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Structural effects of the Covid pandemic: insights from the UK

Netherlands Mobility Panel Symposium, 13 September 2023

Prof Jillian Anable, Chair in Transport & Energy

Institute for Transport Studies, University of Leeds

 @jillian_anable

 J.L.Anable@Leeds.ac.uk



Disruption + Panel studies = Happy Marriage!

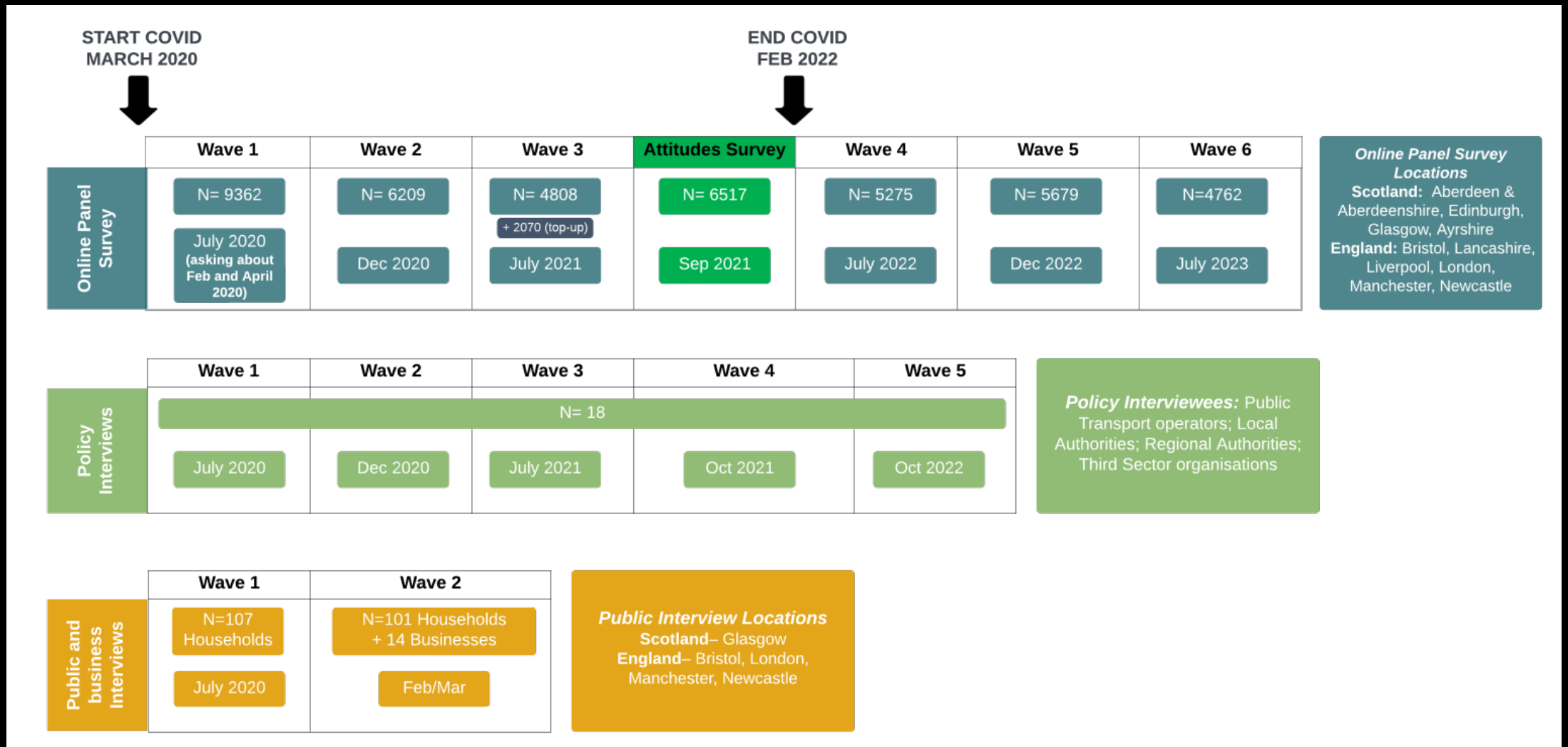
1. TRANSAS Panel Methodology
2. Mode substitution: Has the fall in public transport use been replaced by other modes?
3. Are people carrying out more activities but with less travel and/or fewer cars since Covid?
4. Does working from home lead to less travel? Do those who increase their WFH end up moving further from where they work?
5. Evidence gaps and policy implications

Turning a crisis into an opportunity ... the chance to study behaviour change as it happens

1.

The 'Transport, Travel & Social
Adaptation Study' (TRANSAS)
Methodology

TRANSAS Qualitative & Quantitative data collection waves

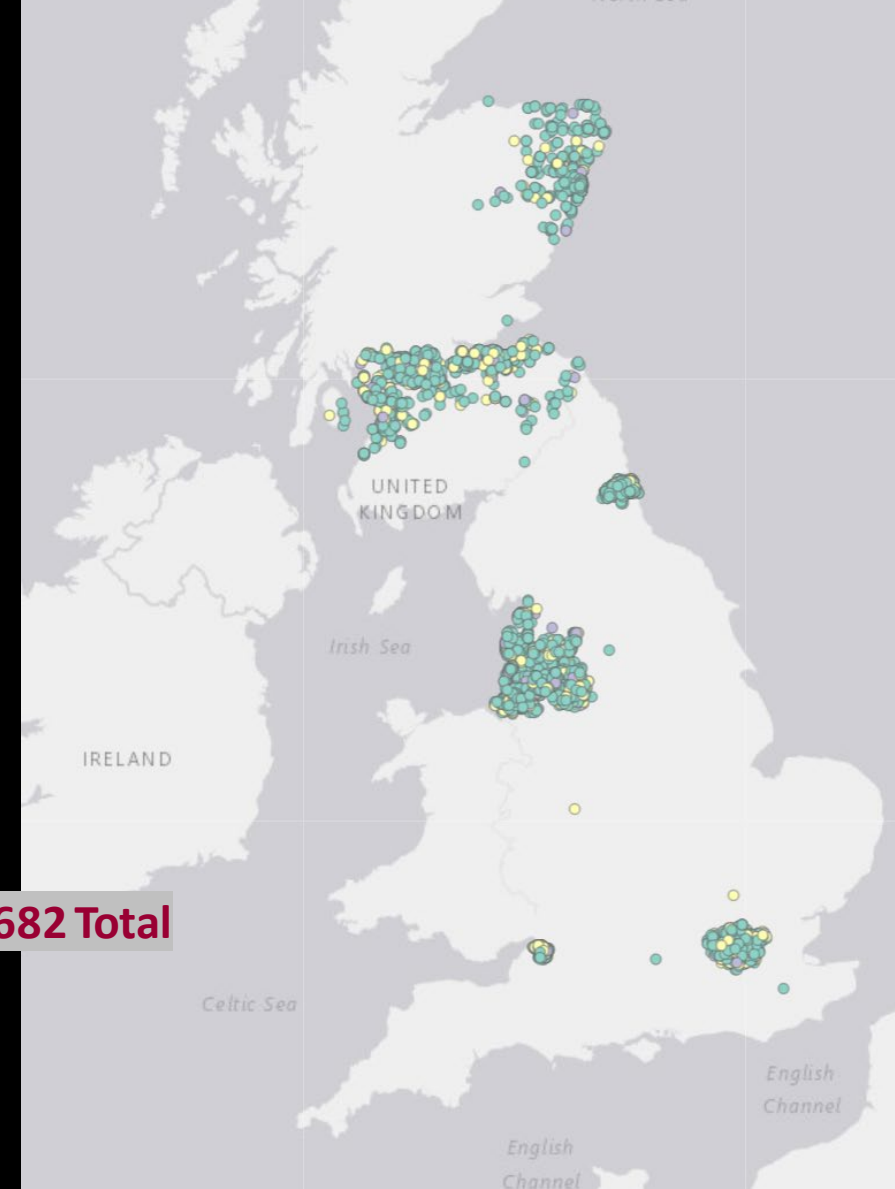


Sample sizes per wave

| | W1 | W2 | W3 | W4 | W5 | W6 | Attitudes |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Aberdeen | 968 | 622 | 688 | 507 | 572 | 463 | 630 |
| Edinburgh | 973 | 655 | 711 | 558 | 607 | 508 | 687 |
| Glasgow | 982 | 665 | 697 | 561 | 599 | 515 | 675 |
| Ayrshire | 659 | 492 | 506 | 382 | 418 | 345 | 472 |
| Bristol | 966 | 604 | 664 | 491 | 549 | 489 | 615 |
| Lancashire | 960 | 647 | 722 | 578 | 625 | 532 | 691 |
| Liverpool | 968 | 659 | 730 | 568 | 600 | 517 | 689 |
| Manchester | 959 | 624 | 759 | 592 | 566 | 483 | 743 |
| Newcastle | 977 | 656 | 733 | 536 | 591 | 505 | 681 |
| London | 950 | 585 | 668 | 502 | 552 | 405 | 634 |
| Total | 9362 | 6209 | 6878 | 5275 | 5679 | 4762 | 6517 |
| Scotland | 3582 | 2434 | 2602 | 2008 | 2196 | 1486 | 2464 |
| England | 5780 | 3775 | 4276 | 3276 | 2438 | 3276 | 4053 |

=44,682 Total

Sample locations:
10 x Large urban areas and their
regional hinterlands



Sample sizes per cohort

The following analysis will focus mainly on results up to Wave 5, particularly on those people who answered both W1 and W5

| W1 & W5 only | W1 & W5 + Attitudes | All 5 waves | All 5 waves + Attitudes |
|--------------|---------------------|-------------|-------------------------|
| 4,481 | 3,636 | 2,997 | 2,866 |

Some limited analysis has so far been undertaken with W6 and some results focus on those who have answered both W1 and W6

| W1 & W5 only | W1 & W5 + Attitudes | All 5 waves | All 5 waves + Attitudes |
|--------------|---------------------|-------------|-------------------------|
| 3,760 | 3,085 | 2,361 | 2,277 |

Each Wave and cohort sub-sample is weighted according to region x age x gender





Which components of personal travel demand may change due to pandemic or cost of living crises?



Covid 19

Cost of living

| | |
|--|--|
| <ul style="list-style-type: none"> • Fewer commute trips due to WFH • More time to walk children to school • Rediscovery of local facilities • More use of online services (shopping) • Lower peak-travel demand/ congestion • Less car traffic = better conditions for bus and active travel • Less need for a second car.. | <ul style="list-style-type: none"> • Lower PT patronage = fewer services • Regular PT commuters become occasional car commuters • Homeworkers move away from work • More local 'run around' car trips • More 'revenge' weekend leisure/ long distance travel + 'Staycations' • Spare cash to spend (e.g. on flying ..) |
| <ul style="list-style-type: none"> • Less discretionary (car) travel • More 'eco-driving' • More car sharing | <ul style="list-style-type: none"> • Older cars are kept for longer |

Main Survey Themes

General Travel

- Driving licence, car and bike owning, 'acquiring' and 'shedding'; types of cars owned, reasons for owning/ not owning, car sharing
- Frequency of trips by each mode (including air travel in UK and abroad)
- Frequency of trips on each mode for each journey purpose

Work Status & Travel

- Work status individual and HH
- Commute mode, satisfaction, distance, average time taken
- Frequency of online versus physical travel for/to work

Working from home (WFH)

- Day of week regularity of pattern of commuting and WFH
- Frequency of meetings (physical and online)
- Attitudes towards WFH and change in use of local amenities
- Changes to purchase of public transport and parking permits/ tickets

School & Travel

- Journey mode, and attitudes towards school run
- Split into childcare, primary and secondary

Shopping & Travel

- Frequency of grocery shopping for different types of shops (including online)
- Attitudes towards online grocery shopping
- Distance to different shops and modes used.

Other Activities

- Frequency of online activities (e.g. banking, healthcare)
- Frequency of social contact (online and face-to-face)
- Frequency of exercise and activities
- Frequency of leisure activities and holidaying at home and abroad

Local Area

- Attitudes towards and connectivity with neighbourhood
- Attitudes towards space and green space in home environment and surrounding areas

New home & desire to move

- Whether moved house since last survey
- If moved what factors were important when considering move

Covid 19

- Physically contracted C19, worry of contracting C19
- Ease/difficulty of following C19 rules
- Concern about CV19 on public transport, overcrowding

Cost of living crisis

- Expectations and concern about fuel, travel, food and energy price trends
- Actions performed to save energy
- Support for policy interventions to alleviate price rises and redistribute burden

Attitudes

- Attitudes towards use and perception of different modes (users and non-users)
- General Travel Attitudes, Satisfaction with journeys/ modes; views on policy priorities

Socio-demographics

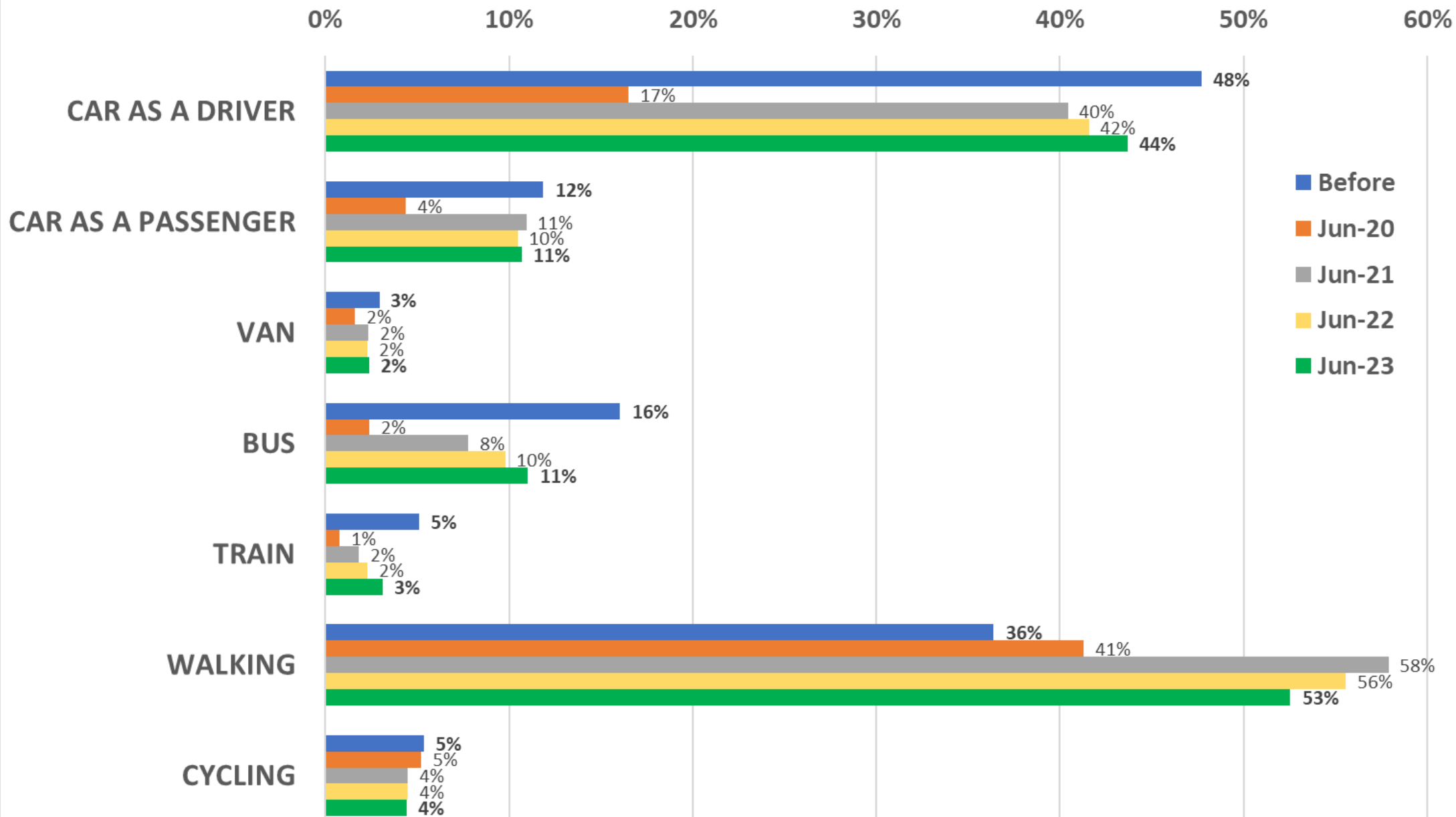
- Age, gender, ethnicity, health, housing tenure, garden/ outside space, education, income, household size; household structure, dog ownership, caring responsibilities outside of home

2.

Mode share pre & post Covid:
suppression, substitution or
transition?

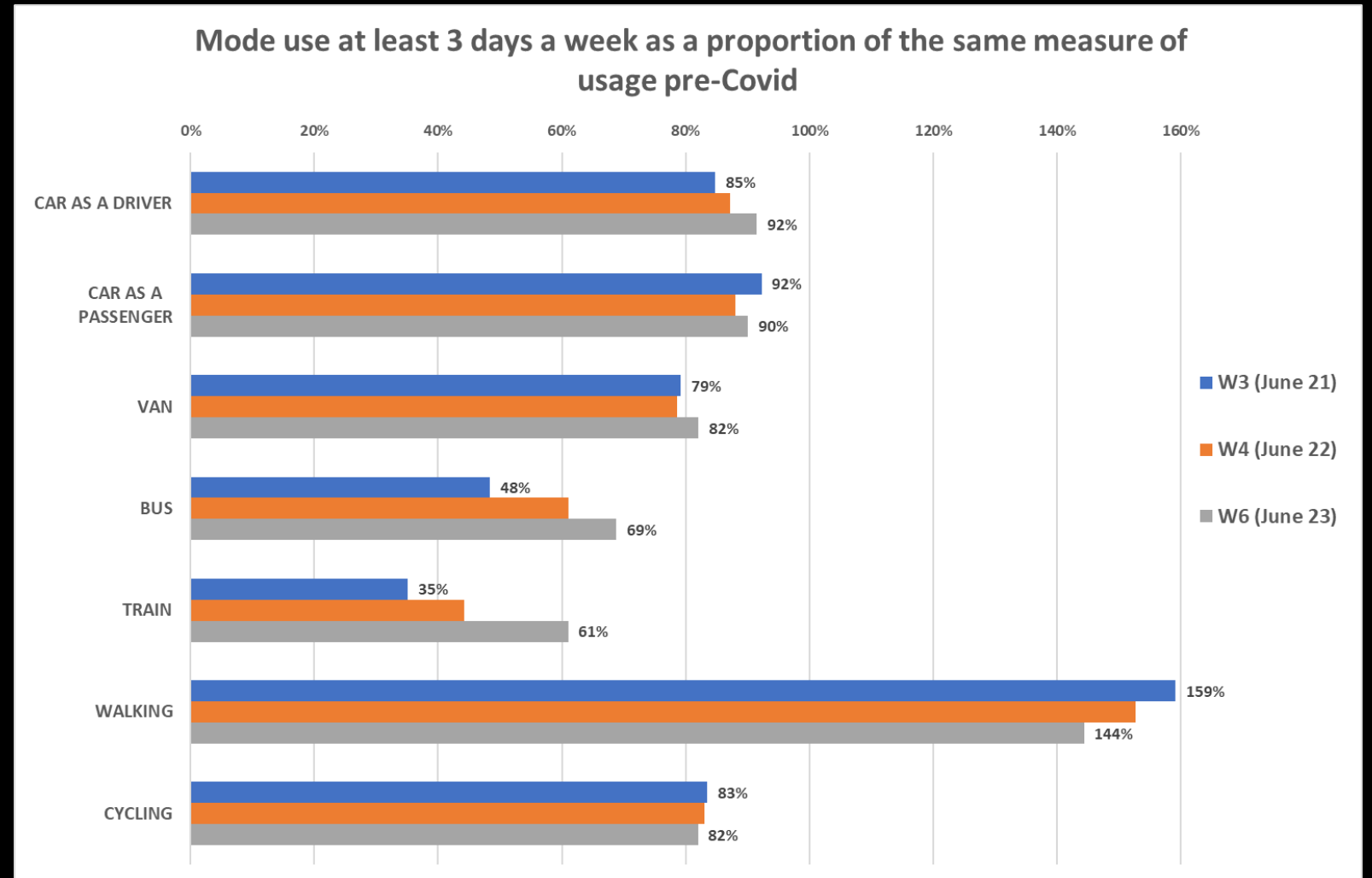
Mode use at least three days a week 'Before Covid' and then each June Wave

(Weighted, N= 9,362 (Before), 9,362 (Jun-20), 6,878 (Jun-21), 5,275 (Jun-22), 4,762 (Jun-23))



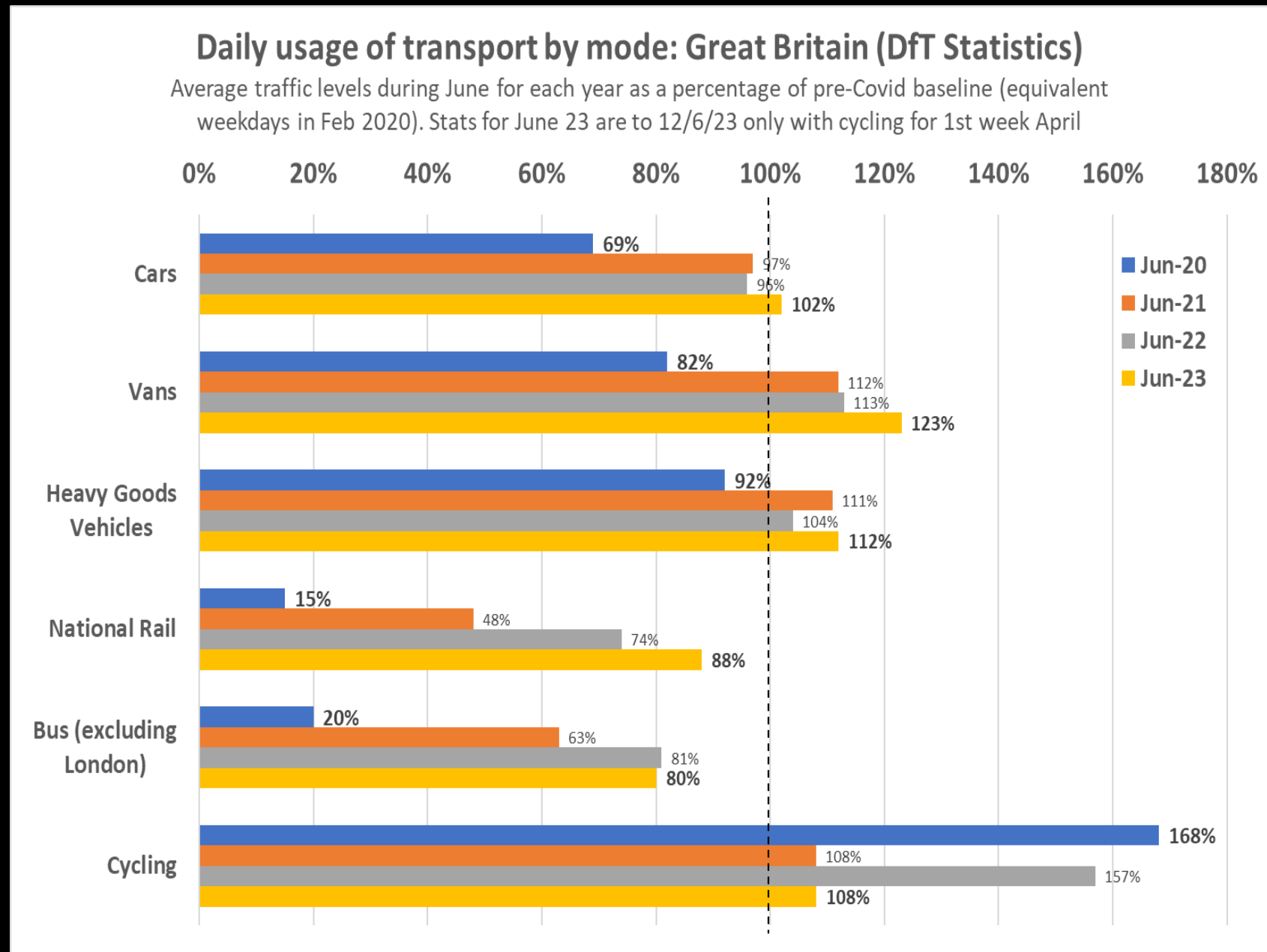
June 21 – June 23: Mode use at least 3 days a week as a proportion of the same measure pre-Covid

- Car use still almost 10% down
- Bus recovering slightly better than train but public transport use still far below pre-Covid
- Walking the greatest 'winner' but starting to reduce
- Cycling has not increased



Official national traffic statistics

- Car use in June 2023 – only just ‘back to around the same on average as pre-pandemic levels
- However, car traffic is still significantly lower during the weekday peak
- Vans and HGVs are higher and it is these modes which give the perception of higher overall traffic levels
- Cycling – variable (due to low numbers and weather effects)



Department for Transport (2023) Domestic Transport Usage by mode. June 2023.

www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic/domestic-transport-usage-by-mode

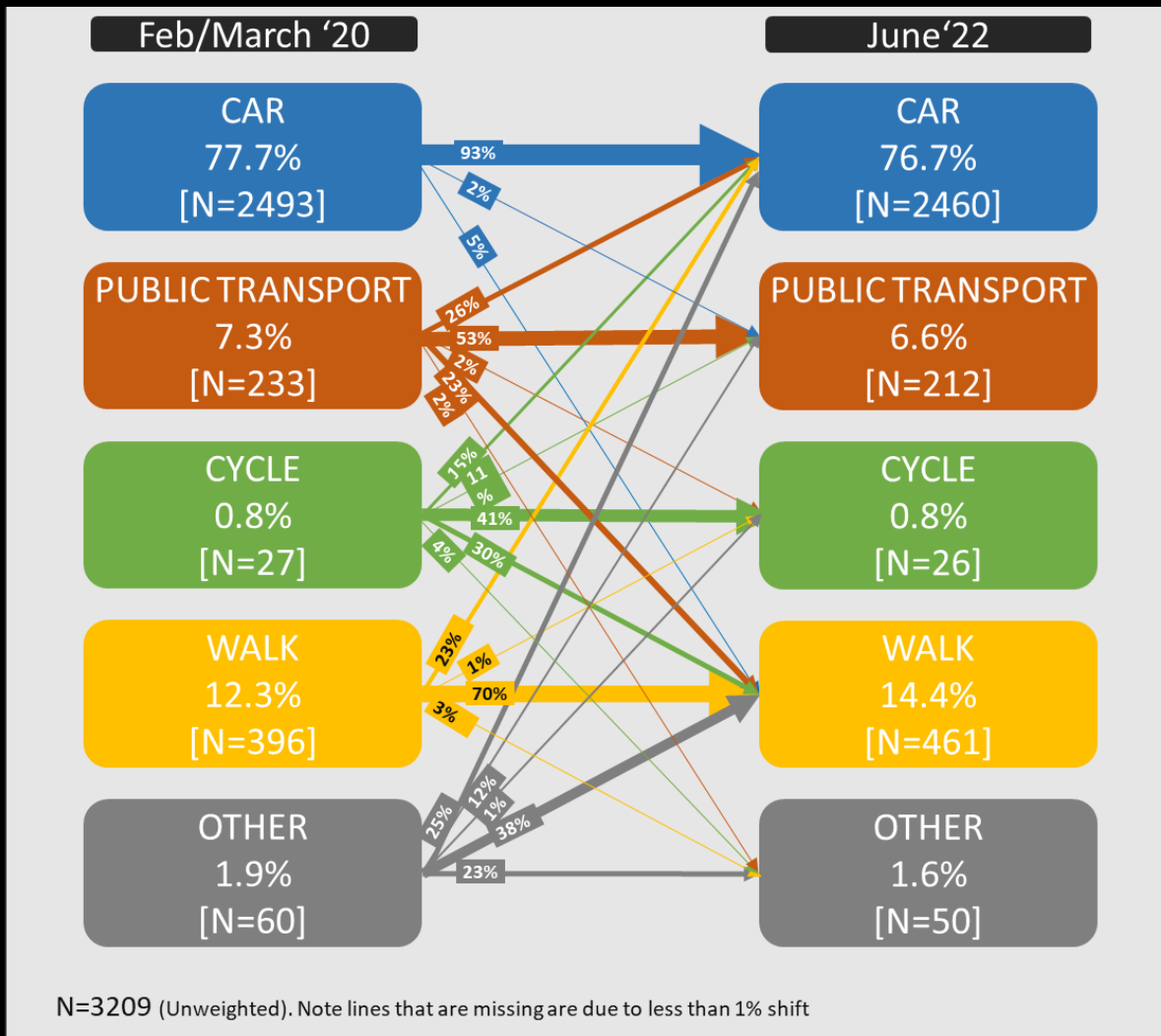
3.

Less is more?

(More activity but with less travel/
fewer cars?)

Changes to traffic mode for each journey purpose: Grocery shopping (to June 22 (W5))

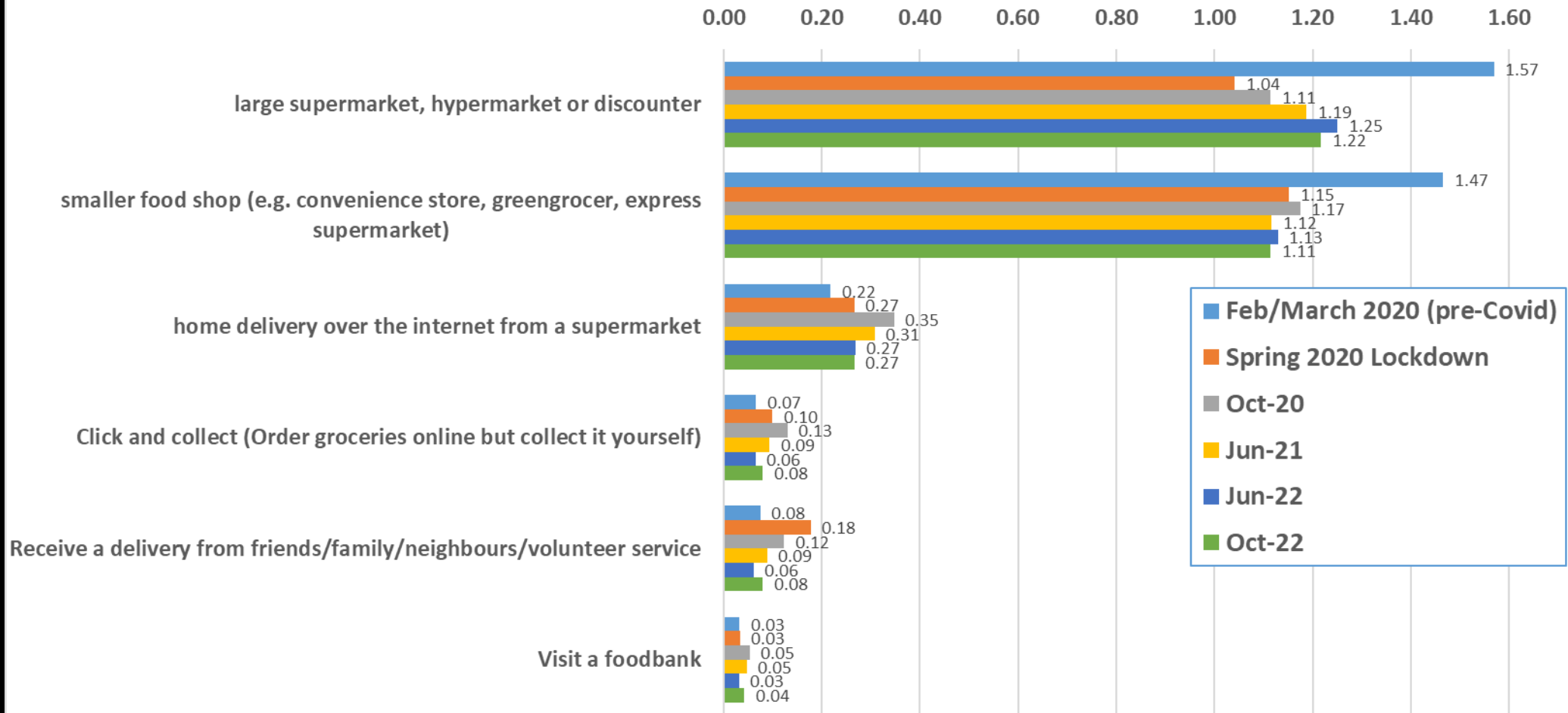
CHURN IN MODE TO SUPERMARKET from BEFORE to June'22



- Least amount of 'churn' seen in those who use a car as main mode to access supermarket
- Increase in people walking for large supermarket
- 5% of those who previously drove, now walking

People are still visiting bricks and mortar stores less frequently than pre-pandemic ~20% reduction in large supermarket trips (to W5)

Average (mean) days per week each Grocery channel was used at each time point
 (Weighted, N=9,362 (Before & During); 6,209 (October'20)); 6,878 (June'21); 5,275 (June'22), 5,680 (Oct 22))

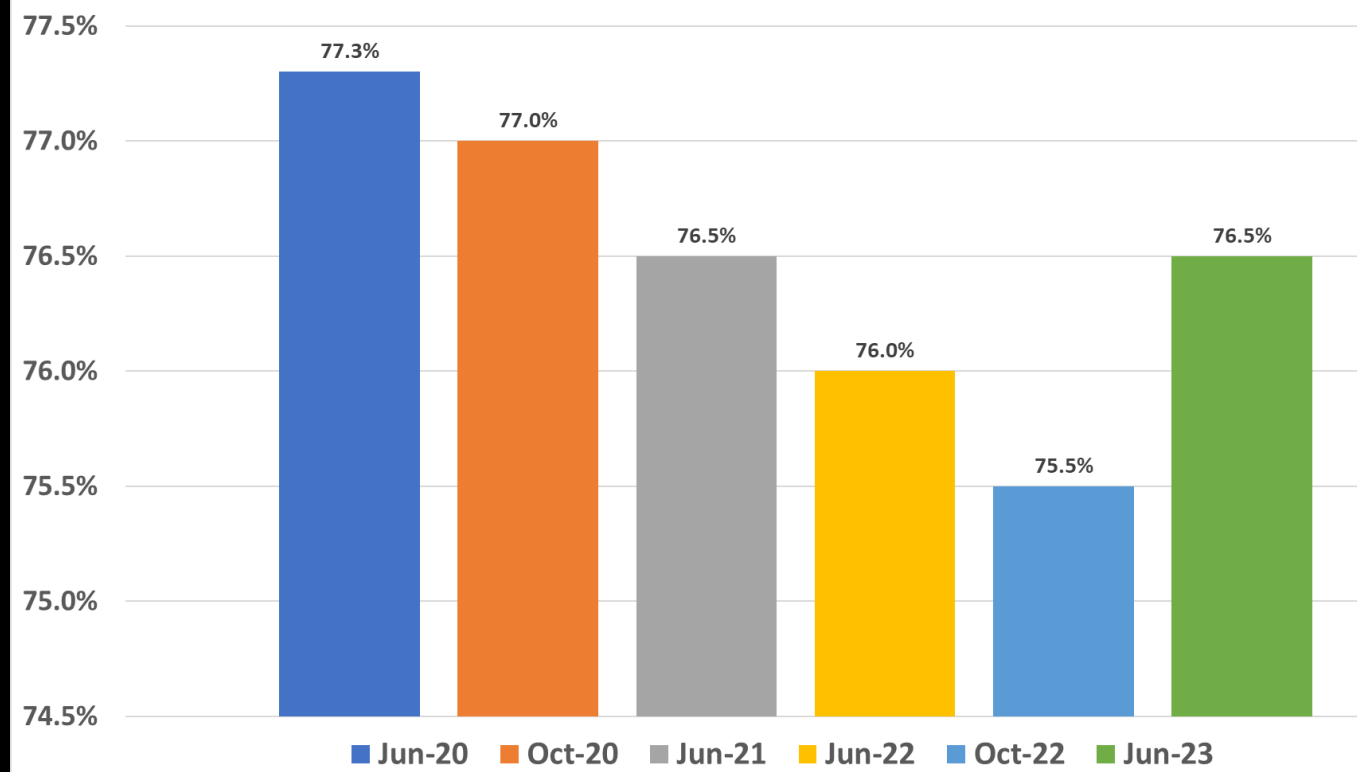


Changes in % of households with at least one car to June 2023 (to W6)

Overall, average household car ownership has reduced slightly until recently...

...because the number giving up a car has exceeded those acquiring one

Proportion of households with at least one car in each survey wave
(Weighted, N=9,362 (Before), 6,209 (Oct-20), 5,725 (Jun-22), 5,679 (Oct-22), 3,863 (Jun-22))



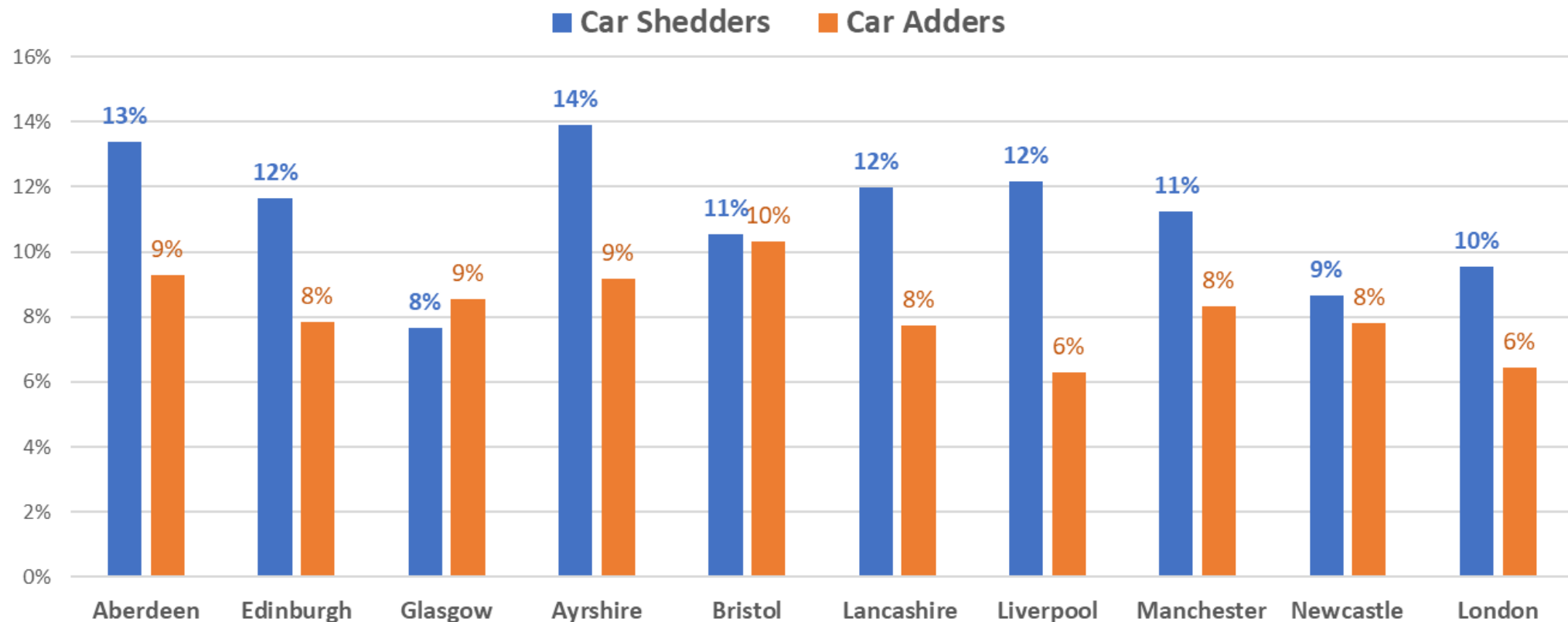
| Categories | Frequency | Percent |
|--------------|-----------|---------|
| Car Shedders | 542 | 12.1 |
| Stayed Same | 3454 | 77.1 |
| Car Adders | 484 | 10.8 |
| Total | 4481 | 100.0 |

Those who answered all of W1 and W5 only (N=4,481)

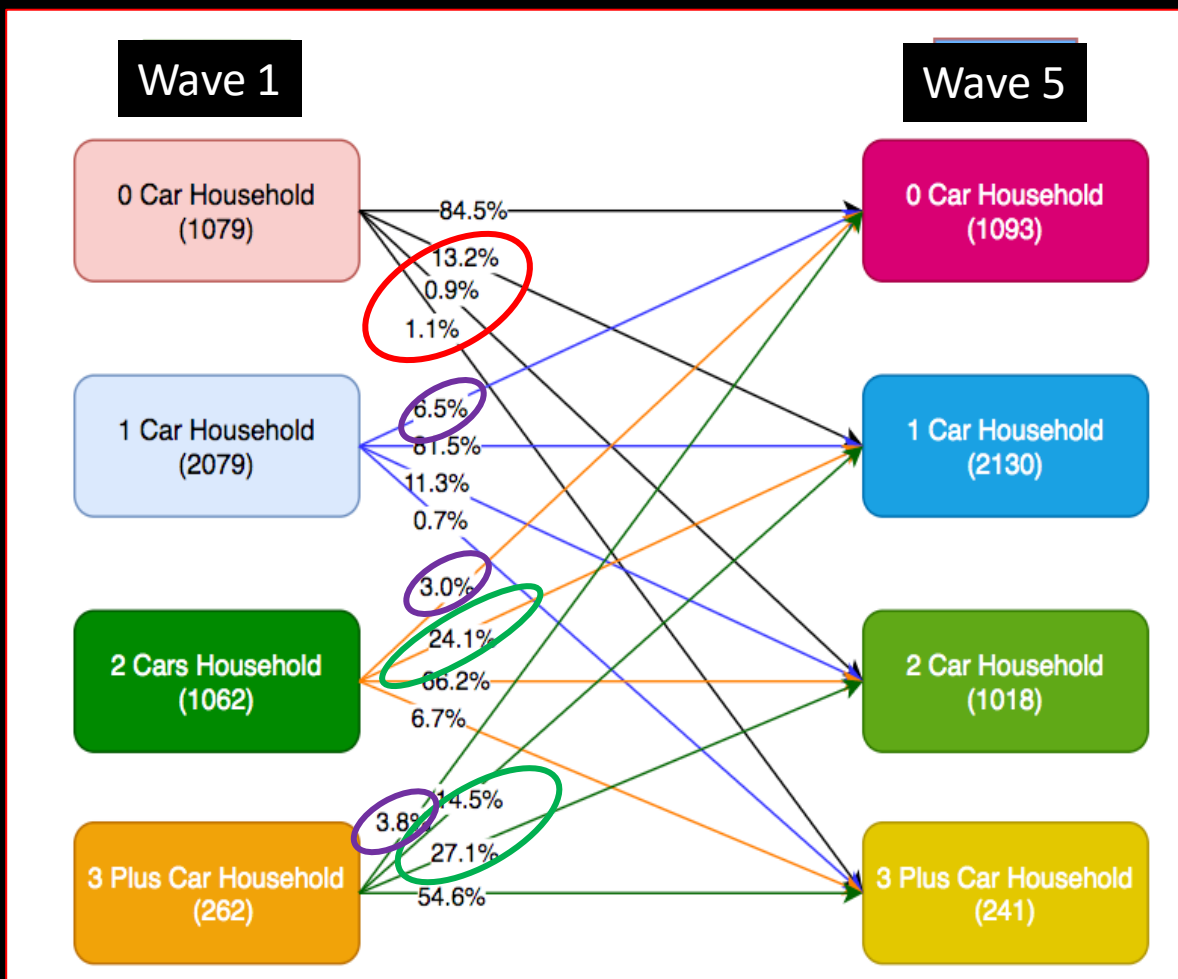
Car 'Shedders' greater than 'Adders' in most, but not all, locations (W1-W5)

Locational variation in changes in household car ownership

(N=4,481 (respondents completing both W1&W5))



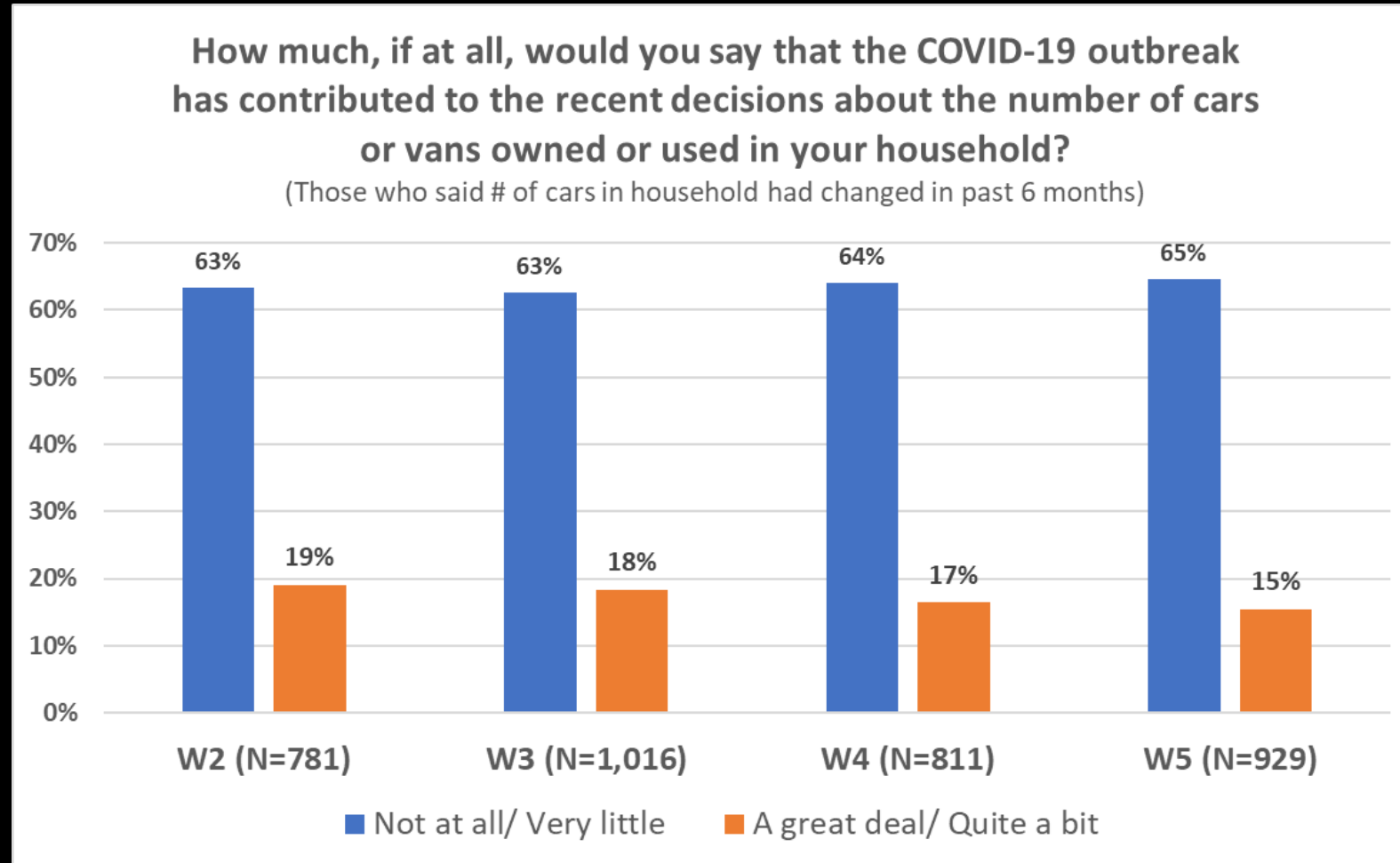
Churn in car ownership between W1 and W5 (Oct 22)



- 15.5% of 'No car' households became car owners (n=167/1,079)
- 5.2% of car owning households went to 'No car' (N=178/3,402)
- 27.1% of '2+ car' households got rid of a car (the greatest change) (N=365/1,342)

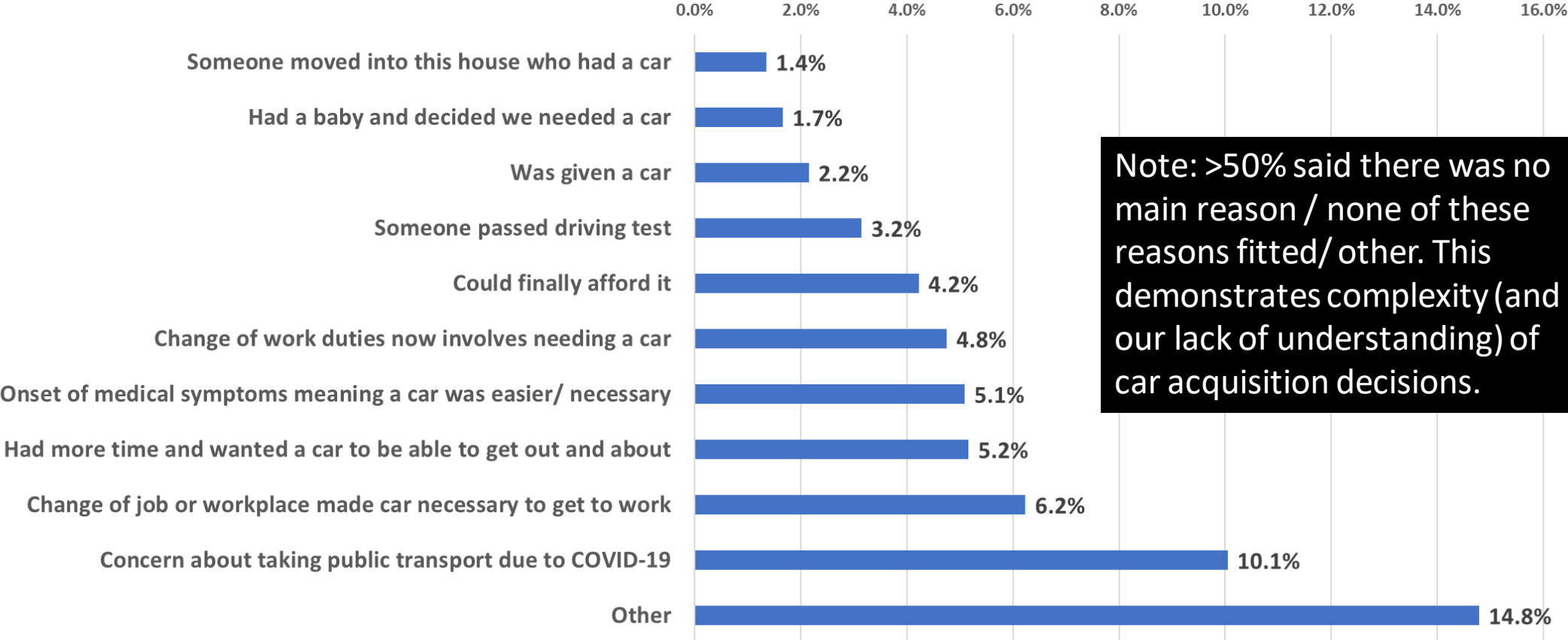
N= 4,482 households who answered both W1 & W5 only; weighted)

How far was the Covid pandemic a factor in changes in car owning? (to W5 (Oct 22))



Reasons for getting a car (W5 (Oct 22))

Which ONE, if any, of the following best describes the reason for obtaining or keeping hold of your car/van over the past six months?
(N=3,101 W1-W5 combined)

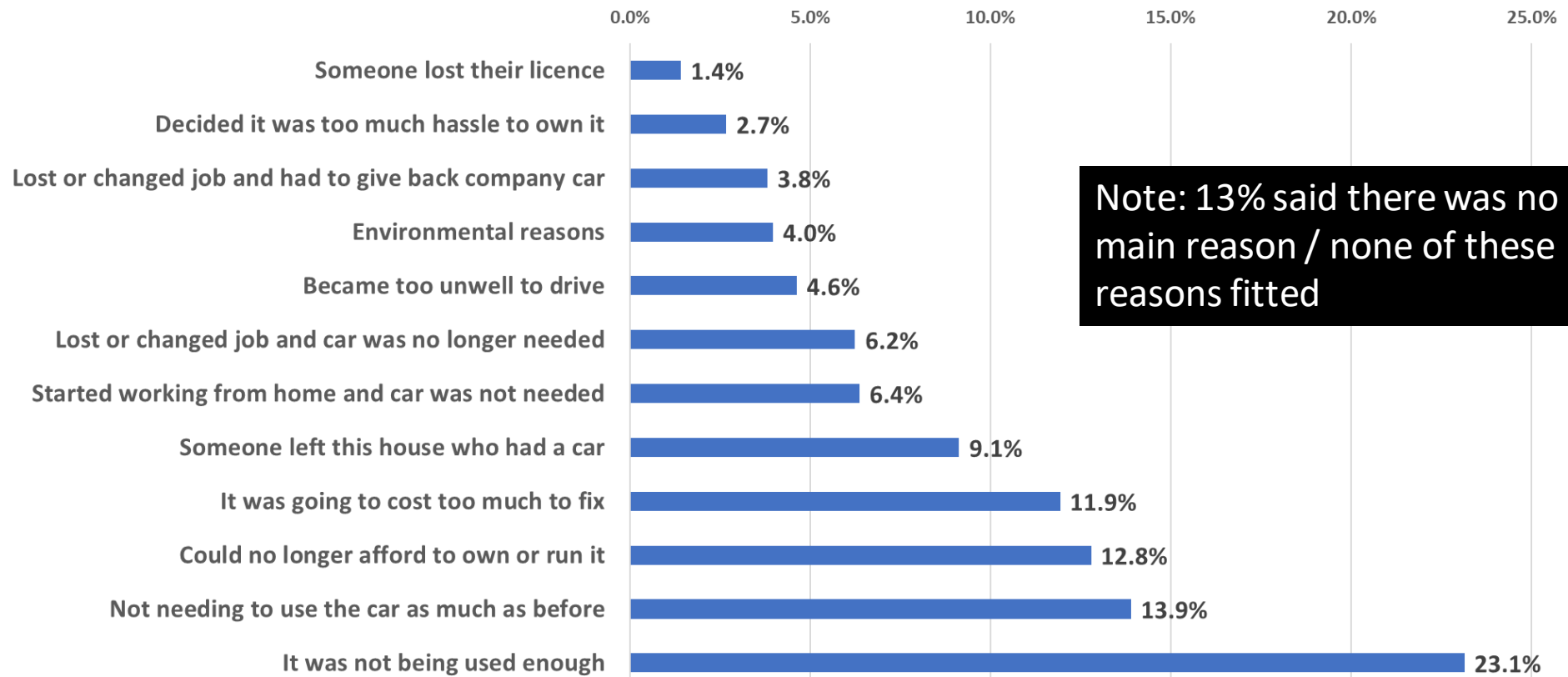


Note: >50% said there was no main reason / none of these reasons fitted/ other. This demonstrates complexity (and our lack of understanding) of car acquisition decisions.

Reasons for shedding a car (W5 (Oct 22))

Which ONE, if any, of the following best describes the reason getting rid of your car/van over the past six months?

(N=1,003 W1-W5 combined)



Note: 13% said there was no main reason / none of these reasons fitted

4.

Working from home: help or
hindrance?

Has working from home led to a reduction in overall car use?

Spoiler alert!

Our data suggests that working from home leads to lower levels of overall car use (i.e. not just for the commute) and car ownership. However, this depends on the proportion of working days at home versus in 'the office'.

So far, we have not found a strong tendency for home workers to move further away from the workplace over time

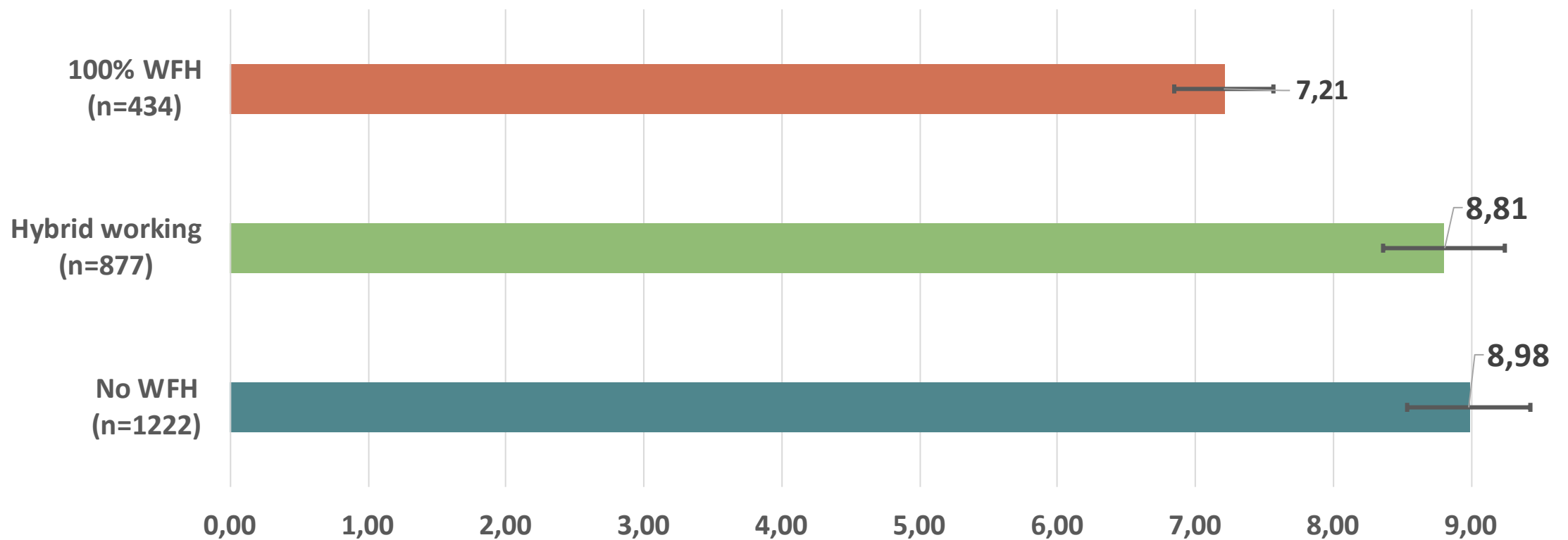


Those who 100% WFH travel less across all journey purposes than hybrid workers or no WFH

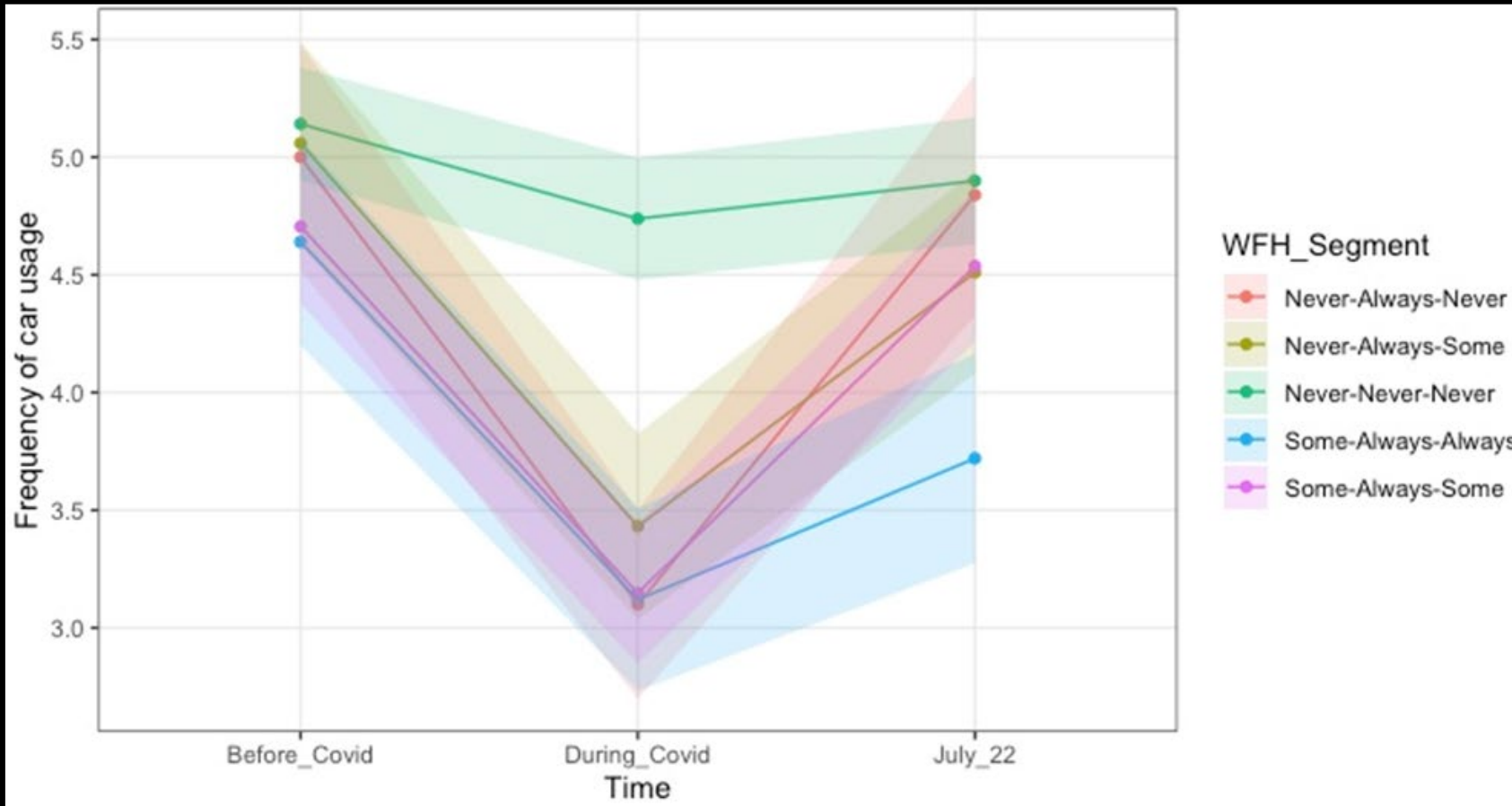
Average total travel days per week per WFH segment (W4 (Jun-22))

(Based on creating a 'sum' of all travel interactions from the frequency of each mode use.)

N=2533 - those who answered both W1 & W4 and were working at least 1 day per week in W4)



Those who never work from home have the smallest reductions in car use (W1-W5)



Before Covid

- average frequency of car usage for all purposes was no different between WFH segments

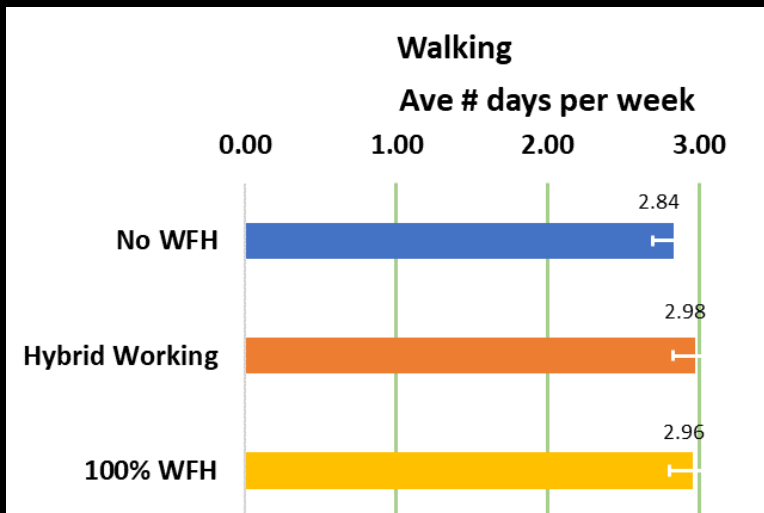
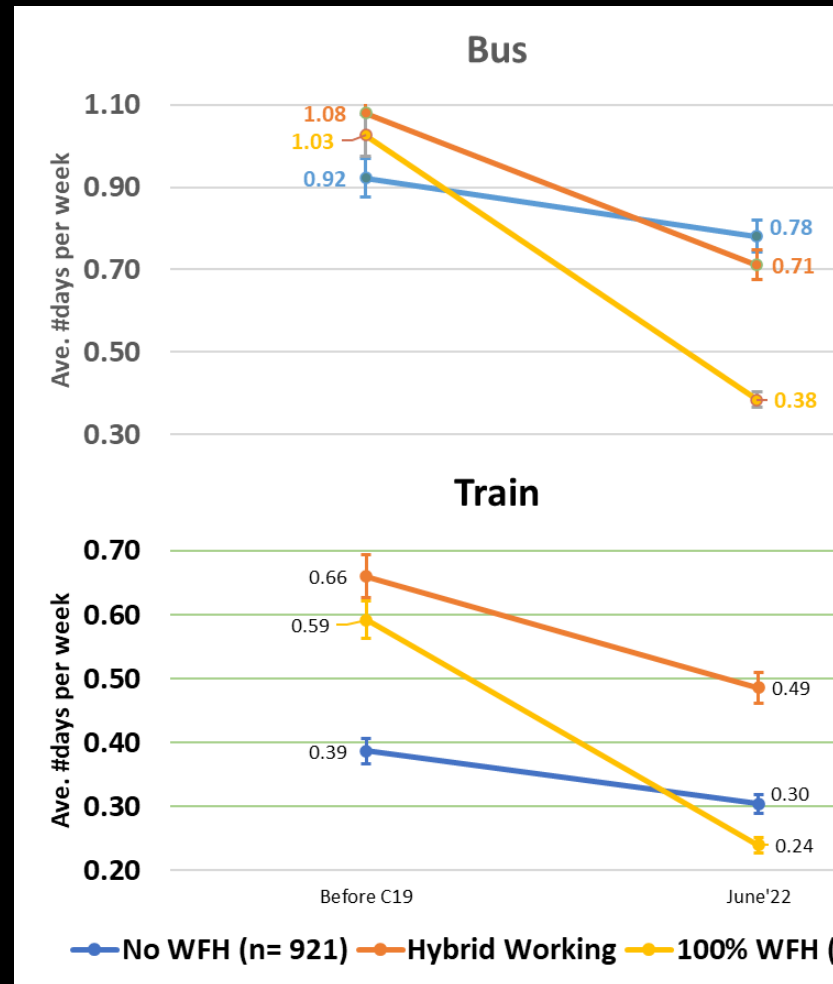
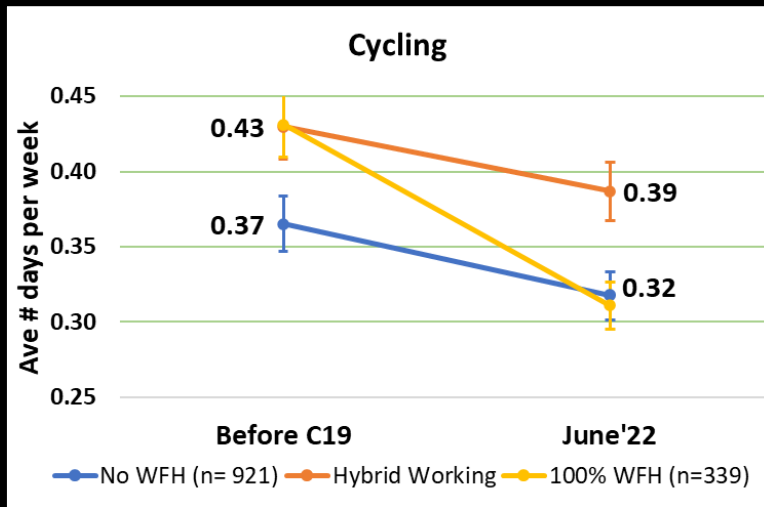
After Covid

- significant differences have opened up
- those who never WFH use car much more frequently than those who WFH as they reduced their car use the least
- '100% WFH' greatest reduction in car use

Double disadvantage

- Those who don't WFH live in areas with poor alternatives = more car dependent

Those who always WFH reduced their overall amount of cycling the most (to W4)



Public Transport

- Hybrid workers used train more pre-pandemic
- Greatest reduction in PT use seen in 100% WFHers

Cycling and Walking

- Similar reductions in cycling across 'No WFH' and 'Hybrid' workers
- Walking: least amount of change in frequency amongst the segments

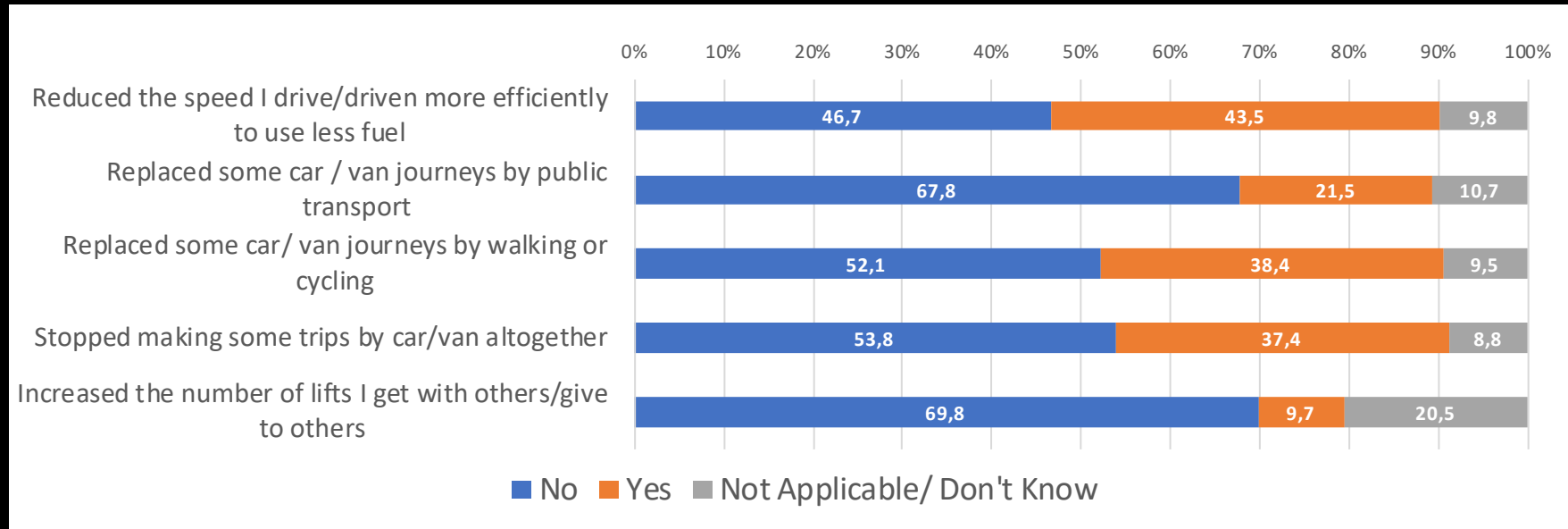
Findings echo our broader findings that those who don't WFH are more car dependent for their commute

Please note: change in scales of axis on graphs

N= those who answered both W1 and W4 and were working at least 1 day per week in W4

The Cost of living crisis has impacted travel (W5)

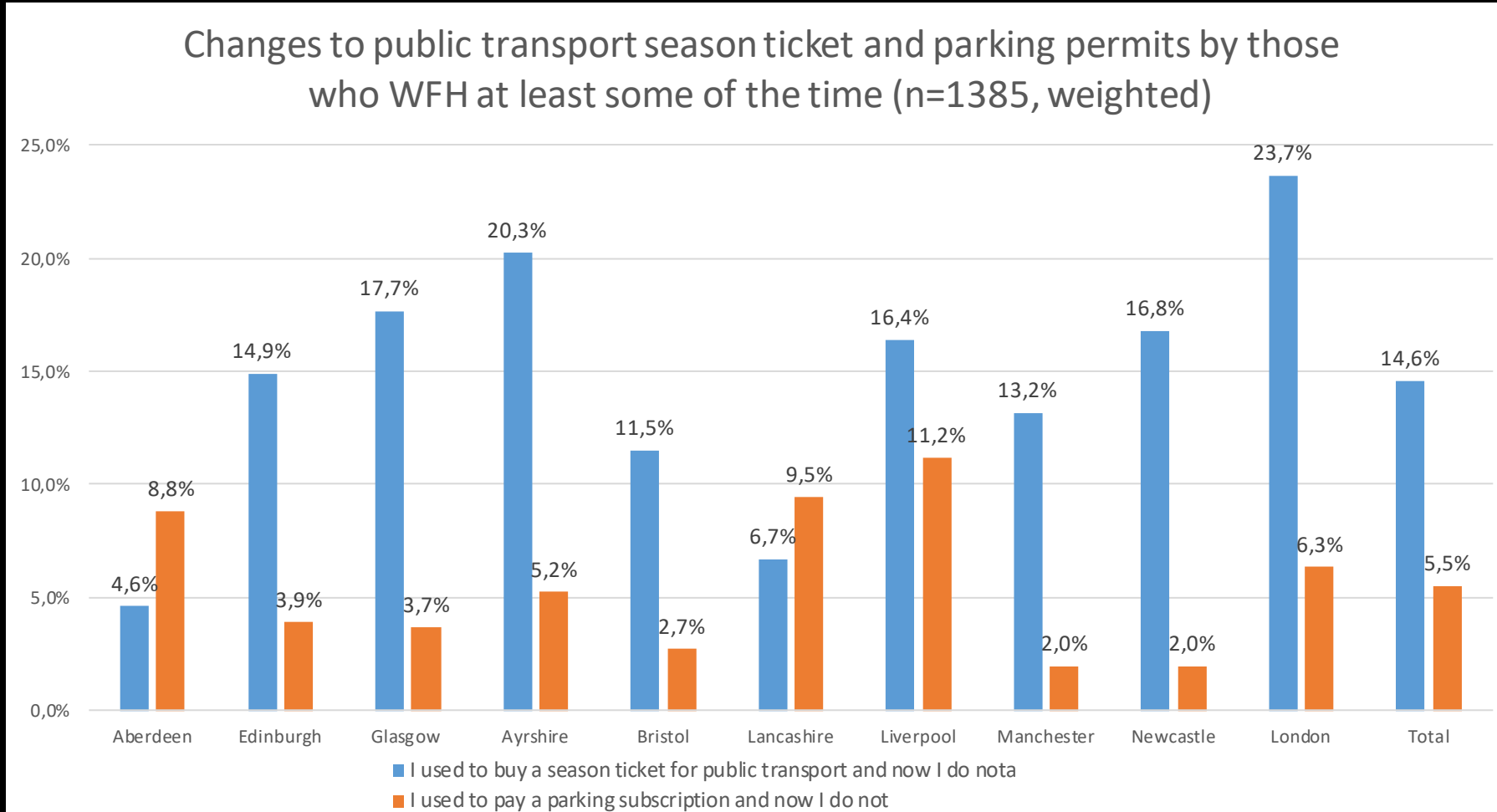
Which of these have you done to reduce the amount you spend on fuel or motoring?



Cost of living crisis has impacted the way a car was used (W5):

- 44% reported **driving slower or more efficiently**
- 22% **replaced some journeys** with public transport
- 38% **replaced some journeys** by walking or cycling
- 38% **didn't undertake some journeys.**

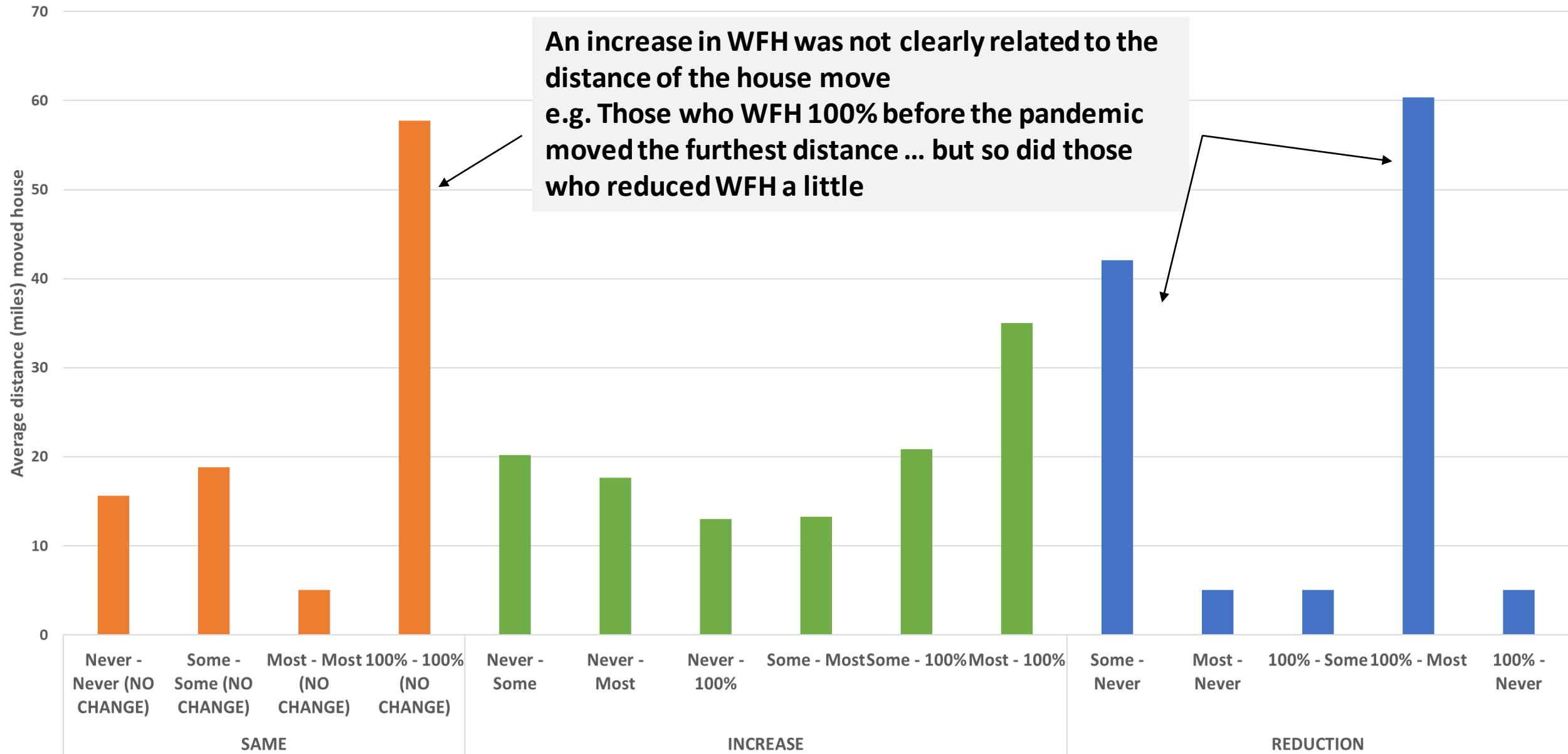
... but some people have also saved money



Those who WFH some or all of the time, 15% have given up buying a season ticket and 6% a parking permit (W5)

Average distance (miles) between old and new home location according to WFH segment

(N=484 in W5 who said they had moved home since before the pandemic and had the same job throughout)



Summary impact of WFH on travel

- Total travel reduction (not just commute) greatest for those who work from home, particularly 100% WFH
- Data doesn't show a greater increase in distance people are moving from home if WFH
- Needing more space is an important criteria in the decision to move, BUT this doesn't appear to be due to the need for space to WFH
- Home movers are less likely to WFH 100% of the time but these workers already live furthest from work
- However, there are many more travel and energy implications that we need to know in order to evaluate the net effects of WFH ----->

New work practices – energy demand implications

House extensions to make space for home office

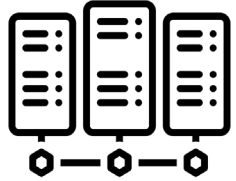
Retiming home energy demand

More heating, lighting, cooking, appliance use
Fewer showers?!

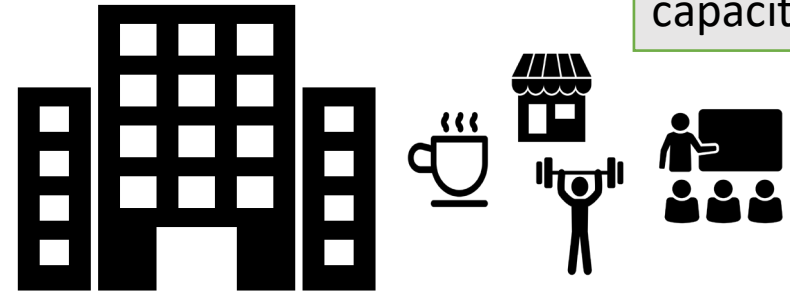
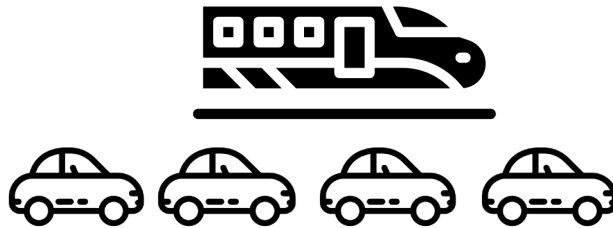
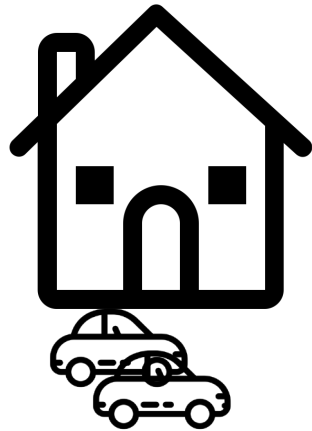
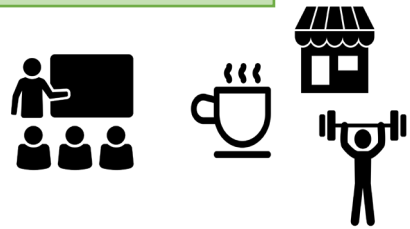
Move home to less accessible locations

Retiming of travel demand

Will office space shrink? Will related services shut down?
What will the vacated premises be used for?



More server capacity



More use of local gyms, cafes & shops

Two cars reduce to one? OR, newly 'idle' car gets used by other household members instead?

Less travel for commuting. But, will 5 days per week by train be swapped for 2 days by car?

Less use of local gyms, cafes, shops and other suppliers

Employee ties to childcare, clubs etc near office?

Children walked to school instead of taken in the car on the way to the office?

More online shopping deliveries

More business travel online?



- Assessment of travel demand impacts only
- Assessment of travel demand + indicative impact on buildings energy demand
- Indicative assessment of energy demand
- Out of scope

Gaps and policy implications

- Locking in the benefits (traffic reduction, increased cycling, more use of local amenities) – too late?
- Using insights about unequal access and car dependency – too late? Discussion of ‘key workers’ and services has subsided
- Big winner – reduction of cars from 2 to 1 car – still a big opportunity?
- Implications of WFH need much more work – what is the data needed to examine this?
- Public transport services are suffering as are town-centres. Longer term structural shifts will be the most important.

<https://covid19transas.org/>

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- Transport for the North



Scotland's centre of expertise connecting climate change research and policy

