Increasing walking rates during the Covid-19 pandemic in the UK and the window of opportunity for modal shift

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Abstract

The COVID-19 pandemic, and the associated lockdowns and travel restrictions significantly impacted transport systems worldwide. Cities saw reductions in car use, reductions in public transport patronage and increases in active travel (walking and cycling). This prompted many to speculate about what travel might look like after the pandemic, and whether increases in active travel would lead to more permanent modal shifts away from car use, and towards a more sustainable transport system. However, as restrictions have been lifted, many countries have reported car use rates returning to, or close to, pre-pandemic levels, with public transport patronage being lower than pre-pandemic levels, and active travel rates reducing since initial lockdowns. This poses the question, has the window of opportunity for sustainable travel post-pandemic gone? This paper examines this question further by focusing on walking rates during the pandemic. Using data from a longitudinal panel survey this paper addresses the following questions: how have walking levels changed during the pandemic in the UK? What are people walking for? and what impact could these changes have on greenhouse gas (GHG) emissions? Findings show walking is the only transport mode to increase during the pandemic and have more people walking regularly than pre-pandemic. This increase has been for mixed purposes, not solely for leisure purposes, and in June-21 17.4 % of the sample who eligible to drive, increased the frequency they walked and also decreased their car use. This paper argues there is still opportunity for policy makers to encourage a continuation of walking, and for some modal shifts from car use to continue post-pandemic.

Introduction

It is widely accepted that transport systems need to rapidly decarbonize over the next decade to reduce GHG emissions and limit global temperature rise. Alongside a shift from petrol and diesel to zero emissions vehicles there needs to be infrastructure and behavioural adaptions, with major modal shifts to lower carbon alternatives such as encouraging and increasing levels of active travel (CCC 2016, IPCC 2018, UK Government 2021). A modal shift from the car to active travel (walking and cycling) not only directly reduces energy use and GHG emissions (Cuenot, Fulton et al. 2012) but it also has wider health and economic benefits (Mindell 2015, Brown, Diomedi et al. 2016) and can significant reduce lifecycle carbon emission (Brand, Götschi et al. 2021).

The COVID-19 pandemic significantly disrupted transport and travel across the globe. At the start of the pandemic, many countries introduced '*stay at home*' guidance with limits on the number of times people were able to leave their home, with travel being permitting for essential purposes only. These measures significantly decreased urban transport, and many areas saw a reduction in congestion and improvements in air quality (Rojas-Rueda and Morales-Zamora 2021). Concerns about virus transmission, coupled with exemptions to the '*stay at home*' guidance for daily exercise, low public confidence and disruption to public transport services, saw active travel (walking and cycling) rates increase across the world.

Table 1. Longitudinal panel survey dates, time periods and sample size. *note sample size increase as Wave 3 includes a 'top-up' sample of n=2070 who had not conducted previous waves of the survey.

Survey Wave	Survey fieldwork dates	Sample size	Timepoint examined in survey	Average time taken to complete survey
Wave 1	3rd – 22nd June 2020	9362	February/March 2020 (Before COVID-19 outbreak)	28 minutes
			June 2020 (during first lockdown)	
Wave 2	1st – 11th December 2020	6209	October 2020	32 minutes
Wave 3	26th July – 11th August 2021	6878*	June 2021	25 minutes

This prompted many governments to (temporarily) re-allocate road space for active travel purposes, a global phenomenon in transport planning (Combs and Pardo 2021). The disruption from the pandemic and the increase in walking rates prompted many to identify how the pandemic could be an opportunity to significantly increase walking and cycling rates after the pandemic (Nurse and Dunning 2020, Zhang, Hayashi et al. 2021). However, nearly two years since the first lockdown in the UK, and with numerous lockdowns and revisions of restrictions, there remains uncertainty as to whether the pandemic has led to any sustained modal shifts, and whether the window of opportunity (Schmidt, Sieverding et al. 2021) to encourage a more permanent modal shift to active travel has past.

This paper aims to examine how walking rates have changed in the UK during the pandemic and explores whether the initial surge in walking seen during the initial lockdown has been sustained. Whilst there have been various assessments of changes to active travel during COVID-19 in the UK (for example DfT 2021), the data has been limited by being compared with a pre-pandemic benchmark (which can be difficult to justify), limited by the location of count data (for example location of walking counters) or the data has been in-depth but cross-sectional in its behavioural understanding (for example surveys from different subjects at various timepoints). This paper uses a valuable three wave longitudinal panel survey to track how the behaviour of a large sample of individuals has changed over time. To address the aim of this paper the following questions will be answered: how have walking levels changed during the pandemic in the UK? What are people walking for? and what impact could these changes have on GHG emissions? It is structured as follows: Section 2 details the methods used to address these research questions; Section 3 presents the results and Section 4 presents a discussion and conclusion of this work, along with limitation and areas for future research.

Methods

The data presented in this paper is part of a wider longitudinal transport, travel and social adaption study (TRANSAS[1]). A longitudinal panel survey was designed to examine changes to transport and travel during the COVID-19 pandemic, and explore the social adaptions being made. A panel surveys consist of a sample of people who are contacted and surveyed at multiple occasions (Gayle and Lambert 2018) and allows the investigation of changes in individual behaviour over time. The TRANSAS panel survey included questions which examined participants interaction with different transport modes, how activities such as shopping, working from home and childcare were adapted and various attitudinal questions.

YouGov, a large market research company, administered the survey on behalf of the TRANSAS team, with analysis being conducted by the TRANSAS team. The first survey (Wave 1) was conducted in June 2020 and asked about behaviours conducted in February and early March 2020 (before the pandemic), and behaviours in June 2020 (during the first national lockdown). The second survey (Wave 2) was conducted in December 2020 and asked about behaviours in October 2020, and the third survey (Wave 3) was conducted in July and August 2021 and asked about behaviours in June 2021. Table 1 presents further details on the survey, and the following section provides details on associated COVID-19 restrictions during these time periods.

The survey focuses on 10 city-regions of the UK: Aberdeen, Ayrshire, Bristol, Edinburgh, Glasgow, Lancashire, Liverpool, Manchester and Newcastle. A sampling approach of quotas by region, age, gender and social grade was used, along with ethnicity quotas for London. Respondents were randomly selected based on their YouGov registered profile. To reduce sampling bias respondents were invited to participate by a general email invitation which did not provide participants with details of the survey themes.

This paper reports on findings from the longitudinal panel survey related to walking. The survey questions which have been used in the analysis are presented in Figure 1. As the research questions in this paper examine change over time, analysis has been limited to participants who answered all three survey waves (n=4623), with the exception of research question 3 which specifically looks at changes from pre-pandemic to June 2021 and only includes people who answered survey waves 1 and 3 who and also had a driving licence at both timepoints (n=3678). Further details on the analytical approach taken to address each research question is presented in the results section.

1. Covid-19 Transport, Travel and Social Adaption Study (TRANAS) https://covid19transas.org/

Variable Name 'Mode Use' [included in Wave 1, 2 and 3]
On average, during the month of [*insert timepoint*] this year, how often did you personally travel by the following methods of transport? It does not matter how long the journeys were, or why you made them.
[Scale: 5 days a week, 3-4 days a week, 1-2 days a week, at least once a month, less often than once a month, Never]

[1] Car as a driver **
[2] Car as a passenger
[3] Van/Lorry
[4] Motorbike/moped
[5] Bus
[6] Train
[7] Tram/Underground rail/ Metro
[8] Cycling (including e-bike)
[9] Walking
[10] Wheeling by a wheelchair or motorized scooter *
[11] Taxi (black cab/minicab/Uber/Get)
[12] Ferry/other water-based transport

***This option was only asked to people who has a valid driving license at each survey timepoint. To facilitate analysis which looks at changes over time non drivers have been coded as 'Never'. This enables the analysis to include people who may have stopped driving during the pandemic, or started driving.*

Variable Name 'Walk Purpose' [included in Wave 2 and 3]
During the month of [*insert timepoint*] this year, how often did you walk for the following journeys?
[Scale: 5 days a week, 3-4 days a week, 1-2 days a week, at least once a month, less often than once a month, Never]

[1] Travel to/From Work
[2] Going on a business trip
[3] Going to someone else's house as a carer
[4] To run an errand for someone outside your
[5] Grocery Shopping
[6] Shopping for non-food items
[7] Visiting or meeting up with friends and family
[8] Going specifically for a walk

Variable Name 'Miles' [included in wave 1]
Roughly how many miles did you drive last year (i.e. before lockdown)? *

None	10,000 – 14,999	25,000 – 29,999
Less than 5,000	15,000 – 19,999	30,000 or more
5,000 - 9,999	20,000 – 24,999	Don't know

**Question only answered by people who had access to a car or van they could use whenever they wanted to*

Variable Name 'Supermarket Mode' [included in Wave 1, 2 and 3]
During the month of [*insert timepoint*] this year, when you visited each of the following (Large supermarket, smaller food shop, food bank', what was your MAIN method of travel?

Car/Van as driver	Train	Walking
Car/Van as passenger	Tram/underground	Taxi
Bus	Cycling	Other

Figure 1. Grid questions in the survey.

COVID-19 Timeline in UK and key messages

The UK entered the first national lockdown on 23rd March 2020, all leisure facilities, school, bars, restaurants and non-essential shops closed, people were ordered to '*stay at home*' and permitted to leave for essential purposes or exercise (once a day). Employees were asked to work from home. By survey Wave 1 (June-20) there were some easing of restrictions, with non-essential shops in England reopening and a phased re-opening of schools. A review of social distancing guidelines changed from '2 meters' to at 'at least 1 meter' in England, Scotland remained 2 meters. Working from home was still advised, but UK Government advised people in England who could not work from home to return to work but avoid using public transport wherever possible (UK Government 2020).

In October 2020, which corresponds with survey Wave 2, UK Government introduced a three-tier system of restrictions in England, with different regions having different restrictions (local lockdowns) based on infection rates. Most places saw an easing of restrictions since survey Wave 1 (June 2020), with indoor entertainment venues (e.g. cinema and theatres) reopening in August. However, throughout October, COVID-19 cases were rising, and more regions of England had further restrictions imposed on them. A second national lockdown came into force in England on 5th November 2020 with people being ordered to '*stay at home*', these restrictions were relaxed on 2nd December 2020.

With the rise of the Delta variant, a further third national lockdown came into force on 6th January 2021 with Governments reinstating '*stay at home*' guidance. A four-step roadmap for lifting COVID restrictions was introduced in England on 8th March 2021. By survey Wave 3 (June 2021) England was in stage three of the roadmap, with limits on social contact and indoor gatherings and guidance to work from home. However, with the easing of restrictions and messaging from UK Government that all restrictions in England would be removed by 19th July 2021, some people had opted to return to work by Wave 3 (June 2021).

Scotland has taken a more cautious approach with easing of restrictions, with 2-meter social distancing continuing

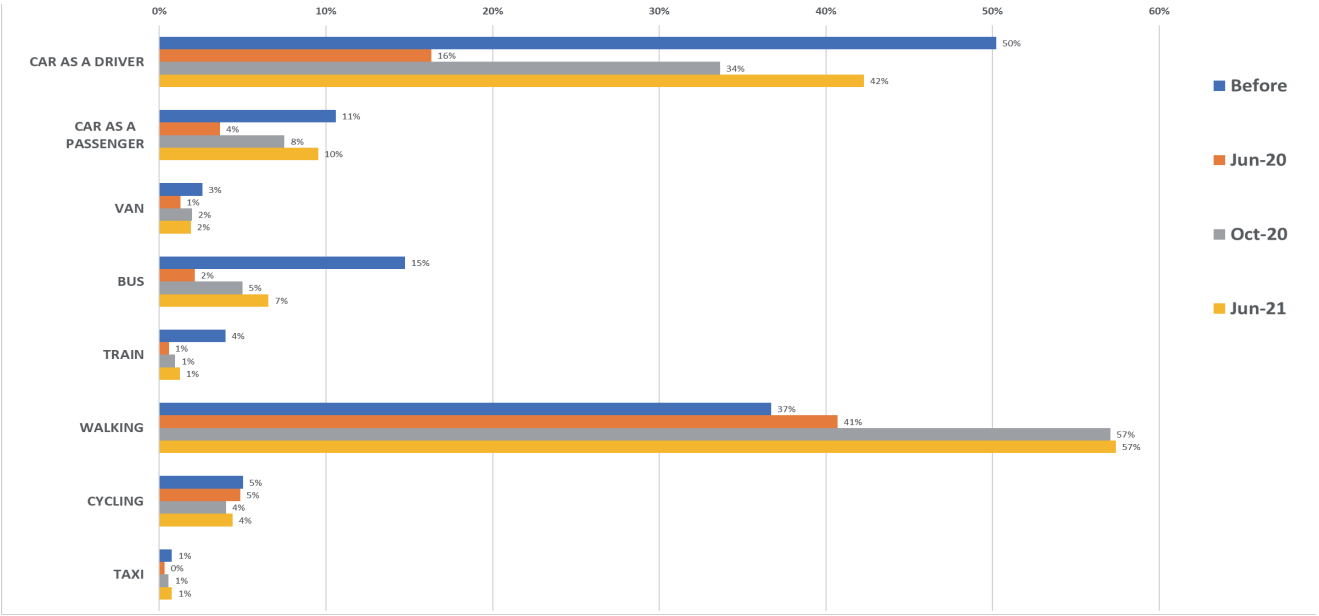

Figure 2. Proportion of the sample reporting using each transport mode at least 3 days a week. (n=4623).

throughout all three survey waves, and guidance encouraging a continuation of working from home where possible. Lifting of covid restrictions in Scotland did not occur until 8th August 2020. For more details on COVID restrictions in the UK, and the differences between Scotland and England please refer to Marsden and Docherty (2021).

Results

RESEARCH QUESTION 1: HOW HAVE WALKING LEVELS CHANGED DURING THE PANDEMIC?

Figure 2 shows the proportion of people walking regularly has increased during the pandemic. Before the pandemic 37 % of the sample reported walking at least three days a week, this rose to 57 % of the sample in June-21. Despite some transport modes in June-21 returning to close to pre-pandemic levels, walking is the only transport mode where we see an increase in the number of people using it at least 3 days a week. As seen in Figure 2 it is a mixed picture as to the rate at which different transport modes are returning to pre-pandemic levels. In June-21 the number of people cycling, being a passenger in a car and using a van or taxi are similar to pre-pandemic levels. Using the bus and car as a driver are rebounding and increasing over time, but at very different rates. Bus patronage is returning at a much slower rate than car as a driver. 1 % of the sample travelled by train at least 3 days a week in Jun-20 with little change over the pandemic. These findings are similar to those from the Department for Transport (Figure 3) which show a dramatic decline in all transport modes just after the first lockdown (23rd March 2020) with car traffic returning to approximately 85 % of pre-pandemic levels in Oct-21. Figure 3 also shows public transport patronage (rail, tube, bus) being approximately 60 % less of pre-pandemic levels in Oct-21. Walking rates are not shown as this data is not available from the Department for Transport to the same granularity.

Walking rates being higher than pre-pandemic levels is further supported in Figure 4 which shows the average walking rate of the sample as a proportion of the total interactions with any mode of transport. This graph accounts for fluctuations in the total number of journeys and interactions with different transport modes at the various time points. Before the pandemic 20.2 % of all interactions with any mode of transport involved walking, this has risen and fluctuated around the 40–45 % mark during the pandemic.

With walking levels increasing, questions remain as to what this means for the transport mix, sustainable travel and GHG emissions. What are people walking for? And what impact could this increase in walking rates have on GHG emissions?

RESEARCH QUESTION 2: WHAT ARE PEOPLE WALKING FOR?

This section examines answers to the variable 'Walk Purpose' (further details in Figure 1) to examine what people have been walking for and whether increases have due to increases in leisure purposes associated with permitted exercise during 'stay at home' guidance. Figure 5 shows the proportion of people walking for pleasure and/or exercise at least three days a week. During the pandemic this proportion has fluctuated, peaking at 45.3 % at the height of the first lockdown (June-20) when the UK experienced strict travel restrictions, and dropping to 37.9 % in Oct-20 with easing of restrictions. This fluctuation does not follow the continued increase in walking rates reported in Figure 2, which suggests the increase in walking has not solely been for leisure purposes. If an increase in walking rates was due to increases in walking for leisure, we would expect to see a similar rate of increase, as seen in Figure 2, in Figure 5.

To further examine research question 2, Figure 6 provides additional findings from the walk purpose variable. The proportion of each walking purpose as a rate of the total number of walking purposes has been calculated for the W3 survey (June-21). For ease of interpretation these figures have been segmented into four categories; All (100 %), Most (51–99 %),

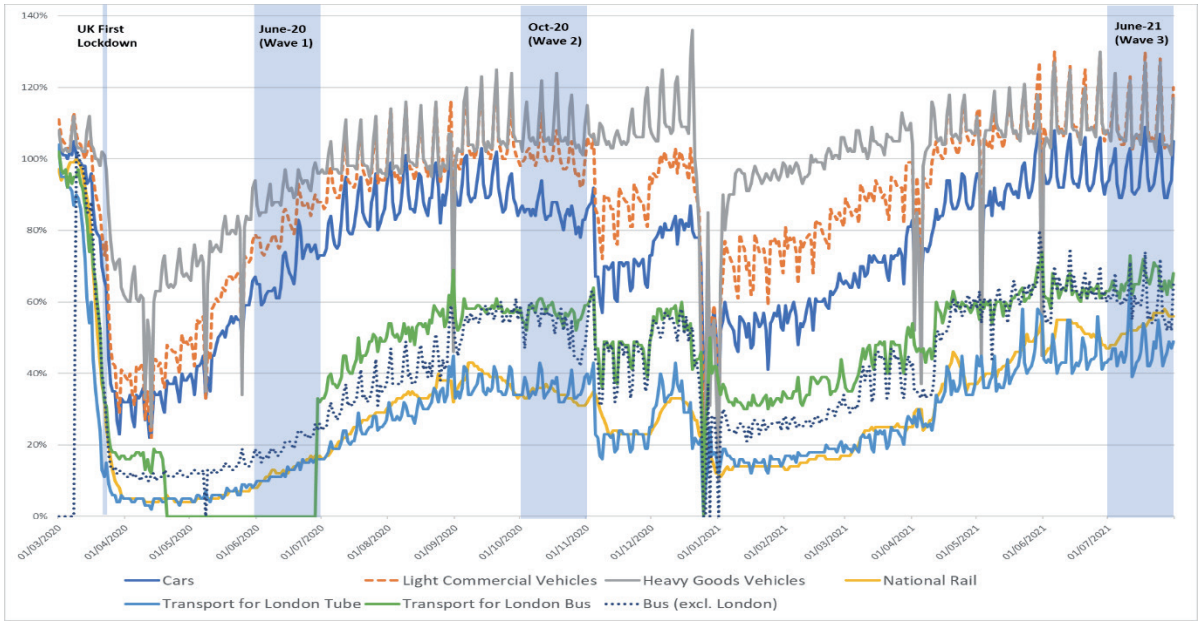

Figure 3. Percentage change in transport use by mode relative to equivalent day in 2019 (DfT, 2021). Highlighted bands correspond to the fieldwork timepoints of the TRANSAS survey.

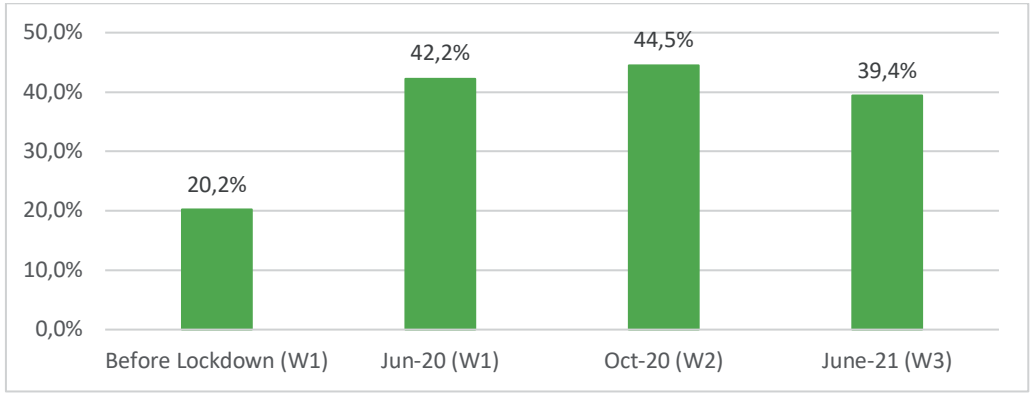

Figure 4. Mean proportion of walking as part of the total interactions with different transport modes reported at each time point. Total journey interactions is defined as the total number of days per week using the modes listed in the 'mode use' variable. Sample size before lockdown (n=4607) June-20 (n=4283) Oct-20 (n=4526) June-21 (n=4588).

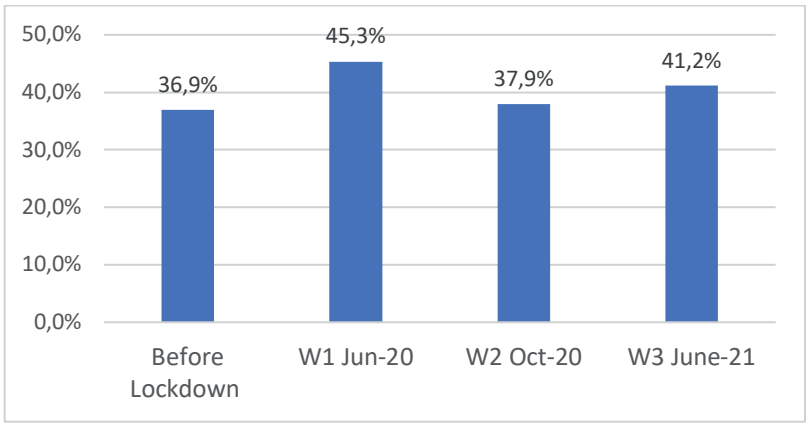

Figure 5. Proportion of the sample reporting walking for pleasure and/or exercise at least 3 days a week across the different survey time-points (n=4623).

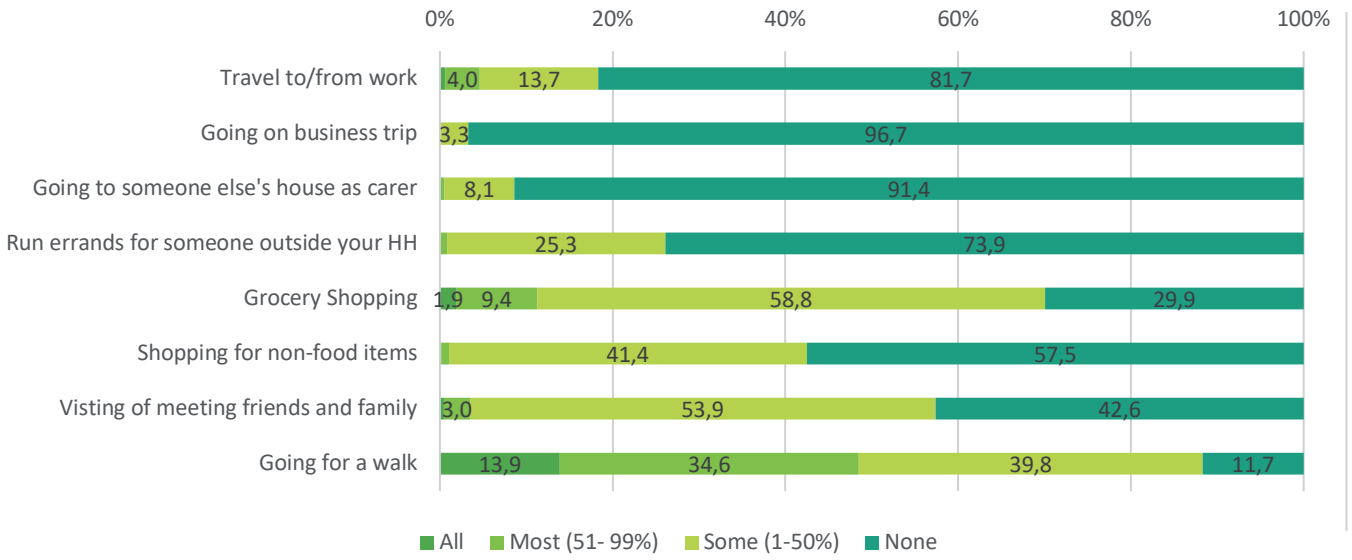

Figure 6. Graph showing the proportion of each walk purpose in Wave 3, as a percentage category of total number of walking interactions. Total number of walking interactions is defined as total number of days per week walking for each purpose listed in the Walk Purpose variable. Values of less than 1 % have not been labelled (n=4115).

Some (1–50 %), None (0 %), which describe how much a given walking purpose accounts for in the total amount walked. As an example, 13.9 % of the sample reported 'going for a walk' as the only reason for walking (All), 34.6 % reported 'going for a walk' as accounting for 51–99 % (Most) of total times they walk, 39.8 % state 'going for a walk' is 50 % or less (Some) of the total times they walk, and 11.7 % stated 'going for a walk' (None) as not being a reason for why they walk.

Figure 6 shows over 70 % of the sample report grocery shopping as a reason for walking at least some of the time, 43 % report non-grocery shopping as a reason for walking at least some of the time, 30 % report running errands for someone outside of the household as a reason for walking some of the time, and 18 % report travel to/from work as a reason for walking at least some of the time. Approximately 52 % of the sample reported 'going for a walk' as being the reason for walking most or all of the time.

Figure 5 and Figure 6 suggest that the increase in walking rates reported in research question 1 has not solely been for leisure purposes and reasons for walking vary, and include walking for leisure/pleasure, to grocery shop, to visit friends and family and shopping for or non-food items.

Looking further into the way people travel to undertake grocery shopping, Figure 7 and Figure 8 report on findings of the 'Supermarket mode' variable (further details in Figure 1) and change from pre-pandemic to June-21. They show the churn in the main transport mode used to access large supermarket and small shops. Figure 7 shows the dominant mode of travel to visit large supermarket is the car accounting for 77 % of the sample pre-pandemic, and in Wave 3. The number of people walking to a large supermarket has increased from 12.6 % of the sample, to 15 %, but within this increase there is a churn of transport modes. 70 % of people who walked to a large supermarket before the pandemic continued to do so in June-21 however, nearly 20 % shifted to using the car, 2 % cycling and 4 % moved to other, which mostly consists of the use of taxis. Figure 8 presents a different picture, with walking being the dominant mode of travel to access small shops, accounting for 61 % of all visits in June-21, an increase from 55 % of the sample pre-pandemic. Most of the sample lived within one mile of the small shop they used, which reflects the generally good access to smaller shops within urban city-regions of the UK. As seen in Figure 7, beneath the figures of an increasing in walking to access small shops there is a modal shift churn. With some people shifting to walking as their main mode of travel to access a small shop, and some shifting to other transport modes. The increase in walking has predominantly been from a shift of 26 % of pre-pandemic car user and 55 % of pre-pandemic public transport users. An increase in levels of walking as the made mode of travel for visiting large supermarkets, along with the dominance of walking as the main method of travel to access small shops further highlights how the increase in walking during the pandemic (as reported in figures 2 and 3), has not solely been for leisure purposes.

RESEARCH QUESTION 3 – WHAT IMPACT COULD THESE CHANGES HAVE ON GHG EMISSIONS?[2]

Increasing the frequency of walking has several health benefits but to reduce GHG emissions in the transport sector, a modal shift from private car to public and shared transport, and active travel for some journeys is needed (Brand, Götschi et al. 2021). To explore what impact an increase in walking may have on assisting to achieve a reduction in GHG emissions this section examines changes in walking rates and car use over the pandemic. It compares answers to the variable 'Mode_Use' (further details in Figure 1) from two time points: Before Pandemic (W1) and

2. Please treat findings reported in this section as provisional and subject to change.

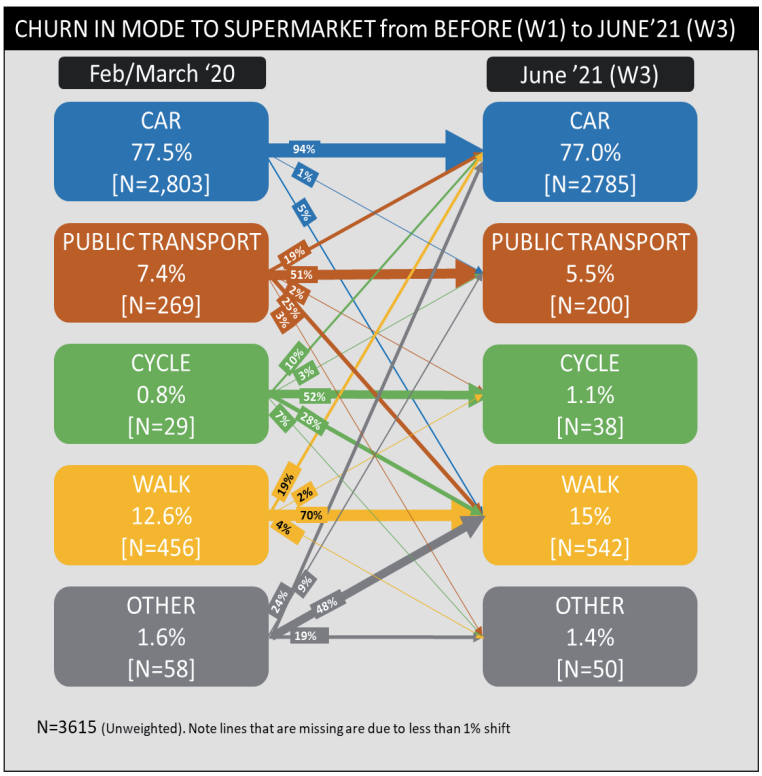

Figure 7. Churn in the main mode of travel to the supermarket from Pre-pandemic (Feb/March '20) to Wave 3 (June'21).

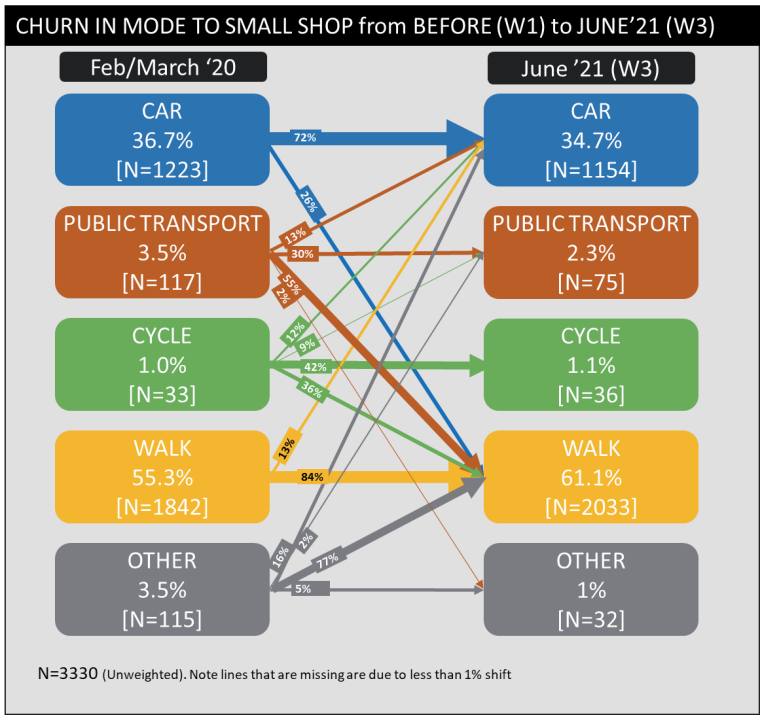

Figure 8. Churn in the main mode of travel to the small shop from Pre-pandemic (Feb/March '20) to Wave 3 (June'21).

June'21 (W3). To address this research question, the sample has been restricted to those who answered both survey waves 1 and 3, and had a driving licence in both waves (n=3678).

A new variable was created (Change_ModeFrequency[x]_W1_W3) which reports the difference in the frequency of using each transport mode from before the pandemic (W1) to June-21 (W3). Prior to its creation the 'Mode_Use' categorical variable was transformed to numerical data (Table 2). This enabled the creation of the new variable (Change_ModeFrequency[x]_W1_W3) by the following equation which subtracts the fre-

Table 2: Detailing numerical values assigned to categorical scales.

Categorical Scale	Numerical Value
5 days a week	5
3-4 days a week	3.5
1-2 days a week	1.5
At least once a month	0.5
Less often than once a month	0.2
Never	0

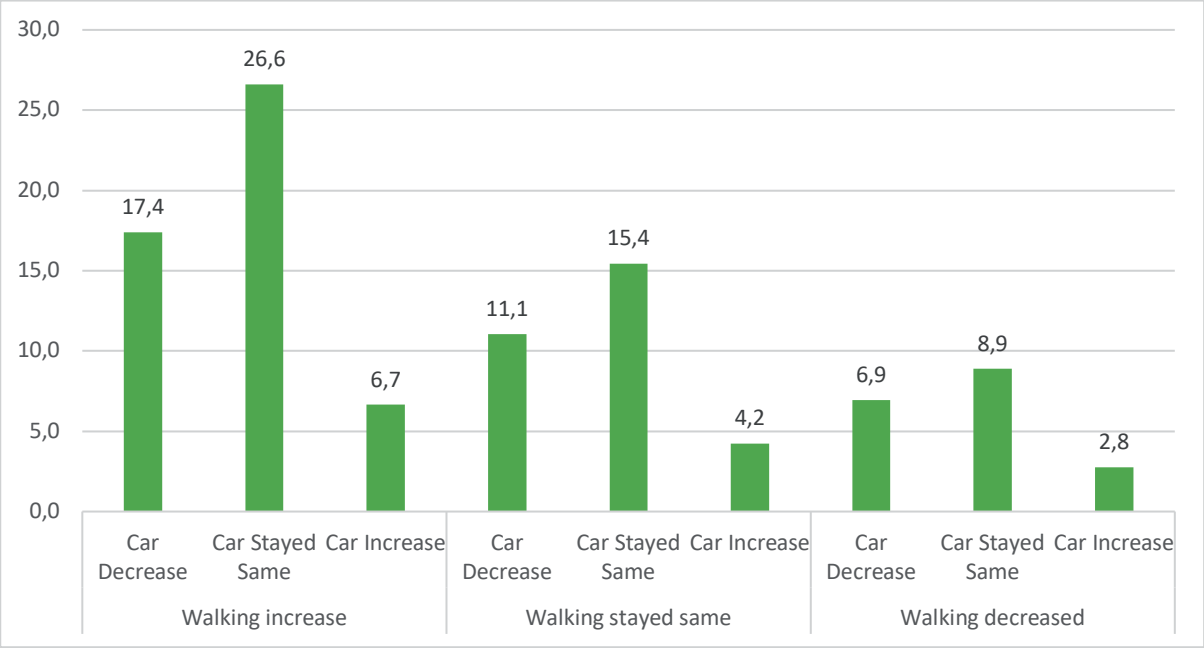

Figure 9. The proportion (%) of sample who's walking rates increased, decreased or stayed the same from before Covid-19 (W1) to June-21 (W3), along with associated increase, decrease or stayed same for car use (n=3678).

Table 3. Crosstab of nine segments of combinations of walking change and car change against the reported 2019 mileage asked in W1 (n=3421). Note: sample size only includes people who had access to a car or van that they could use whenever they wanted to, and had a driving licence in both Wave 1 and Wave 3.

Segment			Pre-Pandemic			
Walking change	Car use change	Sample Size	Low (< 5,000)	Medium (5,000 to 9,999)	High (> 10,000)	Don't know or none
Walking increased	Decrease	639	31.8%	38.8%	26.6%	2.7%
	Stayed the same	979	29.4%	37.6%	28.6%	4.3%
	Increase	245	39.8%	37.2%	16.5%	6.5%
Walking stayed the same	Decrease	407	36.8%	35.8%	23.4%	3.9%
	Stayed the same	568	27.8%	42.3%	23.7%	6.3%
	Increase	156	44.8%	34.5%	15.9%	4.8%
Walking decreased	Decrease	255	38.4%	37.2%	20.0%	4.4%
	Stayed the same	327	28.3%	36.7%	29.0%	6.1%
	Increase	102	44.8%	35.4%	11.5%	8.3%

quency of each mode of transport in Jun-21 (W3) by reported frequency before covid (W1Before):

Change_ModeFrequency[x]_W1_W3 = Mode_Use[x]_W3 - Mode_Use[x]_W1Before

[x] = Figure associated with transport mode being examined

The range of answers to Change_ModeFrequency[x]_W1_W3 range from -5 to 5. With negative values reporting a decrease in frequency of Mode_Use[x], positive values reporting an increase, and a value of 0 reporting no change (*stayed the same*). This categorical 3-point scale of increase, decrease, or stayed the same, was assigned to each survey for walking and car use (as a driver) and public transport (train and bus) modes. To determine how changes in walking have impacted car use, each survey was assigned to one of nine possible segments, which correspond to the nine possible outcomes of increase, decrease and stayed the same of walking and car use.

Figure 9 shows the proportion of the sample in each of the nine segments. The largest segment, accounting for 26.6 % of the sample, consists of people who have increased their walking rates, but car use has stayed the same during the pandemic, which has no impact on the overall frequency of car use. However, the second largest segment, account for 17.4 % of the sample, saw an increase in walking rates and a decrease in their car use during the pandemic, which is promising for reducing GHG emissions from car use.

Figure 9 also provides some interesting insights beyond a modal shift. Firstly, the walking increase segments show car use does not always reduce when people walk more, as shown 26.6 % of the sample reporting car use staying the same, and 6.7 % reporting increasing their car use. Secondly, walking less does not necessarily lead to driving more, with only 2.8 % of the sample increasing their car use when their walking decreased. Thirdly, there are more people decreasing their car use (35.4 % of the sample) than increasing (13.7 % of the sample). Figure 9 presents a simplistic view of changes in walking and car use, and caution should be taken with drawing strong conclusions or estimates of change as it does not account for changes in other transport modes, or those who may have obtained a driving licence and started driving during the pandemic. It also reports on frequency change and does not quantify the change in frequency, for example examine the distance travelled. As seen in figures 2 and 3, even with more people decreasing car use than increasing (Figure 9), the proportion of the sample using a car at least 3 days a week is similar to pre-pandemic levels in June-21. However, the results in Figure 9 do suggest there is a proportion of the sample (17.4 %) who have decreased their car use and increased the amount they are walking which is promising for a potential shift from car use to active travel.

To further address research question 3, an examination of the relationship between each of the nine-walking change and car change segments and the reported annual mileage pre-pandemic was undertaken (Variable name 'Miles' further details in Figure 1). This explores whether people in each segment were high (over 10,000 miles), medium (5,000 to 9,999 miles) or low (less than 5,000 miles) car users before the pandemic. We were not able to report chi-square results as there were 4 cells in the crosstabulation, associated with the 'don't know' and 'none' categories with expected counts less than 5. However, from Table 3 we can see over a quarter of people in the walking increase and car decrease segment, which was the second largest segment, were high car user's pre-pandemic (Table 3). Which means a potential high impact on reducing GHG emissions. Additionally, in all segments which involve car use increasing most people were low car user's pre-pandemic (less than 5,000 miles). To put this in perspective, the average car mileage in the UK for 2019, was 7,400 miles (DfT, 2021).

Discussion and Conclusion

This paper has shown that walking is the only mode of travel to have increased during the COVID-19 pandemic, with more people walking at least 3 times a week than before the pandemic. This is a positive outcome from the pandemic for both environmental and health benefits, and a benefit that has been widely underreported in transport figures. Evidence from national transport statistics contradict this finding, suggesting walking levels have decreased during the pandemic. However, caution should be taken with the national transport figures as data is collected from walking counters, which pre-pandemic have typically been placed in city centres, along routes which experience high walking levels. During the pandemic, with businesses and workplaces closed, and '*stay at home*' guidance in place, people were not walking where they may have done pre-pandemic and were not travelling into city-centres.

There is a mixed picture on what the impact an increase in walking reported in this paper will have on GHG emissions. 13 % of the sample increased their walking rates and decreased their car use, and 26 % of these participants were high car users in 2019. This, if sustained could have a big impact on GHG emissions. However, as seen from national transport figures public transport (train and bus) usage has not returned to pre-pandemic levels and a modal shift from public transport to car use could offset reductions in GHG emissions from increases in walking and decrease in car use.

Even with this uncertainty, this paper has shown that there is a mix of walking purposes, including shopping for grocery and non-grocery items, visiting friends and family, and for exercise (going for a walk). It also shows walking is the dominant mode of transport for accessing small shops, which in urban areas are often within a mile of a home. These findings suggest walking increases are being seen in areas local to the home. This suggests opportunities for urban planning changes such as the 15–20 minute neighbourhoods originally created by Carlos Moreno which focus on minimal travel, with jobs, services, and leisure facilities being within 15–20 minute walk or cycle from given location (for more information please refer to Capasso Da Silva, King et al. (2020).

As we enter new phases of the pandemic with less travel restrictions, future research should continue to examine changes in walking rates, along with other active travel modes such as cycling. Caution should be taken when drawing conclusions from data on walking rates measured by static counters. This paper has begun to uncover why walking rates are increasing by looking at the purpose of walking and examining changes in transport mode for shopping over time. However, there are several research questions that need further examination such as what adaptations have been made to accommodate an increase in walking and decrease in car use? what are the characteristics

of those who have increased their walking? And what can be done to encourage a continuation of these increased in walking rates. These questions will be further explored in future TRANSAS research.

Limitations

This paper uses data from a longitudinal panel survey with a sampling technique based around 10 city-regions of the UK. The sample is not nationally representative and has an urban bias. Secondly, this paper reports on self-reported data, and relies on retrospective self-reported rates of travel for pre-pandemic. The TRANSAS data also reports on frequency of usage of different transport modes and does not report on mileage or provide indication of distance travel by each transport mode, thus it is beyond the scope of this paper to report on changes in distance of walking during the pandemic. Finally, as reported in research question 3, tests for statistical significance were not able to be conducted due to some crosstabulation cells experiencing low cell counts. This analysis will be re-visited in future TRANSAS survey waves.

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