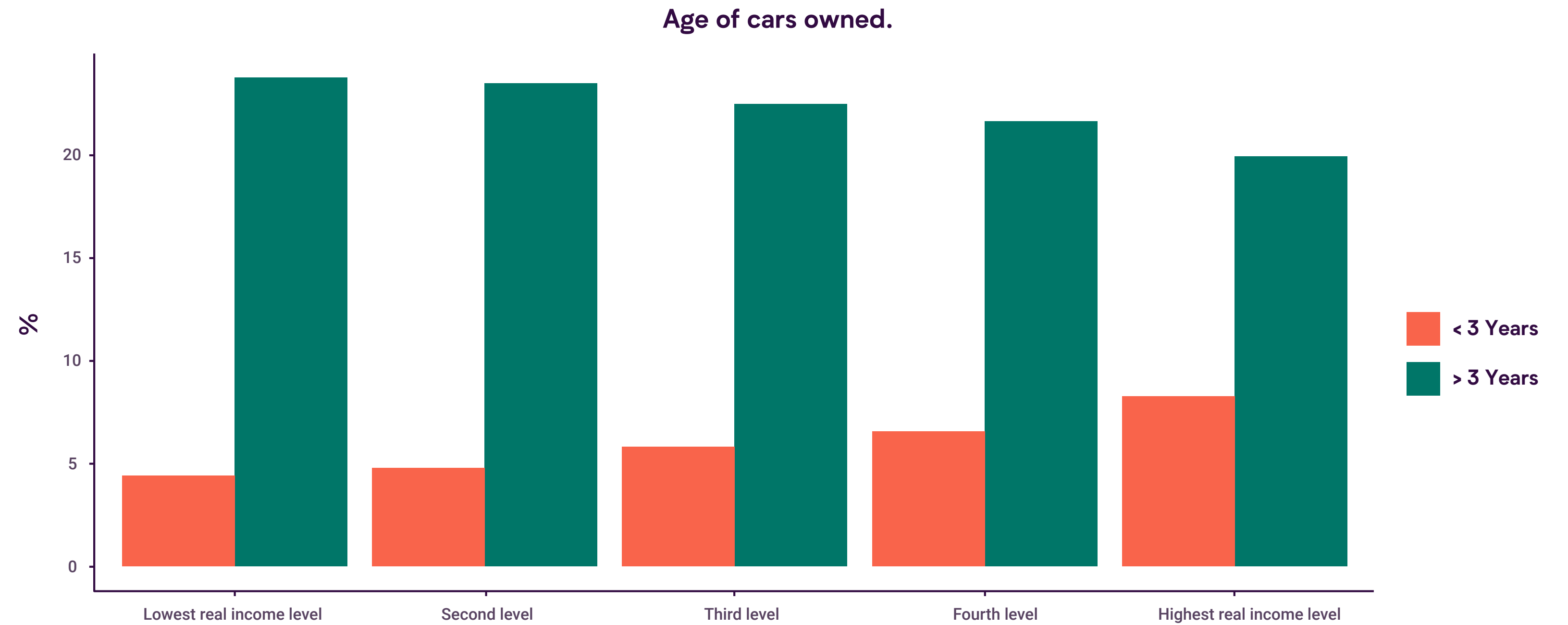
⁴ When paid in a single instalment.

⁵ <https://www.gov.uk/vehicle-tax-rate-tables>

⁶ The underlying data on the tax band for the cars contain large proportion of missingness (see Table xxx in Appendix). However, the proportions were calculated using weights that correct for non-response, and they remain statistically significant even when missing information is retained in calculating those proportions.

The second piece of evidence is the proportion of car ownership by age of the vehicle. In Figure 3, we present the percentage of car ownership by age of the car (i.e. if the car is less than three years old) and household income quintile. We observe that 15.2% of households in the lowest income quintile and 16.7% in the second quintile own a newer car, compared with almost twice as many high-income households (28.1%). This difference is statistically significant (p=0.017).

Figure 3. Proportion of households owning cars younger than 3 years.



Data source: Own elaboration based on NTS data averaged over 2015-2019

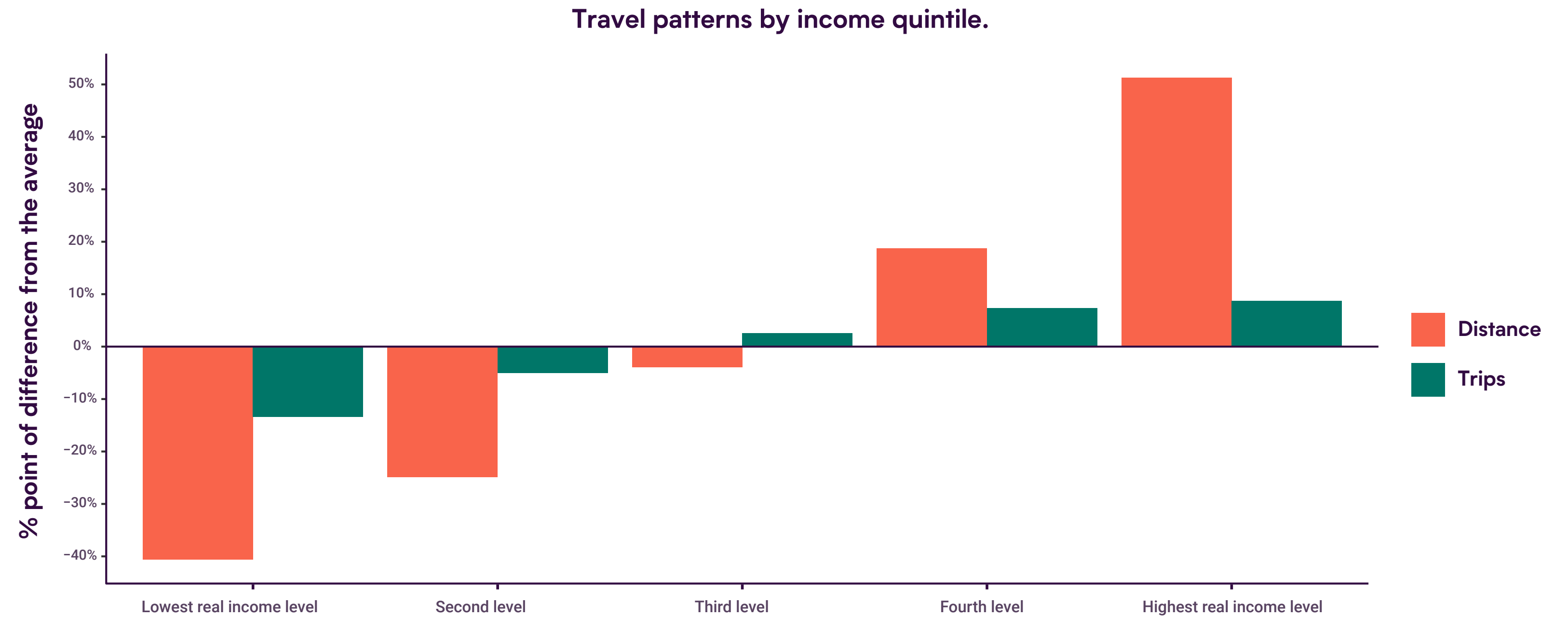
Part three.

Lower income households
driving less and making
fewer trips.

There are several indicators that can be used to measure travel behaviour. In the previous section, we considered whether households owned a car, and how many cars are in the household. Now, we look into total distance traveled and the number of trips made and how they vary with the gross income of the household. We have also used inequality indices to assess the extent of the differences in travel and driving patterns between the poor and rich households.

Figure 4A shows that between 2002-2019, the lowest income households had fewer drivers, made nearly 20% fewer trips and traveled 40% fewer miles in total than the average household. The second quintile households, which also fall below the median income in the UK, also make noticeably fewer trips than those in higher quintiles when compared with the average. The number of trips made is broadly similar, but the lowest income households make around 17% fewer trips per person than the average. Households in the highest quintile make about 10% more trips. Analogous patterns of the association with income can be observed for the average distance travelled by households. Possible explanations for this may be that people in the lower income groups are more likely to be economically inactive, or have already reached the retirement age and have no need to commute.

Figure 4A. Travel behaviour by income quintile.

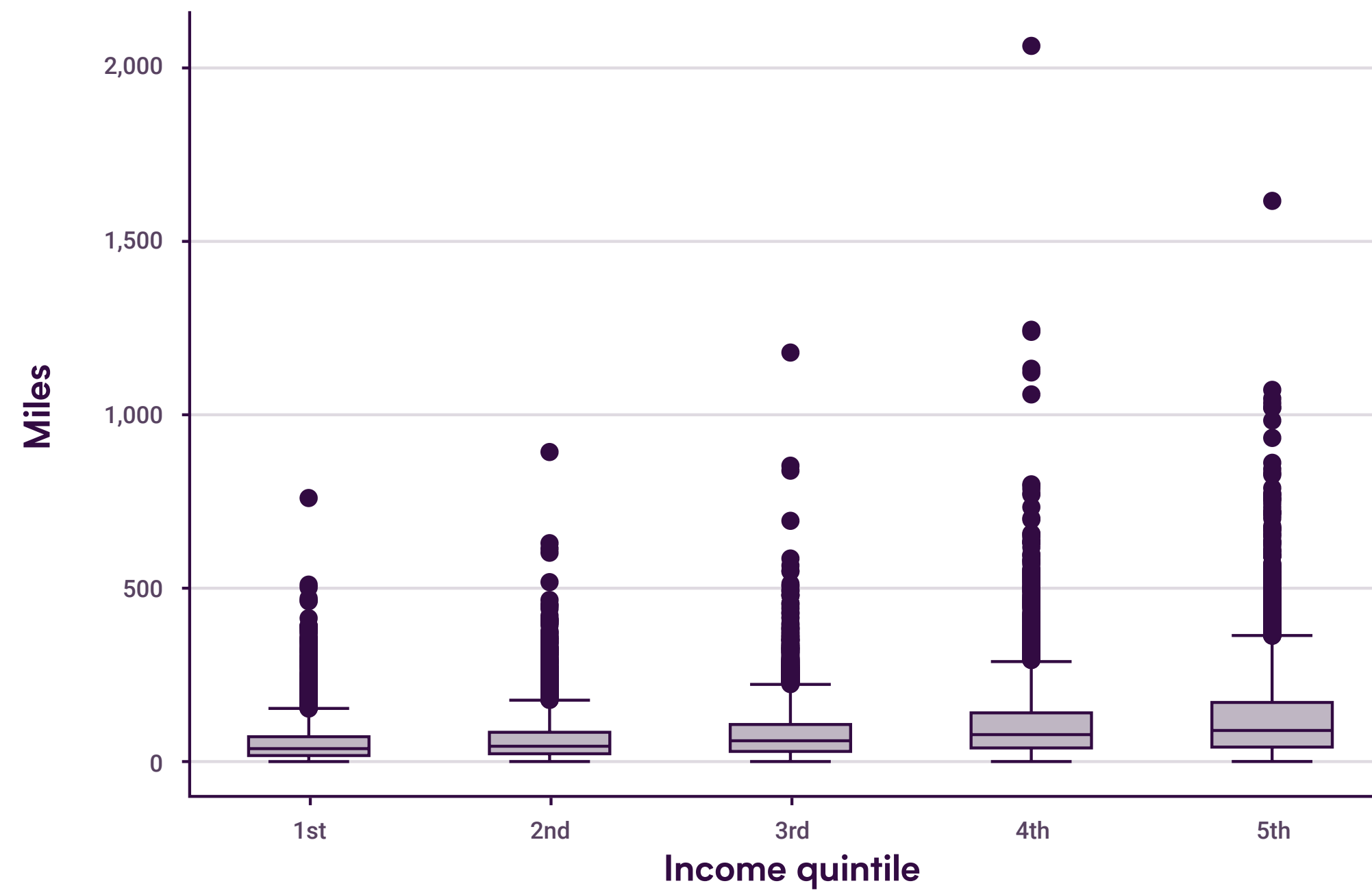


Data source: Based on DfT National Travel Survey

In Figure 4B, we present the distribution of the average distance travelled weekly by car or a van (as a driver) over a period 2015-2019, disaggregated by income quintile. We observe that there is a considerable positive skewness, that is, there are relatively many atypical observations with very high mileage, so-called outliers. The average distance travelled by these outlier households increases with income level. We also observe that the variability in the average distance, as expressed by the “whiskers” of the boxplots, is also the lowest for the poorest households.

Figure 4B. Travel behaviour by income quintile.

Total average weekly distance travelled by car/van per household, 2015-2019



Data source: National Travel Survey 2015-2019

Part four.

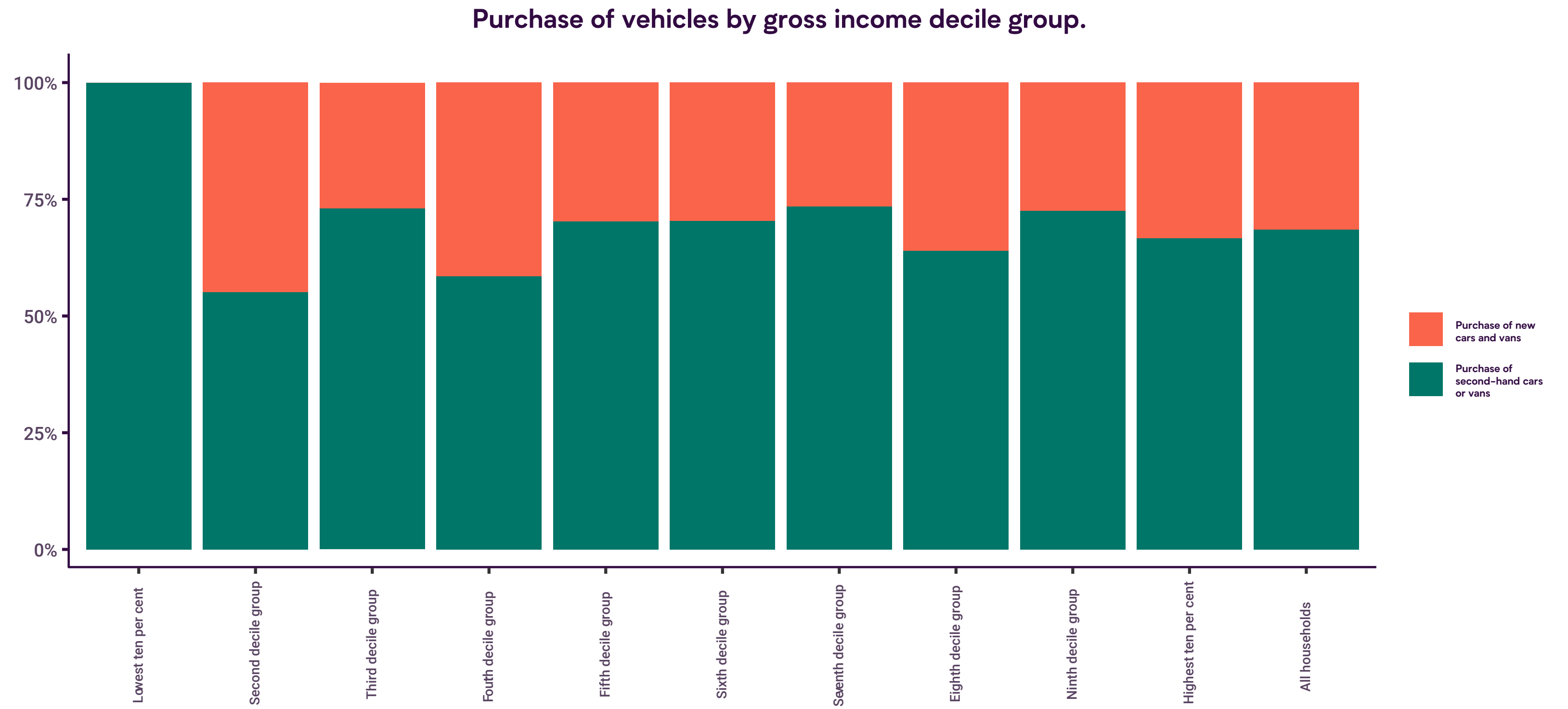
The reality: Lower income households paying a 'Poverty Premium' for driving.

The 'poverty premium' is the additional cost that households on low incomes and in poverty pay for essential products and services, compared with higher income households. Around 14.5 million people in the UK, that, according to the DWP Households Below Average Income survey in 2019/20, live in poverty (JRF 2021).

In this section, we investigate the Family Expenditure Survey in the UK from April 2019 to March 2020. We explore the average weekly household expenditure on goods and services in the UK by income level.

Regarding the purchase of vehicles, many households in England opt to buy cheaper, second-hand vehicles, with virtually no households in the lowest decile purchasing new cars, as depicted in Figure 5.⁷

Figure 5. Purchase of new and second-hand cars by income level.



Data source: Family Expenditure Survey, Table A6

⁷ We note that the sample sizes for the expenditures on cars in the low income deciles are small when compared with higher deciles.

Inequality index.

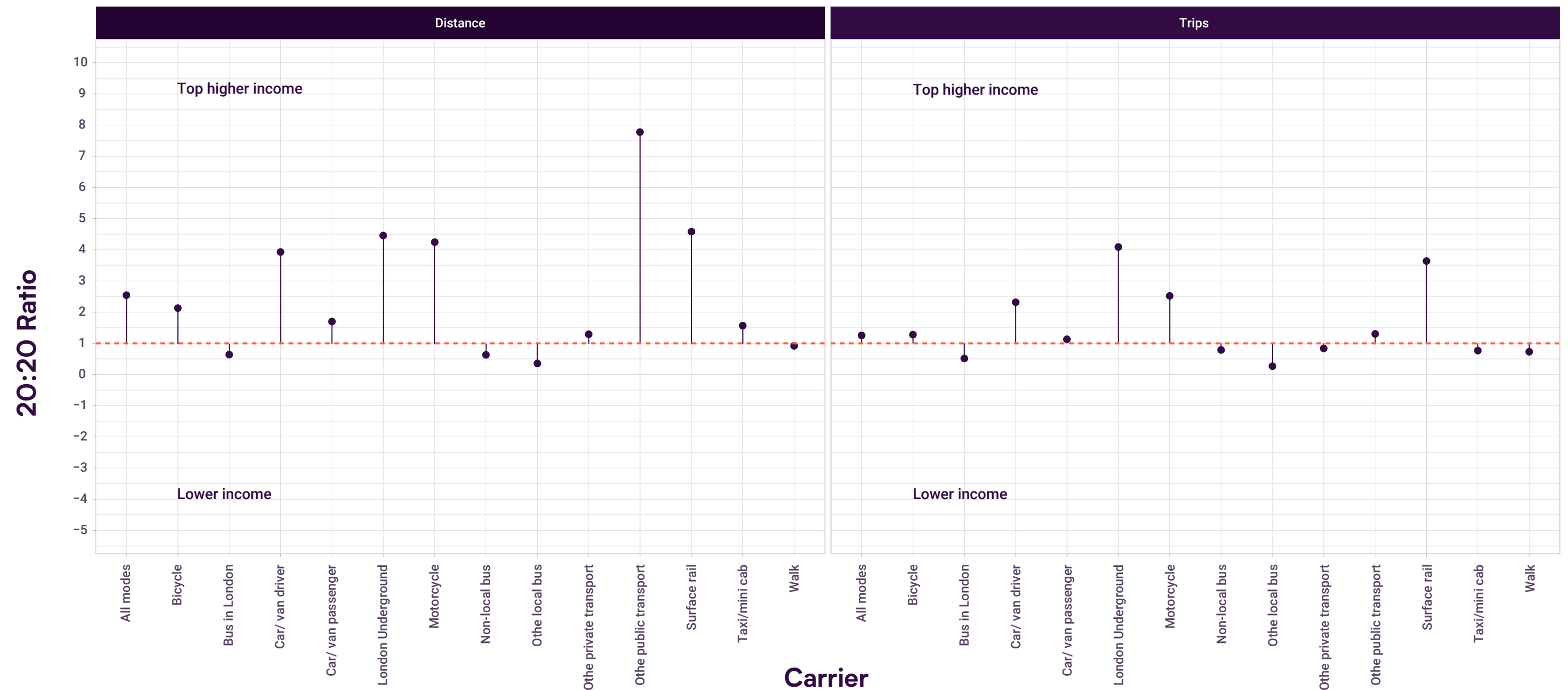
In this section, we apply an inequality index. The aim is to analyse the variations between the income quintiles for the period 2002 to 2019 in England. We consider the 20:20 ratio that measures the correspondence between the highest and lowest income levels.

An index being equal to one means that there is no inequality across the income quintiles. If the index is below 1, the low-income groups are making more trips and travelling further for each mode of transport considered – and the reverse is true if the index is over one.

In Figure 6, we present the 20:20 ratios for the various modes of transport calculated for the distance travelled and trips made. This shows that walking is the most equal mode of transport across income levels, though the index suggests that the households in the lowest quintile are walking marginally more than the richer households. It is the buses that the poorer households use considerably more than higher income households (both in distance and trips), as well as taxis and minicabs, in terms of the number of trips.

Interestingly, those in the top 10% of household incomes cover longer distances when cycling, but do not make many more trips than the lowest 10% income households. The distance covered by the richest households when driving cars is about four times larger than for the poorest households. The highest inequality in travelled distance, with a ratio of more than seven, can be observed for other forms of transport, while any inequalities in the number of trips are slightly smaller.

Figure 6. 20:20 ratio for trips stages and distance in England from 2002–2019.



Part five.

Tackling inequality: Time for change.

As stated in the introduction, policies that aim to tackle problems related to car use, such as emissions, congestion and limited parking space always carry a social cost (Banister 2019).

On one hand, it is generally acknowledged that alternative modes of transport (public transport, walking and cycling) need to be a part of sustainable policies (European Commission 2004). On the other hand, it's also clear that cars are a ubiquitous form of motorised transport and the share of the car travel model remains relatively constant, even despite reduction in absolute terms (Stapleton et al. 2017; Heinen and Mattioli 2019).

Current mobility culture in the UK gives advantages to those more affluent and already highly mobile, but deprives the poor of mobility opportunities (Lucas et al. 2019). This is because pricing strategies for car tax and insurance typically affect those car users who have little choice about the mode of transportation and distance travelled, especially if they are less affluent households (Banister 2019). This exclusion can be a key barrier to training and employment and can lead to social isolation (Lucas et al. 2019; Lutz 2014). Therefore, it is important that the current policies make the current technologies more inclusive so that they can help to reduce inequalities, rather than propagate them.

The key recommendations:

- 1 Create a road tax system that not only takes into account the emissions and weight of the car, but also the number of miles travelled, replacing VED and Fuel Tax. This system would offset the penalty paid by the low-income households who travel less. Road pricing is the best alternative to support the need to replace tax revenue from Fuel Duty (we further point out that VAT is also paid at 20% on fuel), which would otherwise be lost.
- 2 Car tax should be ring-fenced and actually spent on improving our roads — not just for drivers. This revenue is vital to fund the maintenance and building of our road network, and could also be used to improve public transport infrastructure or support the transition to electric vehicles, which would also benefit households without a car.*
- 3 Apply the pay-by-mile tax at time of MOT, as this will be a low tech and straightforward way of levying the fee and could be applied as a per-mile rate once annual mileage is recorded. Drivers from low income households who travel a lot still travel less than those in more affluent ones (Figure 4B), so are unlikely to be penalised by a pay-by-mile model. The so-called rebound effect (i.e. increase in vehicle fuel efficiency leading to more car travel) is likely to be smaller for low-income households** when compared with more affluent ones.
- 4 Provide incentives for low-income households, especially those in forced car ownership (e.g. where there are few public transport services available or it is unsafe to walk and cycle) to replace their cars with newer and more efficient ones. This can be done based on the existing Motability Scheme for those in receipt of a qualifying mobility allowance.

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About By Miles.

By Miles is the UK's leading provider of pay-by-mile car insurance, aimed at those who drive under 7,000 miles a year.



By Miles is the UK's leading provider of pay-by-mile car insurance, aimed at those who drive under 7,000 miles a year. The company regularly campaigns for fairer treatment of UK motorists, having launched a number of initiatives since its pay-by-mile policies launched in 2018.

During lockdown, CEO and founder James Blackham encouraged insurers to partially refund premiums while people weren't driving. By Miles has been petitioning Grant Shapps to introduce pay-by-mile car tax for several years, and recently submitted a detailed proposal to the Transport Committee on how a pay-as-you-go model could be introduced.

The company also published its Low Mileage Penalty report in 2020, suggesting that over 19 million low mileage UK drivers were being overcharged for car insurance.

The pay-by-mile policy is simple. Drivers pay a small upfront sum for an annual policy and are then billed at the end of each month for the miles they drive.

Over 100 million miles have been insured on By Miles policies to date. The policies are fully comprehensive, underwritten by a panel of experienced insurers including Zurich Insurance Plc, and as of 29th July 2021 were rated 4.5 out of 5 stars on Trustpilot. By Miles was voted 'Car Insurance Provider of the Year' at the Insurance Choice Awards 2020 and 2019.

Find out more and get a quick quote in under a minute at www.bymiles.co.uk

Further reading:

James Blackham campaigns for insurance refunds during lockdown:

www.theguardian.com/money/2020/sep/05/car-insurance-claims-premiums-uk-lockdown

Sign the petition to introduce pay-by-mile road tax for a fairer, greener future:

www.change.org/p/introduce-a-pay-per-mile-road-tax-to-cut-emissions-and-build-a-fairer-greener-future

Read the detailed proposal submitted to the Transport Committee about how pay-by-mile car tax could work:

committees.parliament.uk/writtenevidence/22813/pdf

Read the 2020 By Miles Low Mileage Penalty report:

www.bymiles.co.uk/low-mileage-penalty

Authors' note

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The issues we uncovered as part of our research are hugely important and relevant to today's society.

One key theme that kept presenting itself throughout, is that all the existing systems for taxing road users seem purely car-based. This means that the weight, type and fuel type of a vehicle is accounted for, rather than focussing on the behaviour and habits of the driver.

When you explore this theme further, it becomes clear that this system is unsustainable and ultimately will not result in fulfilment of the desired outcome, which is to collect tax from road users, while encouraging drivers to do whatever they can to reduce their car's emissions. Our research shows that lower income households drive less often and cover shorter distances, so on a base level they are paying more in car tax, though they use the roads the least.

Current mobility culture in the UK gives advantages to those more affluent and already highly mobile, but deprives the poor of mobility opportunities. If you take the vehicle purchasing process for instance, many households in England opt to buy cheaper, second-hand vehicles, with virtually no households in the lowest income decile purchasing new cars.

Lower cost cars tend to be less efficient and create more emissions, so to influence greener driving we must either incentivise less driving or make hybrid and electric vehicles equally affordable.

It's crucial we solve issues like this, as they can often have serious implications for social exclusion, equality of opportunities, wellbeing and quality of life.

However, policies that aim to tackle problems related to car use, such as emissions, congestion and limited parking space always carry a social cost.

This research supports the view that policy needs to put people first, especially those from disadvantaged backgrounds, not cars.

Contact details.

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