

Life events relating to family and employment are major triggers for car ownership changes

This leaflet summarises **new analysis** (using the *Understanding Society* panel survey) that shows **households are more likely to change the number of cars at the time of life events**. Residential context, including the transport system, also plays an important role. The new analysis can be used to identify ‘*moments of change*’ for particular population groups when policy interventions may influence the car ownership decision itself or the travel behaviour associated with it.

Key findings:

The number of cars owned is strongly related to age of household members, household composition, economic status and residential context. But it also varies substantially among similar households, demonstrating lifestyles and attitudes also play a role. *Understanding Society* panel data enabled us to assess the extent to which events in people’s lives *drive* car ownership changes where we found (in approximately decreasing order of magnitude of effect):

- **Starting and ending cohabitation** makes it much likelier that the number of household cars will increase and decrease respectively. This implies that cars are brought and taken with people when these events occur and are not shared by partners.
- **Gaining a driving licence** by someone strongly increases likelihood of acquiring an additional car, *regardless of how many cars are already available*. This shows those getting a licence are committed to getting their *own* car.
- **Moving in and out of employment** of someone increases likelihood of acquiring and relinquishing a car respectively. This suggests employment is seen to necessitate a car and provides financial resources to afford one.
- **Birth of a child** increases likelihood of a non-car owning household acquiring a car and increases likelihood of a two-car owning household relinquishing a car. This suggests households seek a one car solution when having children.
- **Changes in income** influence likelihood of changing number of cars up and down but car ownership reductions are more sensitive to income change. This implies that in 2010/11 households were inclined to economise by relinquishing a car when experiencing income reductions.
- **Changing employer** moderately increases likelihood of increasing car ownership. This implies that employment location changes tend to introduce the need for more car mobility.
- **Residential relocation** moderately increases likelihood of decreasing car ownership with this effect more pronounced when the move was to an area with more amenities. This implies that residential moves generate deliberation over car ownership needs.
- **Retirement** notably does not impact upon likelihood of relinquishing a car, implying that cars are retained when this event occurs.

Household circumstances at wave one of the survey (2009/10) also exerted influence. For example, larger household sizes make it more likely to increase cars owned, while children being present makes it less likely. Once other influences are considered, younger households are more likely to decrease car ownership indicating they experience more volatility in their lives. Poor access to employment opportunities by public transport increases likelihood of non-car owning households acquiring a car and better access increases likelihood of one-car owning household relinquishing a car. This suggests good public transport provision to jobs can restrain demand for car ownership.

What is Understanding Society?

Understanding Society is an innovative world leading study about 21st century UK life. Members of 40,000 households are being surveyed every year to track how their lives are changing over time. The ESRC funded 'Life Transitions and Travel Behaviour' study used data from the first two waves of *Understanding Society* (2009/10 to 2010/11) to examine the extent to which people across England *change travel behaviour* (including car ownership) *at the same time as major life events* (e.g. moving home). Although it seems intuitive that people are more likely to change travel behaviour at the time of a life event, there has been very little evidence to date of the number of people across the population that experience different life events and change behaviour from year to year.

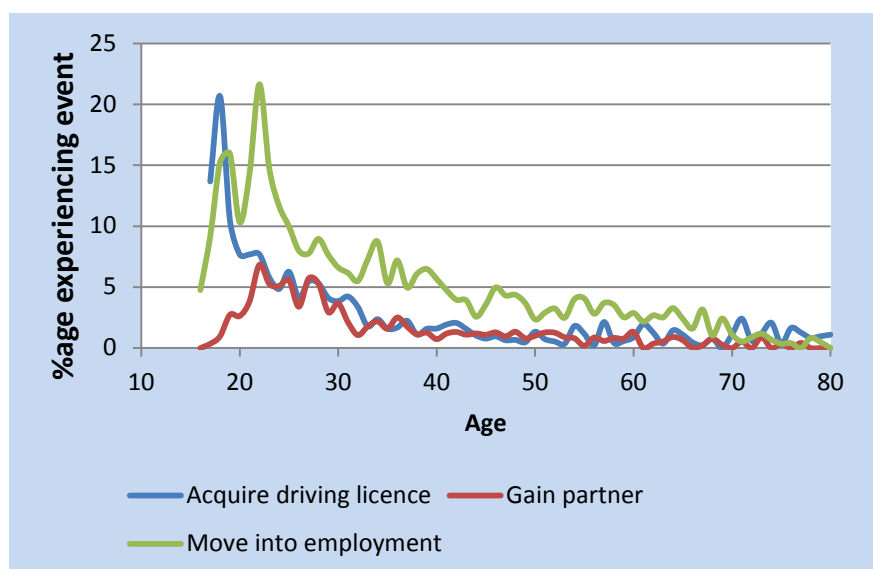
How many people experience different life events from year to year?

The survey confirmed that residential relocations were the most commonly experienced event in England in the period between 2009/10 and 2010/11, followed by changes in employer:

Life Event	Percentage of English adults (weighted)	Unweighted sample counts\percentage			
		Yes	No	Total	Percentage
Residential relocation	6.9%	2032	30097	32129	6.3%
Change of employer	6.2%	1770	28388	30158	5.9%
Entered employment from non-employment	5.1%	1621	30522	32143	5.0%
Lost employment (excluding retirement)	3.3%	1065	31078	32143	3.3%
Had child	3.1%	939	28655	29594	3.2%
Gained a driving licence	2.5%	836	31191	32027	2.6%
Gained a partner	1.6%	473	31678	32151	1.5%
Lost a partner	1.3%	395	31756	32151	1.2%
Retired	1.2%	380	31763	32143	1.2%

Source: Understanding Society, Waves 1 and 2 (2009/10 - 2010/11), English residents only, n=32,159

It also illustrated how the lives of younger people are much more changeable than those of older people. Younger people are more likely to move into and out of employment (excluding retirement), form relationships or move home. Some life events are also likely to coincide with each other - for instance, around 14 percent of new parents and 10 percent of those entering the labour market also moved home.



Life events and household car ownership

We know that acquiring a first or additional car is a potential marker of travel behaviour change - indicating a commitment to car use or even the beginning of a process through which habitual travel behaviours around car oriented mobility form. For instance, in 2012, people in households with a car travelled 6270 miles by car while those without a car travelled 888 miles by car. Whilst past research has sought to identify predictors of car ownership *states* (0, 1, or 2+ cars), this study concentrated on identifying predictors of *changes between different car ownership states* (e.g. from one car to two cars).

How many households change car ownership level year to year?

Overall, there was a 2% increase in the total number of cars owned across the sample of 19,545 households in England included in our analysis, but this small increase masks a much larger proportion of households that changed car ownership level up or down. In all, 18% of households changed car ownership level - 9% of households gained at least one car, while 9% lost at least one car. Changes between one and two cars in either direction were the most common.

		Wave 2 - no. of cars				Total
		0	1	2	3+	
Wave 1 - no. of cars	0	20.8%	2.2%	0.2%	0.0%	23.2%
	1	2.4%	37.5%	3.5%	0.3%	43.7%
	2	0.3%	3.7%	20.3%	2.0%	26.3%
	3+	0.1%	0.5%	1.6%	4.7%	6.9%
	Total	23.6%	43.8%	25.6%	7.0%	100.0%

Are households more likely to change car ownership if a household member has experienced a life event?

Yes, Understanding Society data demonstrates this. The table below compares the percentage of households changing car ownership level who experience the life event to the percentage changing car ownership level *in the absence* of the life event. Usually, the event makes a change more likely, except when this is counterintuitive (e.g. gaining a driving licence and decrease in cars owned).

Life event	n	% households increasing/decreasing cars with or without life event: n=19,344			
		Increase cars with life event	Increase cars without life event	Decrease cars with life event	Decrease cars without life event
Lost a partner	372	7.0	9.0	42.7	8.4
Gained a partner	447	38.7	8.2	14.8	8.9
Gained a driving licence	794	34.0	7.9	5.7	9.2
Residential relocation	1426	14.4	8.5	23.4	7.9
Entered employment from non-employment	1525	15.0	8.4	9.8	9.0
Lost employment (excluding retirement)	1023	9.4	8.9	14.8	8.7
Changed employer	1647	15.6	8.3	11.4	8.8
Had child	622	11.4	8.9	11.9	9.0
Retired	355	6.8	9.0	12.7	9.0

The strongest association is with partnership formation and dissolution. This usually increases or decreases the number of adults in the household. When a member of the household acquires a driving licence about a third of households gain a car.

Drivers for different car ownership level changes

Past research has revealed a household life-cycle effect. The number of cars owned tends to increase as the head of the household reaches the age of 50 and thereafter declines. Multiple regression analysis with the *Understanding Society* data has been used to investigate how life events and other factors influence different car ownership level changes i.e. 0 to 1 car, 1 to 2 cars, 2 to 1 car and finally 1 to 0 car. The diagram on the back page summarises the influences found on car ownership states and level changes.



What predicts households owning zero, one or two cars ?

Undergoing a particular car ownership level change is conditional on being in a particular car ownership state in the first instance (i.e. owning zero, one or two cars). The adjacent table outlines predictors of households belonging to

Attribute	0 car	1 car	2 cars
Household composition and life-stage			
Household size	-	-	+
Cohabiting	-	+	+
Children present		+	
Eldest householder <44	+	-	-
Eldest householder 75+	+	+	-
Income	-	-	+
Socio-economics			
Educational qualifications	-	+	+
In employment	-	+	+
Residential context			
Settlement size	+		-
PT, local amenities and population density	+		-
Deprivation	+		-

these different car ownership states in wave one (2009/10):

Non-car ownership is predicted by being a younger household, not having cohabitating adults, lower educational and economic status, living in a larger urban area, greater access to local services and buses and higher level of deprivation.

Two car owning households are predicted by being an older household (but not 75 years or older), having cohabitating adults, higher educational and economic status, not living in a

larger urban area, lack of access to local services and rail station and lower level of deprivation.

The one car owning state occurs across a broader range of circumstances although notably is predicted by being a single adult household, having children present and being an older household (aged 60 years and above). These results are consistent with the notion of the household car ownership life-cycle but show also that socio-economic and spatial circumstances matter. There is also substantial unexplained variation in the models, indicating that car ownership varies among similar households and lifestyles and attitudes play a role.

Which life events and other factors predict *changing* between different car ownership states?

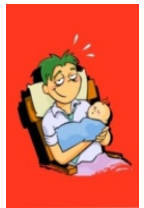
The role of biographical life events as predictors of the different car ownership level changes is summarised in the table overleaf. The number of +/- signs indicates the magnitude of effect of the life event on the likelihood of a car ownership level change occurring. The lighter tone indicates that relationships are only significant at the 90% level compared to the 95% significance level for all other relationships.

Family biography: Increases and decreases in the number of adults in a household are seen to have a large impact on the number of cars in the household. The impact is particularly pronounced for the start and end of co-habitation which have large upwards and downwards influences respectively and imply that cars are brought and taken with people as they experience these events and not shared by partners. The adult household composition life events are the strongest predictors of changes in car ownership.



Life event	0 to 1 car	1 to 2 cars	2 to 1 car	1 to 0 car
Family biography				
Gain an adult	++	+++	-	
Lose an adult			+++	++
Gain partner	++	++		-
Lose partner			+++	++
Had child	++		++	
Acquired driving licence	+++	++		-
Residential biography				
Residential relocation			+	++
Increase in no. of bus stops				+
Increase in pop density		-	+	
Employment biography				
Gain employment	+	+		-
Switch employer		+		
Lose employment			+	++
Retire				++
Increase in income	+	+	-	-

Birth of a child increases the likelihood of a non-car owning household acquiring a car by 2.2 times and increases the likelihood of a two-car owning household relinquishing a car by 2.1 times without any effect on one-car owning household making a change. This suggests that a one car solution is often sought when having a child.



Where someone gains a driving licence in the household the likelihood of acquiring an additional car is much higher regardless of whether there is already a car in the household. This shows that those gaining a driving licence are

committed to getting access to their *own* car.

Employment biography: Car ownership is sensitive to employment status with increases and decreases more likely for households where someone moves in and out of employment. For example, loss of employment in a household with one car increases likelihood of relinquishing a car by 2.2 times. This suggests that employment is seen to necessitate a car and provides financial resources to afford one. Car ownership is sensitive to income changes with car ownership reductions *more* sensitive to income change. This implies that in 2010/11 households were inclined to economise by relinquishing a car when experiencing income reductions. Retirement was found not to impact upon likelihood of relinquishing a car, implying that cars are retained at this time. A change of employer was found to moderately increase the likelihood of increasing car ownership. Without being able to consider the nature of the location change, this result suggests that employment location changes have the tendency to introduce the need for more car mobility.



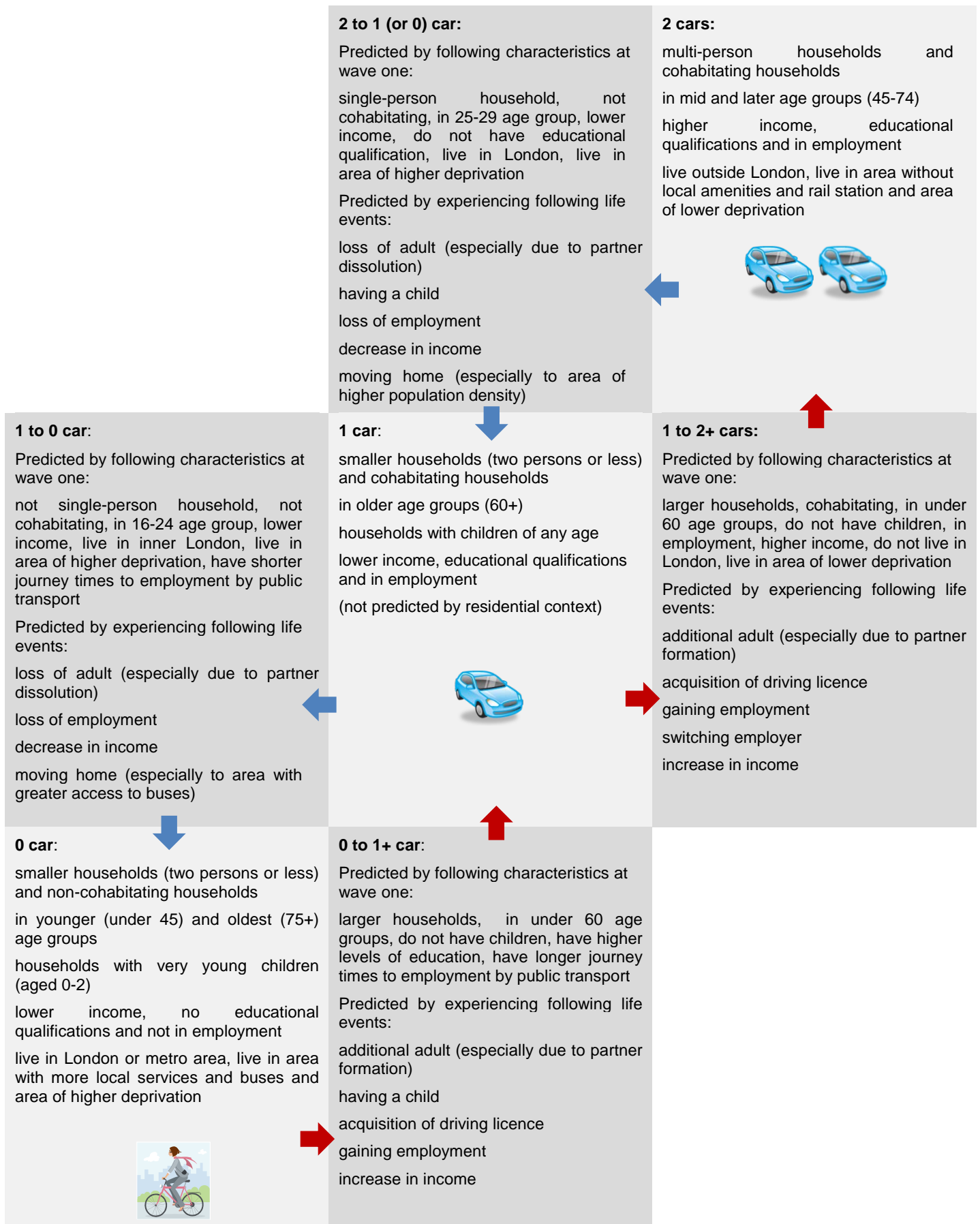
Residential biography: A change in residential location was found to moderately increase the likelihood of decreasing car ownership (after controlling for changes in household composition which often occur at the same time as moving home) with this effect more pronounced when the move was to an area with more services (more bus stops, higher population density). This implies that residential moves generate deliberation over car ownership needs, although we cannot say whether in advance or after moving.



Baseline circumstances: Apart from direct impact of life events, the models we estimated showed household circumstances at wave one also exerted influence on likelihood of changes to car ownership. For example, larger households are shown to exert pressure on car ownership increases, while having children reduces likelihood of increases. Younger households are more likely to decrease car ownership, indicating the volatility experienced in early adulthood and showing the life-cycle effect can only be considered a general tendency and not a normative experience. Poor access to employment opportunities by public transport was found to increase likelihood of non-car owning households acquiring a car and better access was found to increase likelihood of one-car owning household relinquishing a car. This suggests that good public transport provision to jobs can restrain demand for car ownership.



Predictors of different car ownership states and transitions between them



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