

CTS
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Transforming Rural Lives: The Role of Demand Responsive Transport in Connecting Communities



Policy context

- Decline in provision of bus services in England since 2010, particularly acute in rural areas (County Councils' Network, 2023).
- Car ownership levels higher in rural areas than urban areas but not everybody can make journeys by car.
- National bus strategy and funding seeks to counter decline in bus provision and use.
 - DfT allocated £20 million in 2021 through the Rural Mobility Fund (RMF) to 15 local authorities (LAs) in England to trial innovative Demand Responsive Transport (DRT).
 - LAs have also used other funding sources to introduce DRT services.
 - DRT viewed as potentially better meeting the needs of local communities than fixed timetable bus services where demand is dispersed.

Second generation DRT

DRT defined by DfT as:

“a flexible service that provides shared transport to users who specify their desired location and time of pick-up and drop-off”

Latest generation of DRT uses sophisticated algorithms to coordinate the scheduling of passengers, dispatch and routing of vehicles with passengers using an app to book and pay for journeys.





Research gap

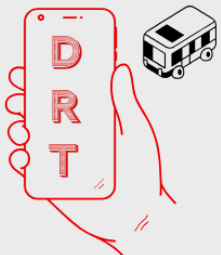
- Past studies of DRT have focused on operational metrics and financial costs.
- Concerns that DRT is costly to run with revenues covering only a small share of running costs (Stonham, 2023).
- DRT services are primarily aimed at improving social inclusion and “... value is not purely a question of ‘pounds in vs pounds out’ but a more complex question that must include the opportunities unlocked by the existence of the service” (CoMoUK, 2023).



DRT Connecting People to Opportunities project

Funded by UKRI Creating Opportunities Evaluation Development Fund with objectives:

1. To apply an innovative, participatory methodological framework to measure the impact of public transport on life-defining economic, social and health outcomes.
2. To estimate the social value of DRT schemes in areas of rural deprivation and their contribution to reducing place-based inequalities.
3. To inform policy in relation to the future of DRT and broader public transport services.

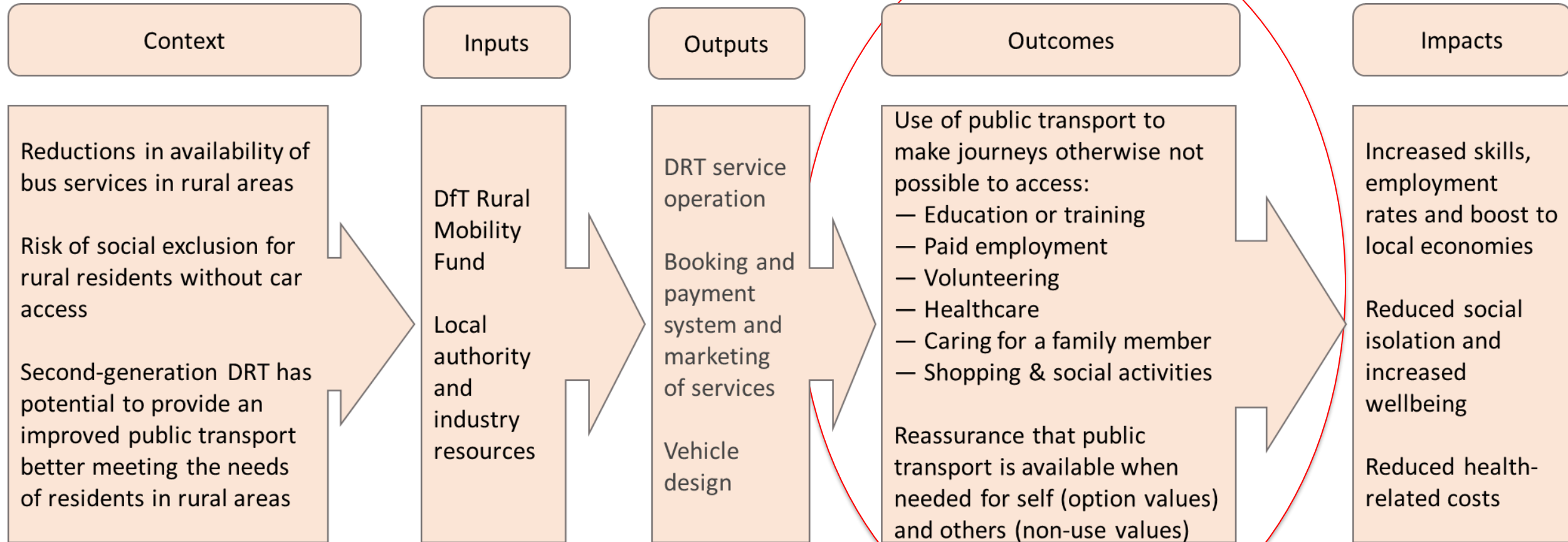


**DEMAND RESPONSIVE
TRANSPORT
CONNECTING PEOPLE
TO OPPORTUNITIES**





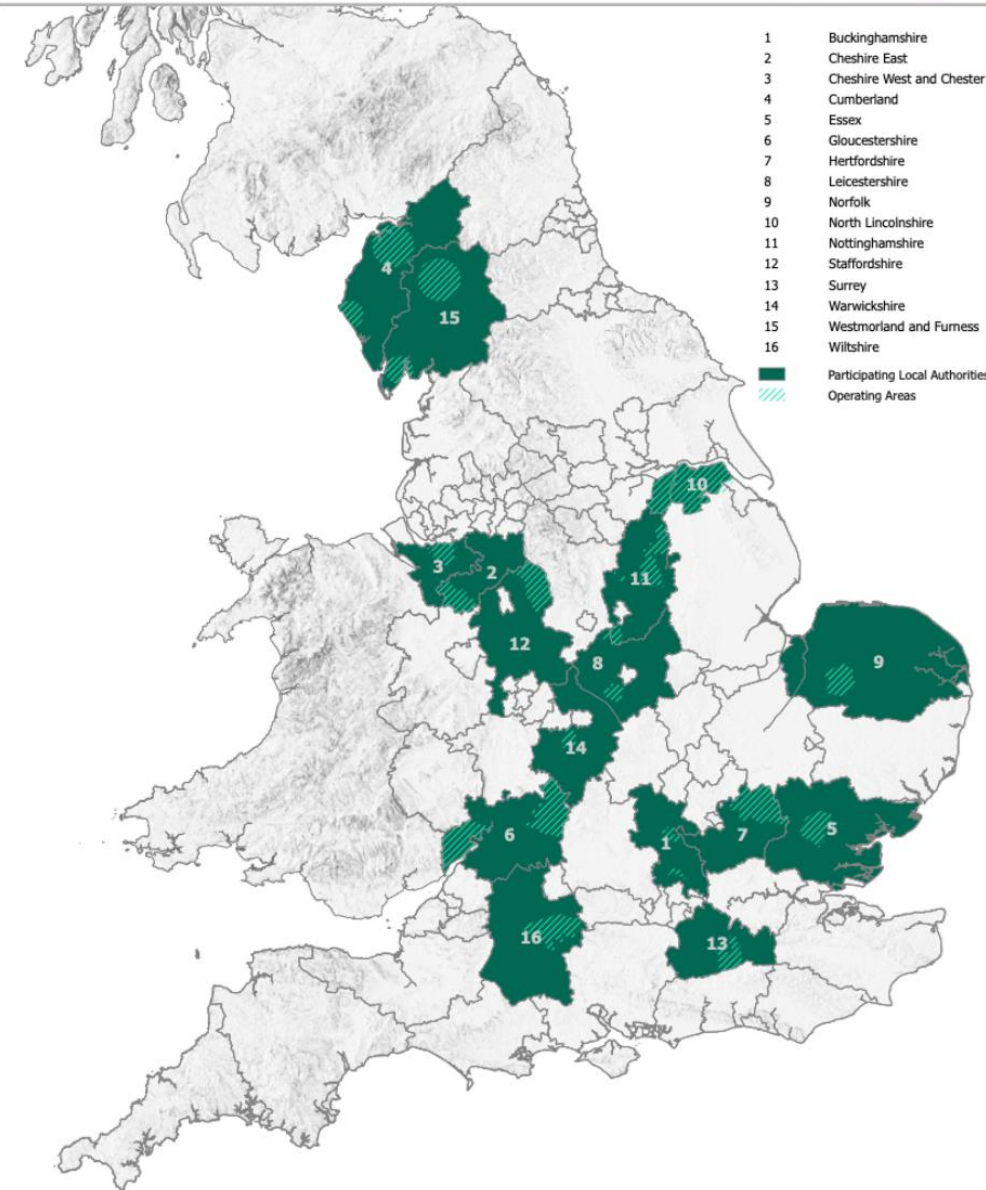
Logic model for impacts of DRT in areas of rural deprivation



Selection of case studies

- We are evaluating Rural Mobility Fund for DfT so we had familiarity with many DRT schemes
- We chose three DRT schemes in Essex, Gloucestershire and Nottinghamshire serving rural areas with relatively high deprivation.
- The three county councils were happy to be project partners and were interested in social value (£) of DRT

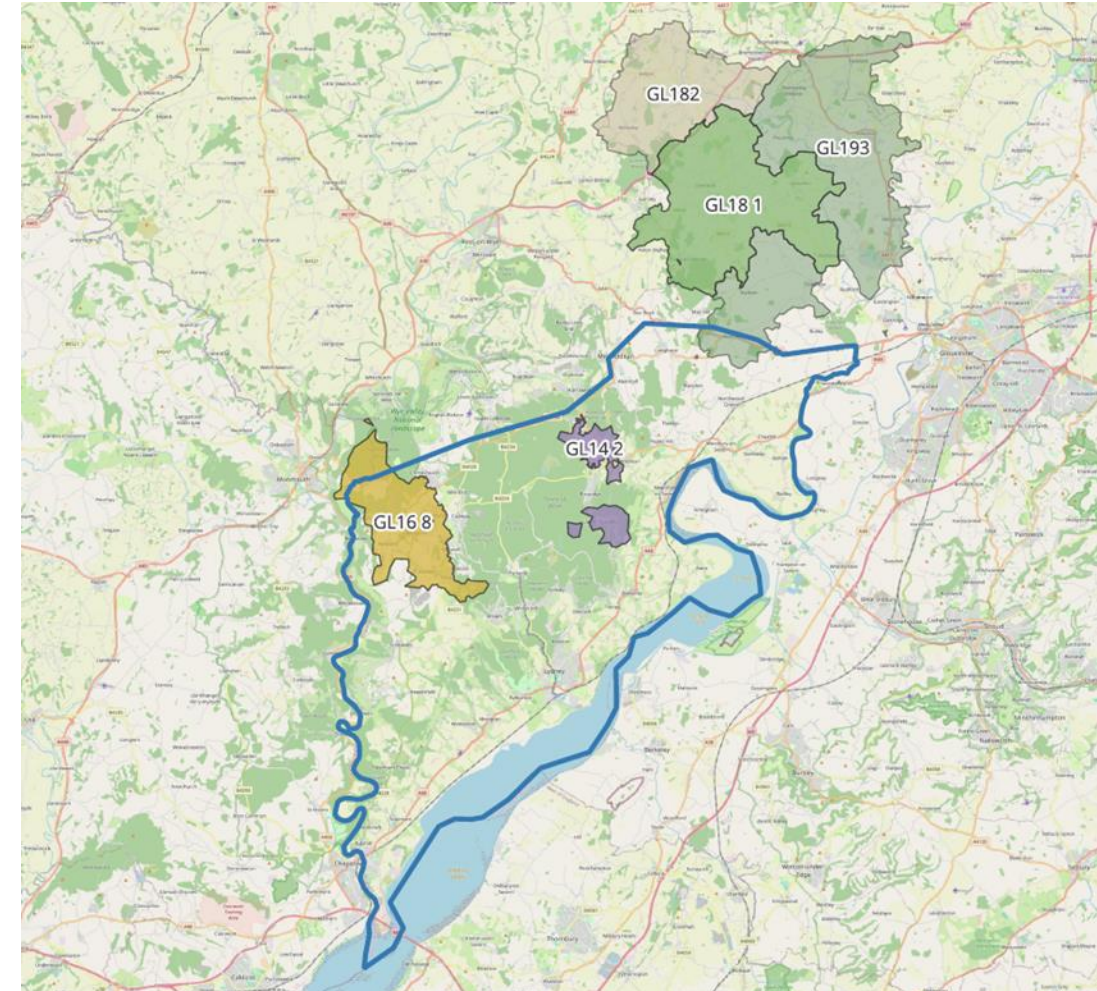
Local authority	Scheme area	Pop'n	No. of vehicles	#LSOAs in 50% most deprived
Essex	Central Essex & South Braintree	69k	6	4
Gloucestershire	South Forest of Dean	64k	1.5	18
Nottinghamshire	North & South Ollerton	29k	6	7





Research design

- Quasi-experimental approach, considering outcomes for both residents in DRT scheme areas and comparator areas
- Selected sub-areas for data collection in consultation with LAs
- Data collection involved surveys of:
 - Residents of DRT service areas
 - Residents outside DRT service areas
 - DRT users




South Forest of Dean




Survey distribution and design

Distribution


- Flyers mailed to every home in selected postcode sectors
- Invitation messages sent to DRT users via app
- Followed up with field visits (door knocking, visiting community hubs, riding DRT)



Have your say on **public transport** in the **Forest of Dean** 


This is an opportunity to share your experiences and views of public transport in your area and how this affects your life. Feel free to **enter the prize draw** upon completing the survey. Thanks for your help!




Just point your phone camera to the QR code (image) above and follow the link to complete the survey, or go to www.drtconnecting.co.uk/fod1

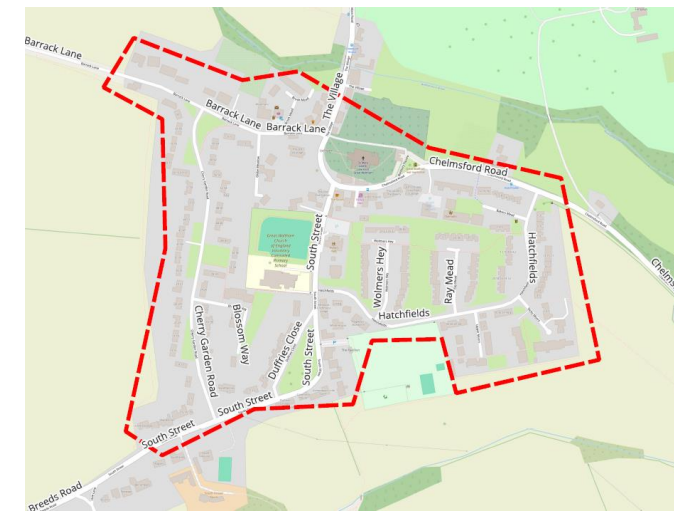
A national study funded by  UK Research and Innovation

Project partners  UNIVERSITY OF LEEDS 

Notification Centre 

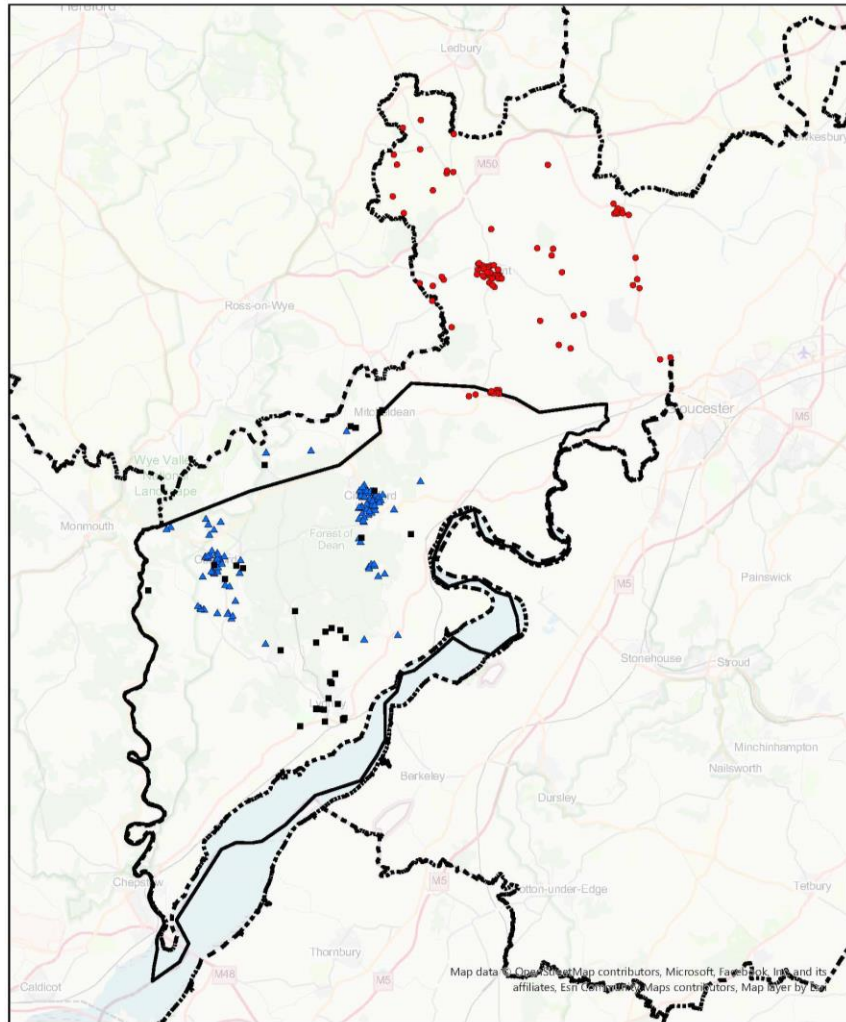
 **Nottsbus On Demand** Yesterday, 18:00

Travel in the North Ollerton or South Ollerton Zones? Check your Nottsbus On Demand app to complete a survey with a chance to win a prize!





Survey sample: Geographical distribution focusing on Gloucs



Respondent type

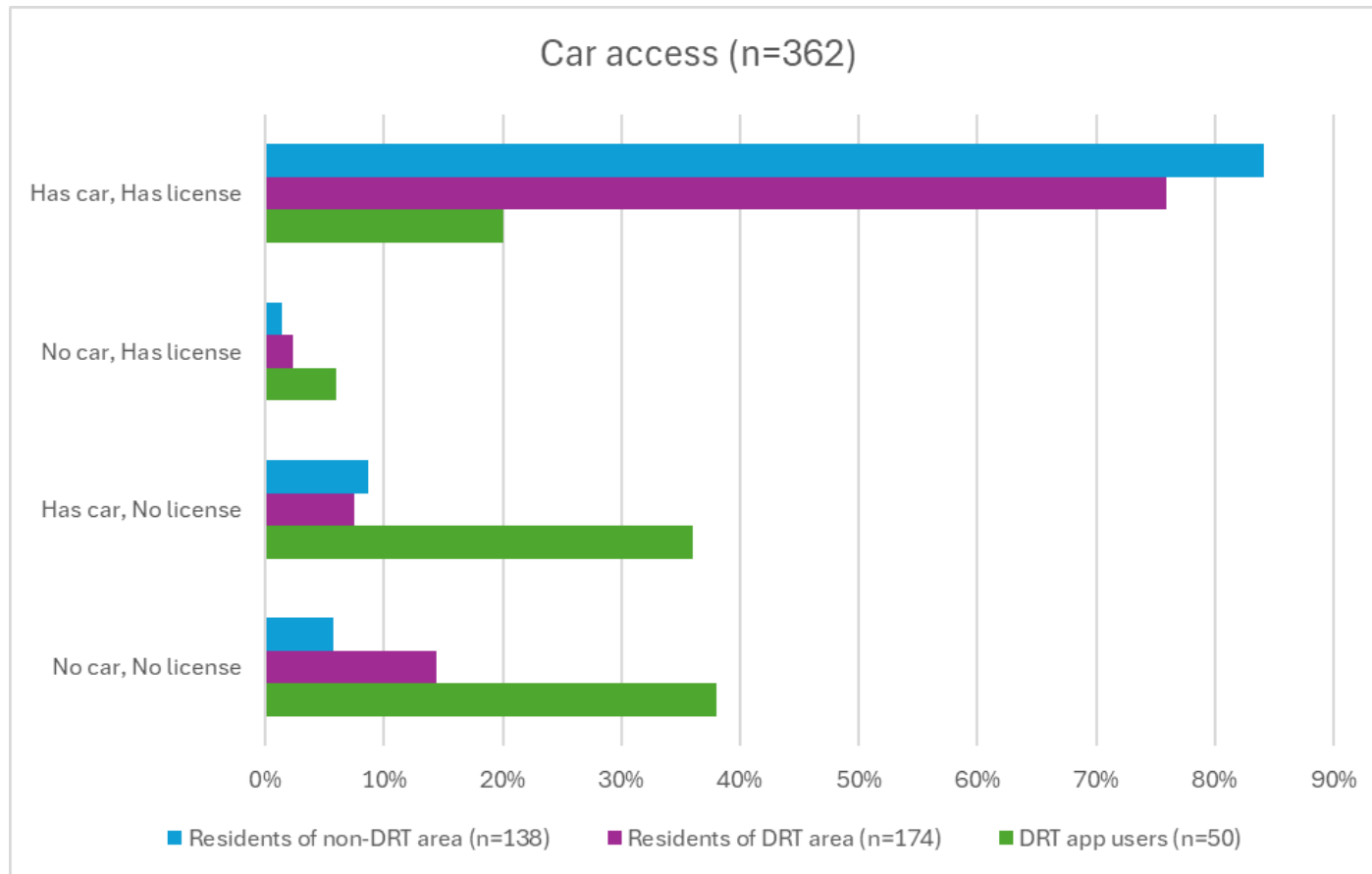
- ▲ Residents of DRT area
- Residents of non-DRT area
- DRT app users



- Home locations of residents of DRT area and non-DRT area are clustered in postcode sectors selected for mail-out flyers
- Home locations of DRT app users are spread more widely in DRT area with some outside DRT area
- Summary of total responses received for three counties set out below

	Residents of DRT area	Residents of non-DRT area	DRT app users	Total
Essex	158	51	404	613
Gloucestershire	174	138	51	363
Nottinghamshire	145	108	141	394
Total	477	297	596	1370

Survey sample: Car access focusing on Gloucs

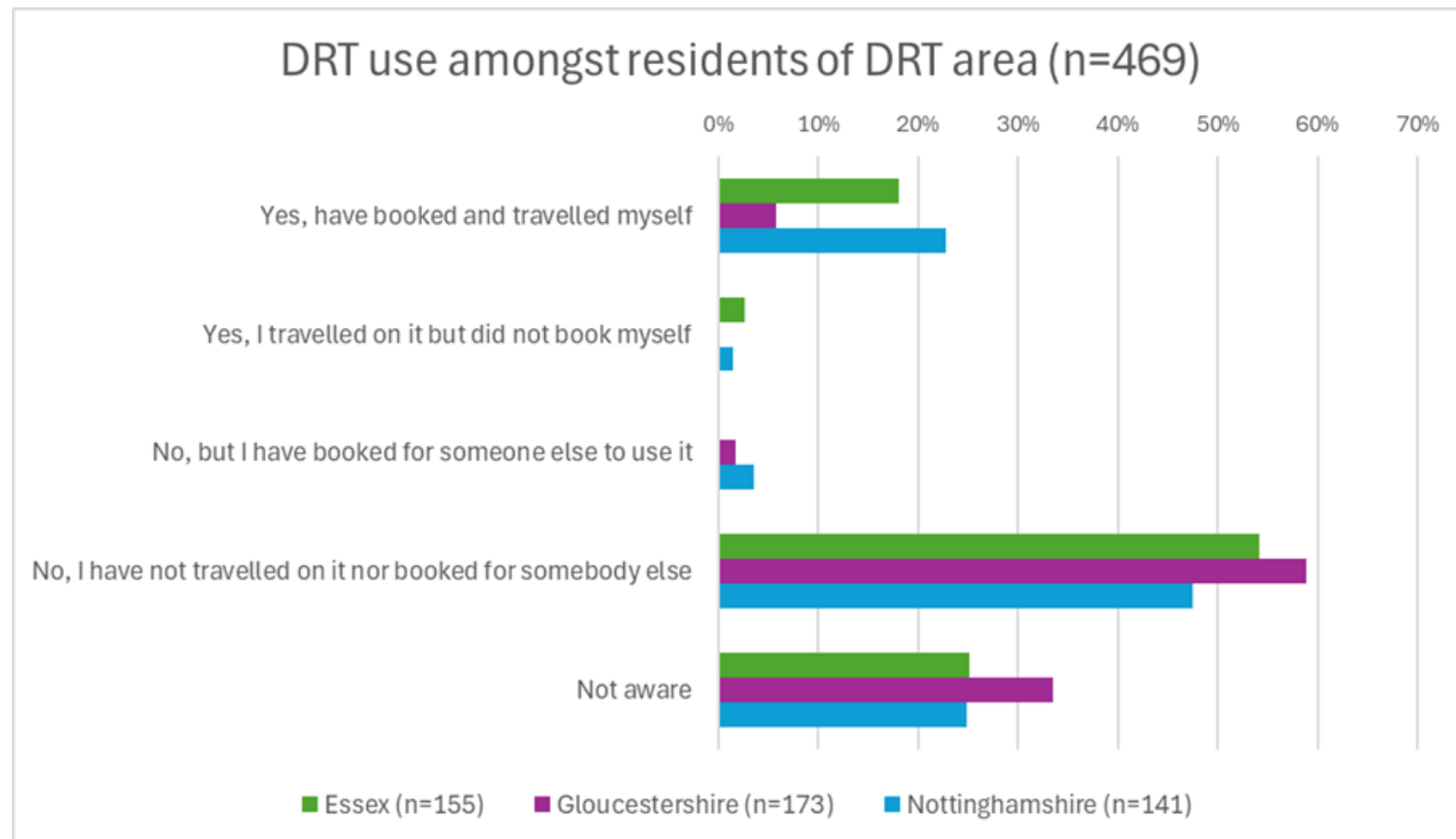


- Most of the residents of DRT area and non-DRT area had a car and driving licence.
- 38% of DRT app users neither had a car nor driving licence, 36% had a car and no licence and 6% had no car but a licence, highlighting that DRT is serving many people who cannot drive themselves
- Looking at this the opposite way, 20% of DRT app users had a car and driving licence which shows DRT is also attracting those who do have a car and licence.

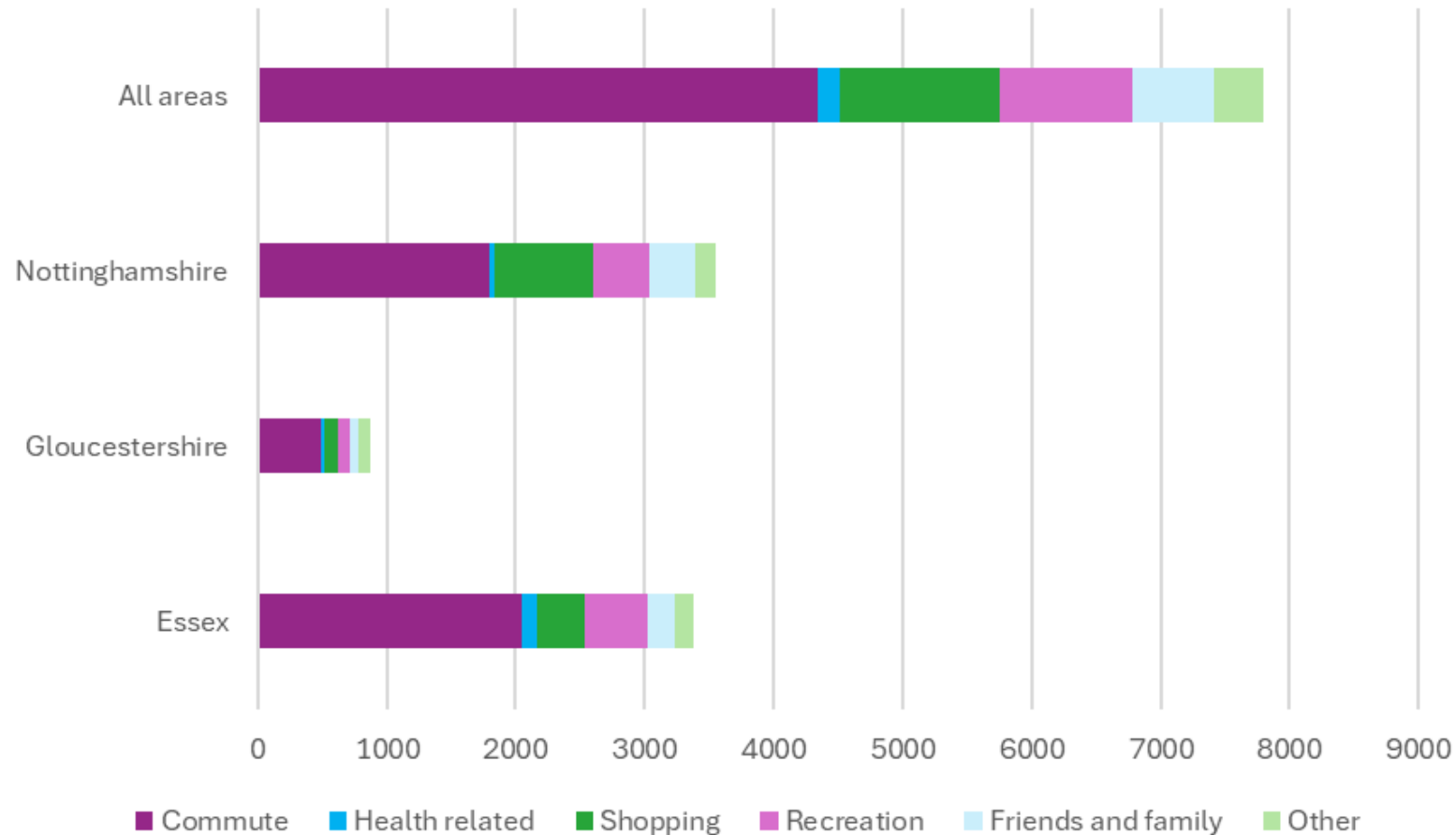


DRT awareness and use

- About 70% of residents of DRT areas were aware of DRT
- Between 6% and 23% of residents had used DRT in three areas
- Nearly all DRT app users had used DRT (94% in Gloucs)
- DRT users spread across the age range and more women than men



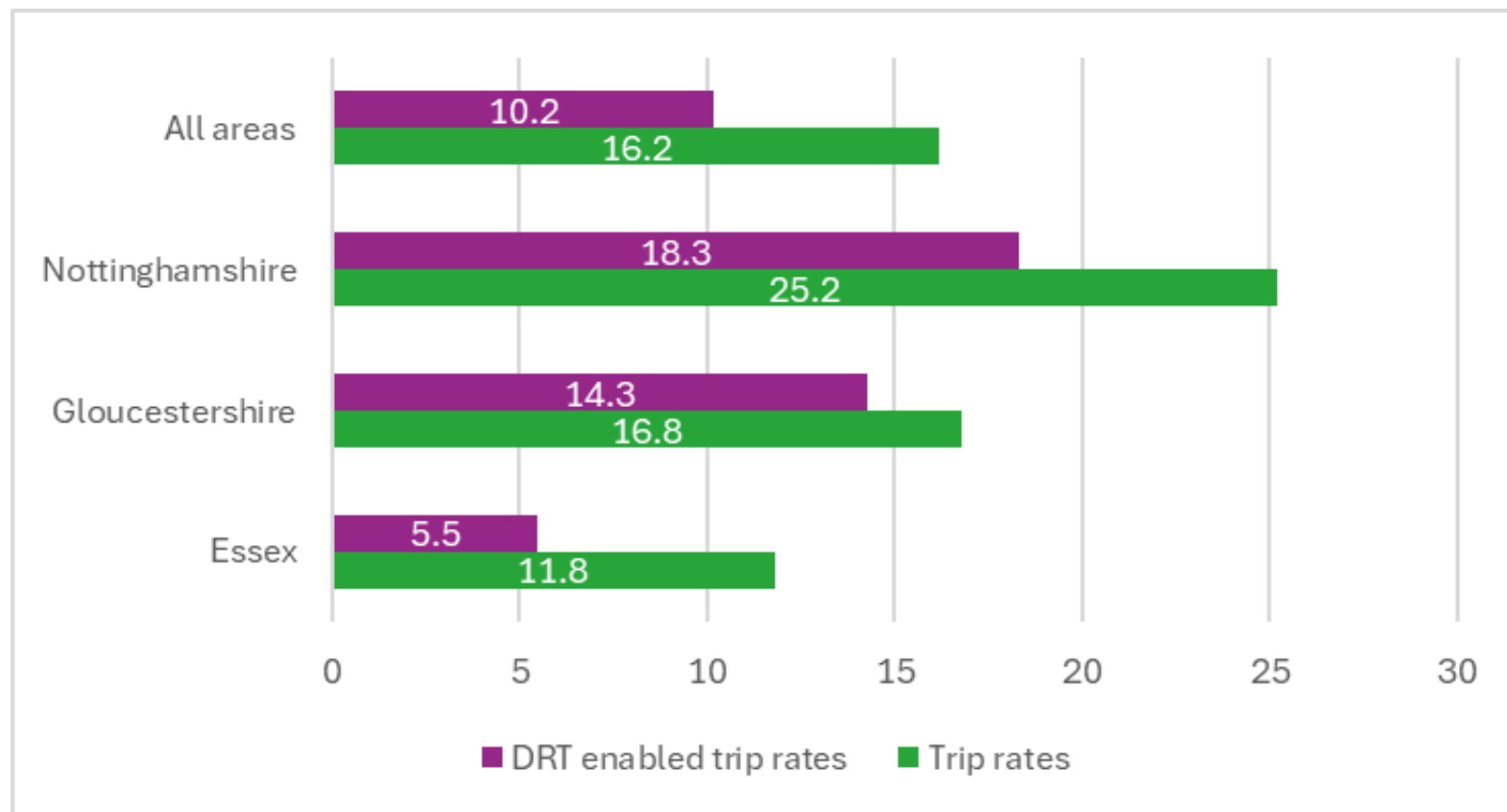
DRT total trips by purpose over last three months



- Of the 7,802 trips recorded by 496 individuals across three areas, the majority (56%) were for commute (to work/education) purposes, with a further 16% for shopping and 13% for recreational purposes.



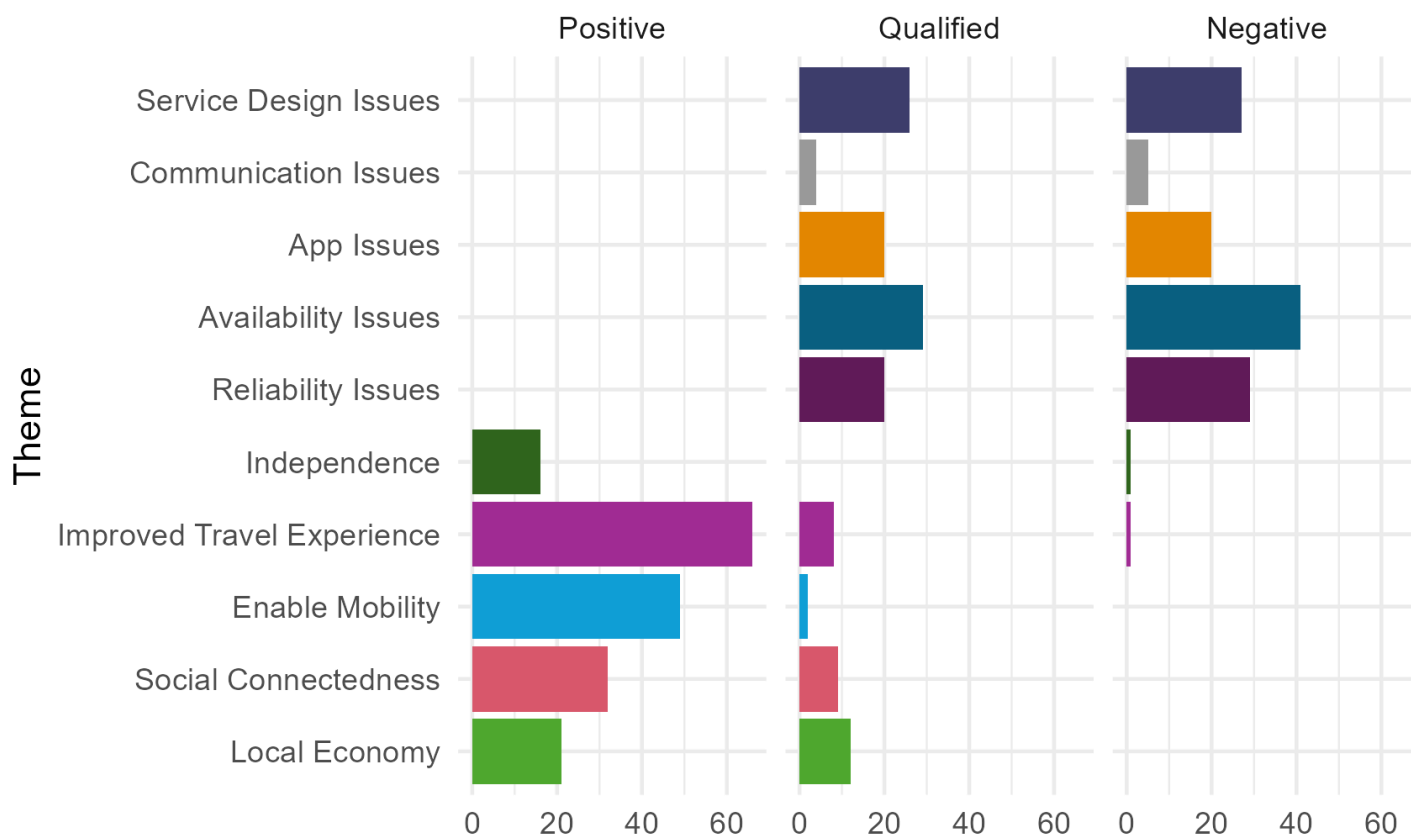
DRT enabled trips per user over last three months



- Trip rates highest in Nottinghamshire (25 per individual over 3 months) and lowest in Essex (12 per individual) amongst DRT users.
- High percentage of trips in South Forest of Dean (Gloucs) not possible without DRT (85%)



How DRT has affected users



- The chart shows open-text responses to the question on perceived impacts (positive and negative) of DRT on users. It covers three counties.
- 49% of the 324 respondents who filled out this question expressed positive sentiment about the impact of the DRT service on their lives, and a further 21% were positive but with qualification, expressing some criticism of the service. 24% expressed negative sentiment and 5% of comments had no discernible sentiment.
- The results of the thematic analysis are presented split by the different sentiments the users expressed in their comments. For negative comments, issues related to DRT availability and reliability were the most frequently cited problems.

“The Robin has made life so much easier I no longer have to wait hours to start work. The only thing is sometimes it can be difficult to book due to the system”



Summary and next steps

Findings so far

- DRT is used both by those with and without the option of driving a car.
- High proportion of trips made for work and education.
- Two-thirds of trips and their associated activities would not be possible without DRT.

Further analysis

- Estimate total number of activities of different types made possible by DRT and the social value (in monetary terms) of these based on established economic values for participation in activities.
- Estimate the non-use value placed on DRT based on SP data.
- Analyse 26 interviews of DRT users to reveal in more depth the role of DRT in their lives.

Thank you for listening!

<https://www.drtconnecting.co.uk/>

SPARE SLIDES

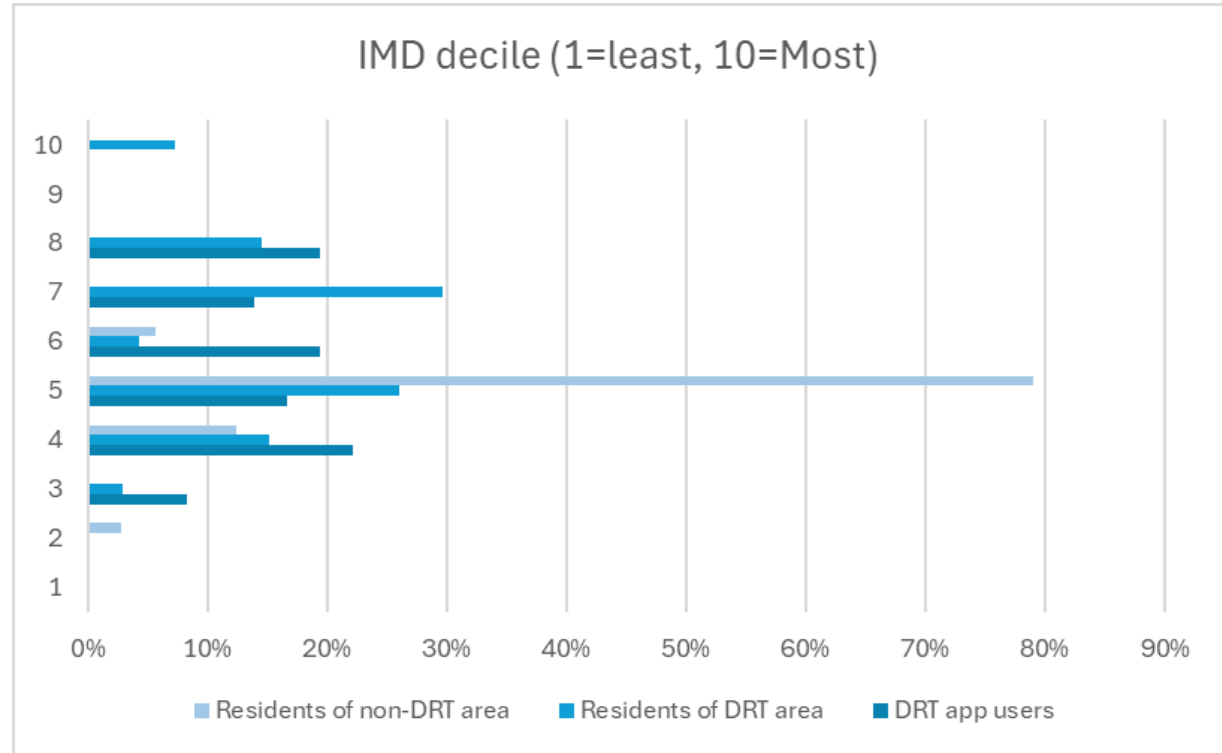
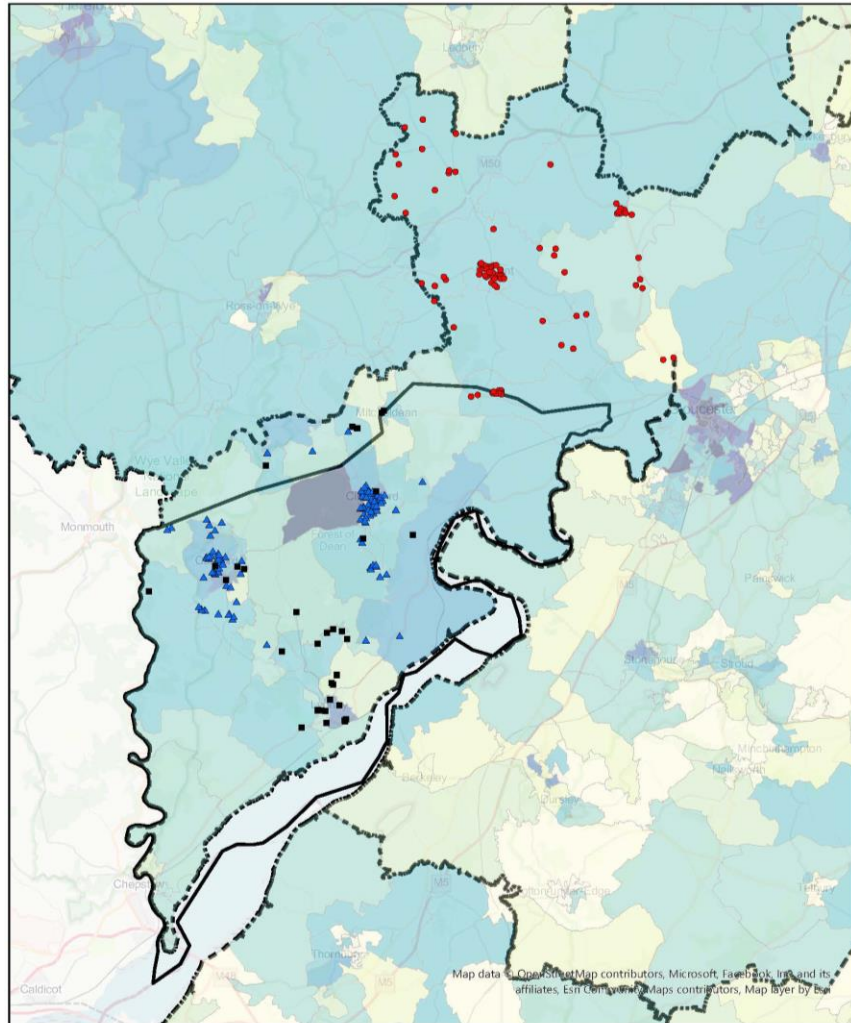


Survey question content

1. How You Get Around for Different Travel Needs
2. Availability and Use of Local Public Transport
3. The Last Occasion You Used DRT
4. Your use of DRT in the Last Three Months
5. Your Preference for [DRT brand name] {SP exercise}
6. Your Local Area and Wellbeing
7. Personal and Household Details

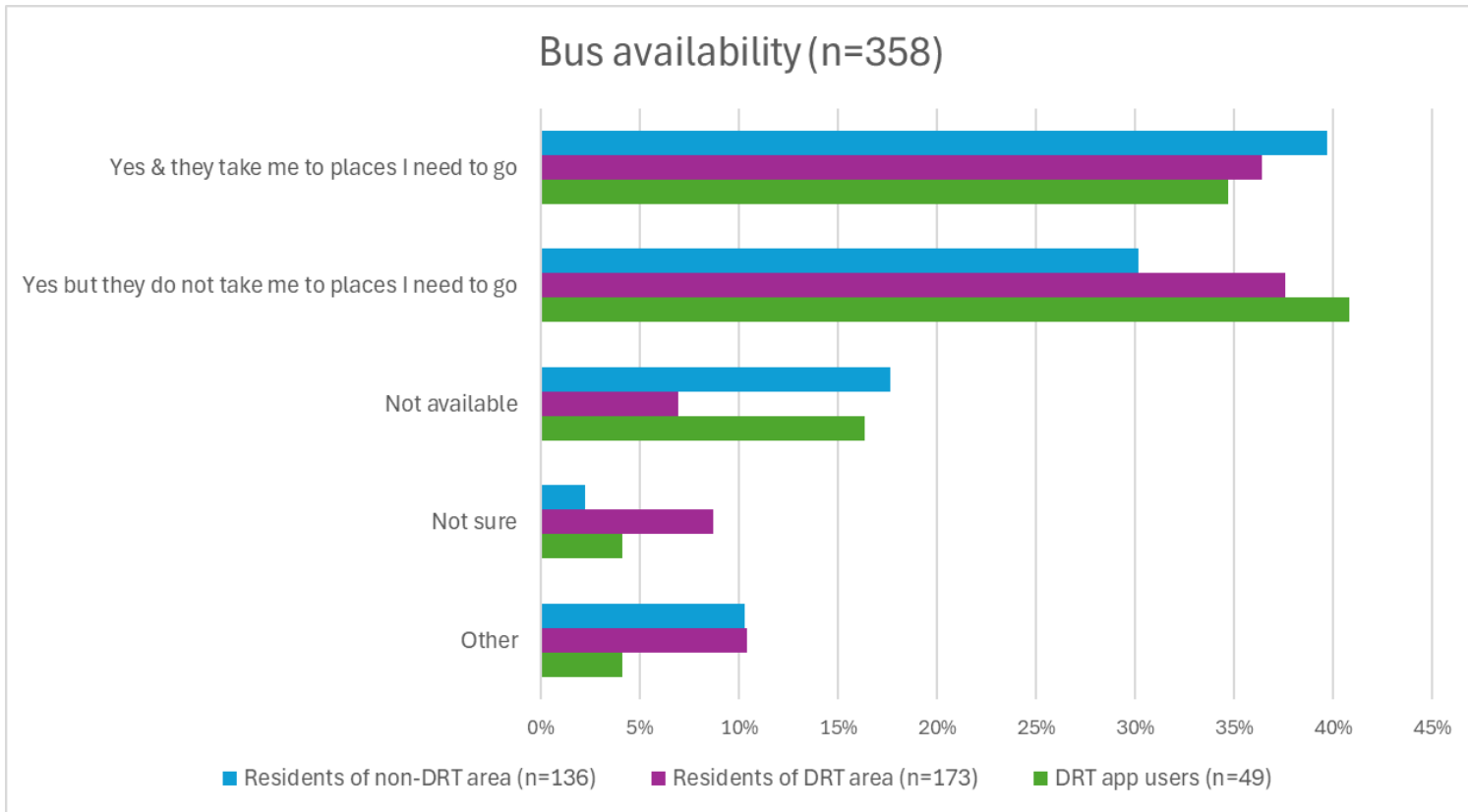


Survey sample: Deprivation focusing on Gloucs



- Respondents are spread across IMD deciles, particularly residents of DRT area and non-DRT area where high deprivation deciles were targeted for mail-out flyers and in-person visits
- 51% of residents in the DRT area and 33% of app users live in high deprivation deciles (7-10), while most participants from non-DRT areas reside in IMD decile 5.

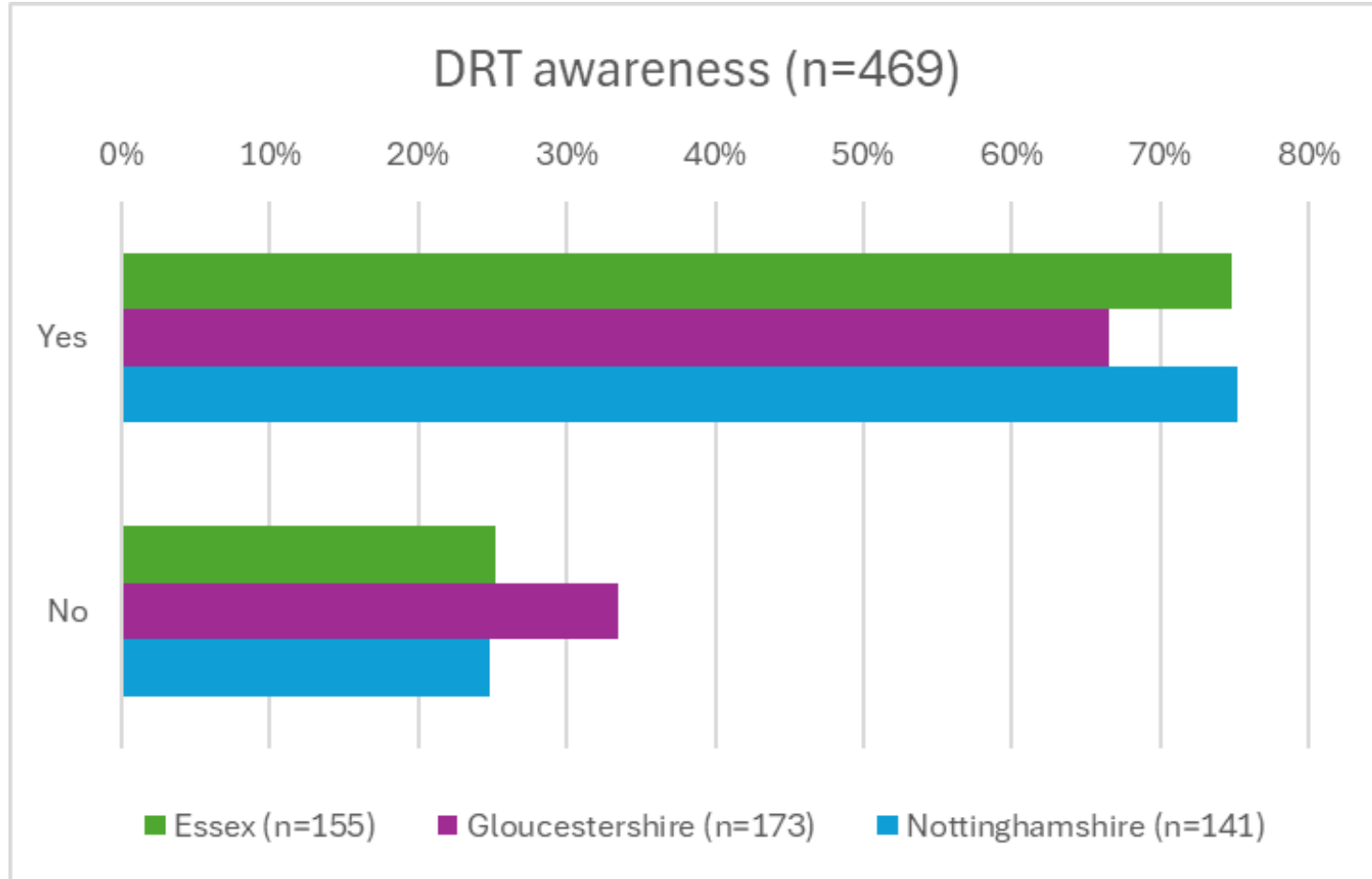
Survey sample: Bus availability focusing on Gloucs



- Most respondents said they had buses available in the areas where they lived but many said these did not take them where they needed to go.
- Residents of non-DRT area and DRT app users were more likely to say they did not have buses available at all (18% and 16% respectively).

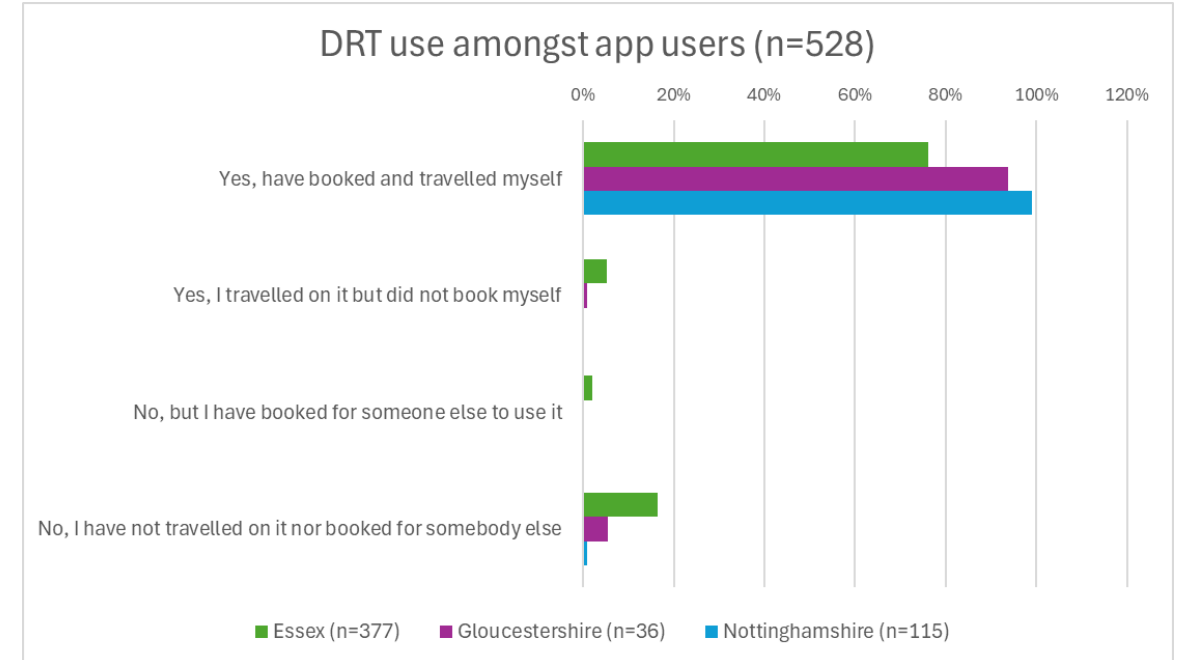
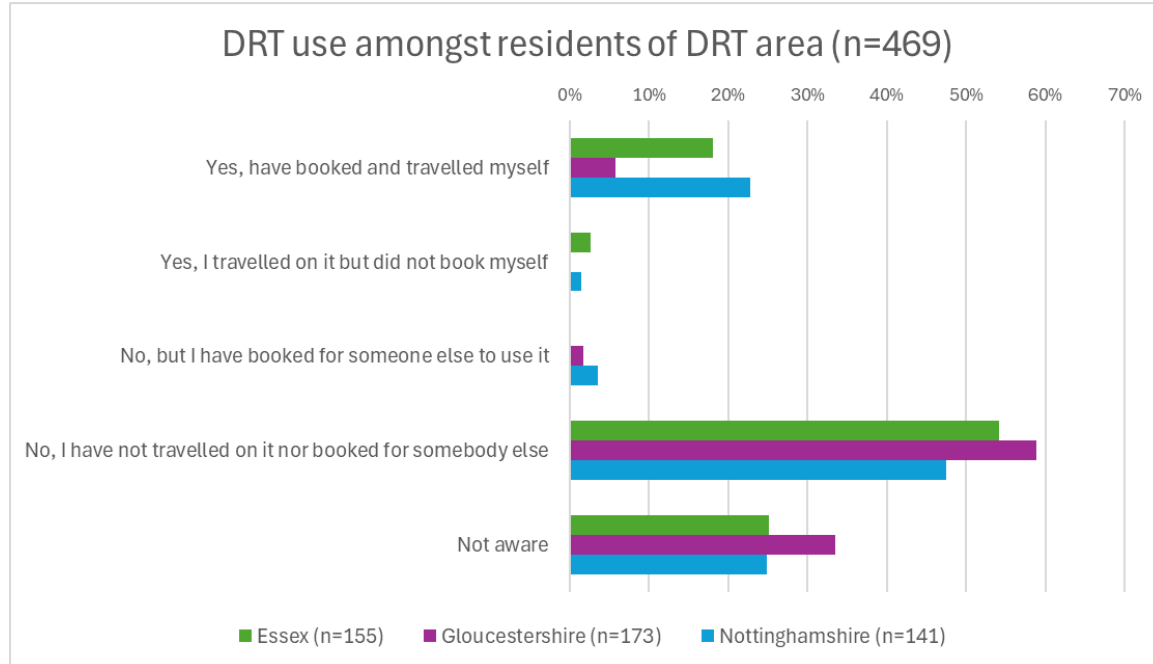


DRT awareness



- One-third of residents of DRT area in Gloucestershire were aware of the Robin on-demand bus service
- Awareness was slightly higher in Essex and Nottinghamshire than Gloucestershire

DRT use



- 23% of Notts residents of DRT area had used DRT compared to 18% of Essex residents and 6% of Glos residents
- 99% of Notts DRT app users had used DRT compared to 76% of Essex residents and 94% of Glos residents (Travel Essex app includes various transport services, so some users may not have utilised the DRT option)



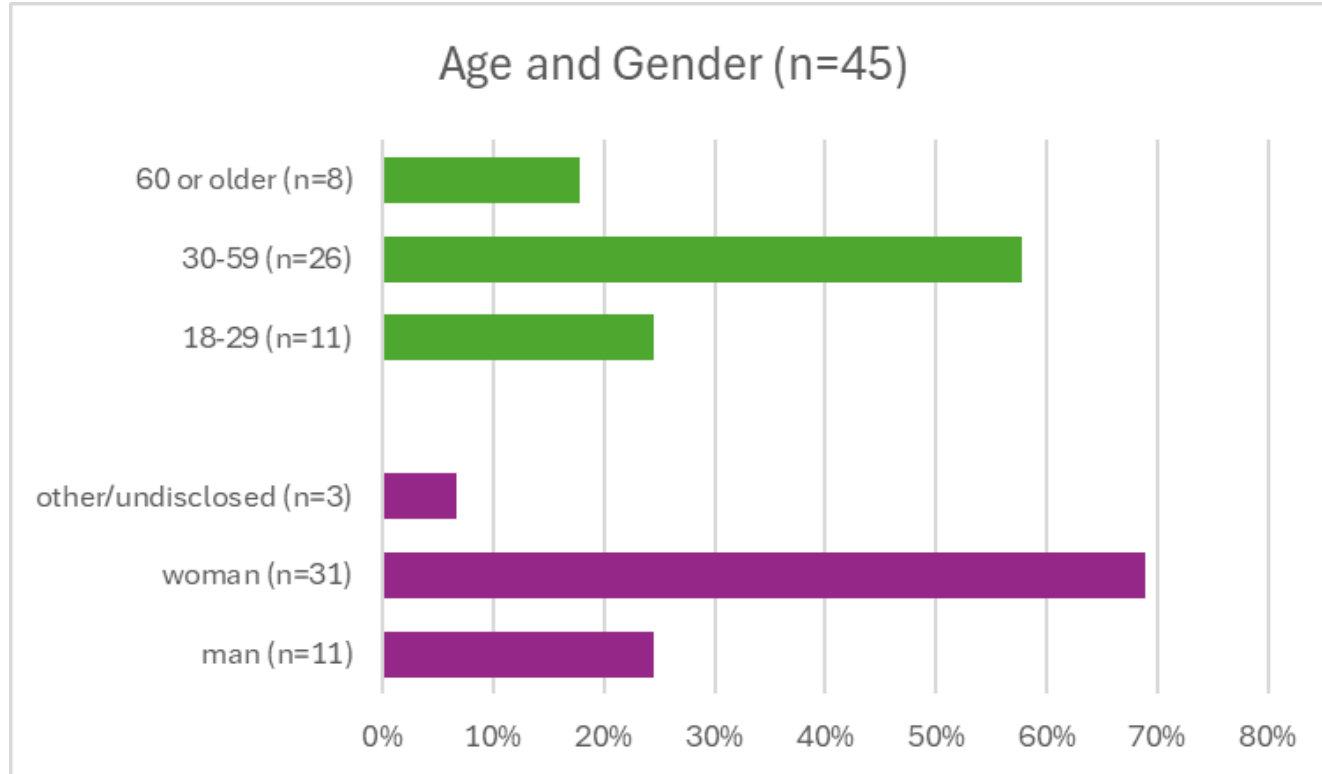
Reasons for not using DRT

Reason	Essex (%)	Glos (%)	Notts (%)
Not sure how to use it	21%	27%	25%
Wasn't able to book	14%	6%	9%
Wouldn't take me to places I need to go	20%	18%	22%
Expensive	2%	3%	2%
Wouldn't feel safe	0%	1%	0%
Other options better/more convenient	15%	28%	15%
Don't like riding with people don't know	1%	1%	0%
Thought it was for other people	4%	1%	2%
Other	24%	16%	25%

- Similar reasons cited across three counties by those who were aware of DRT but had not used it.
- Most common reasons: not sure how to use it; does not take to places need to go; other options better; other.



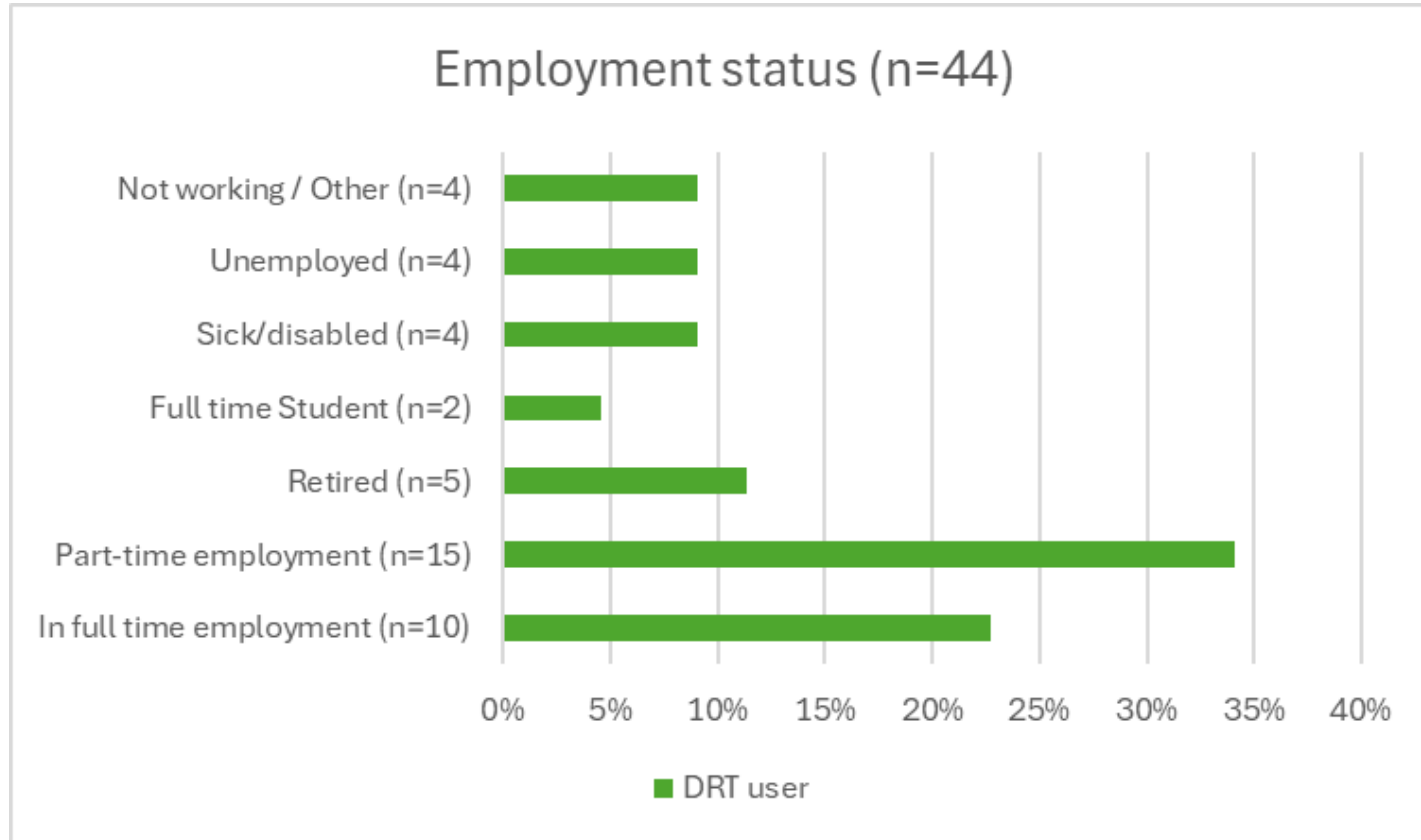
DRT user characteristics focusing on Gloucs



- DRT is used across all age groups with middle-aged individuals making up 58% of users.
- Younger users account for 24% of users, while older adults aged 60 and above represent a smaller but notable share of 18%.
- Women constitute 69% of users and men 24%



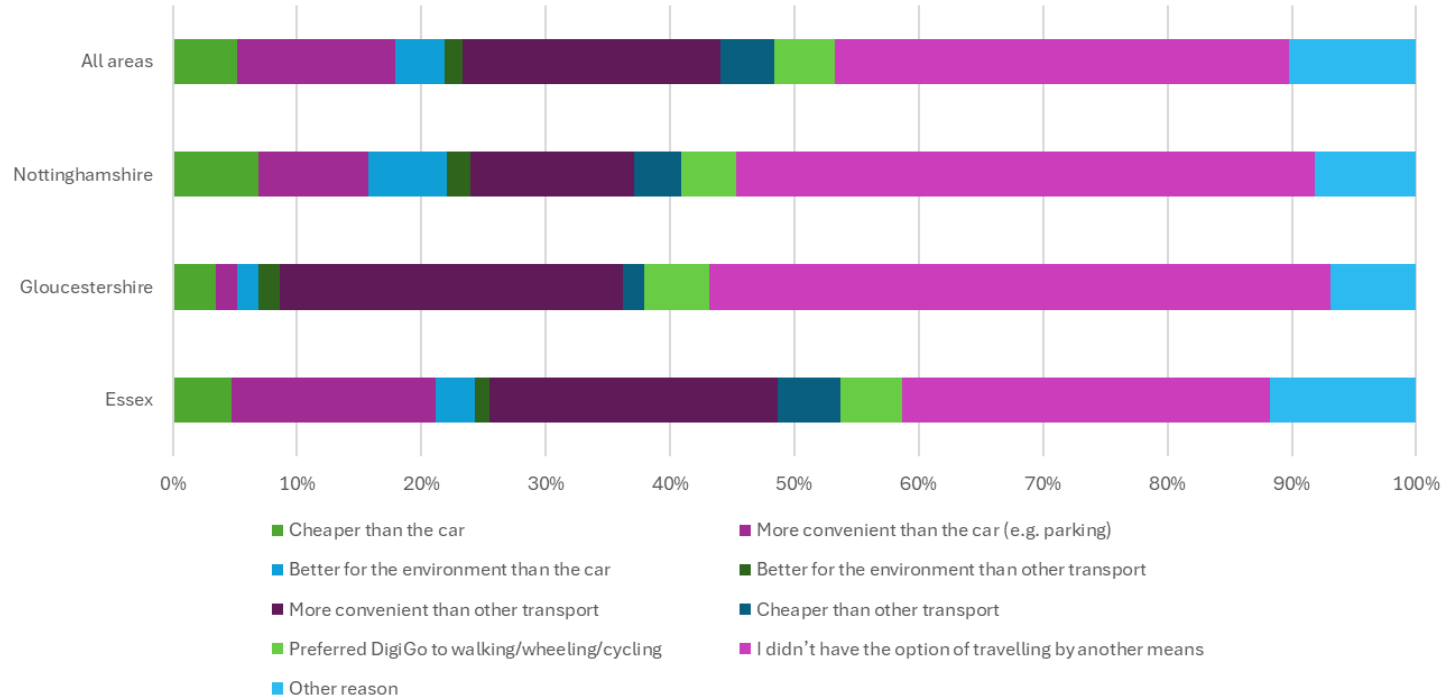
DRT users (employment status) focusing on Gloucs



- 23% of DRT users are in full-time jobs. When including part-time employment, the employment rate of DRT users is 57%.
- 11% of DRT users are retired individuals.



Reasons for travelling by DRT

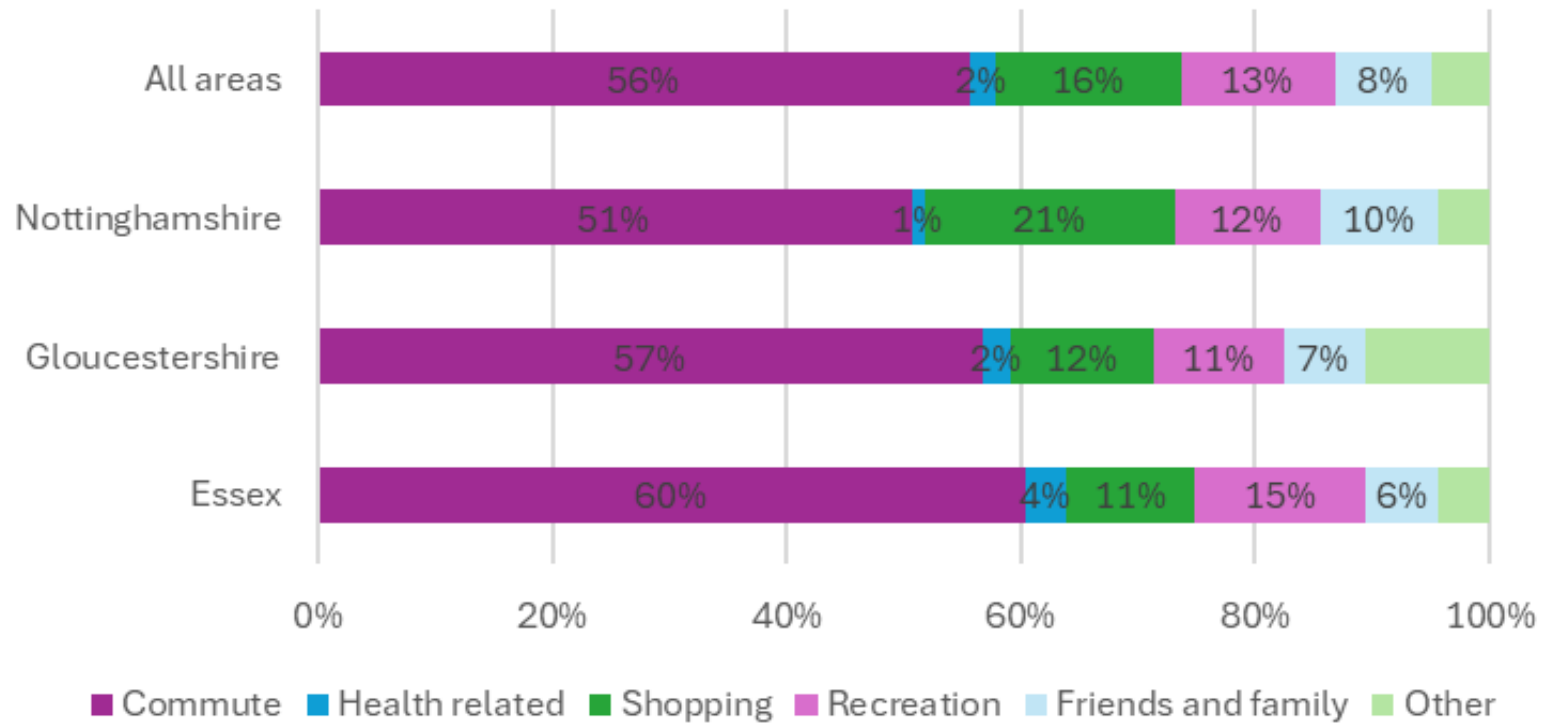


Based on the last journey

- The primary reason DRT users choose to travel by DRT is due to a lack of alternative transport options, with 37% indicating they had no other means of travel.
- Convenience is also a key factor, with 21% finding DRT more convenient than other transport options, and 13% saying it is more convenient than using a car.
- Cost and environmental considerations play a smaller role, with only 5% citing DRT as cheaper than driving, 4% mentioning DRT cheaper than public transport and 4% choosing it for being more environmentally friendly than cars.
- A small proportion (5%) preferred DRT over walking, wheeling, or cycling.

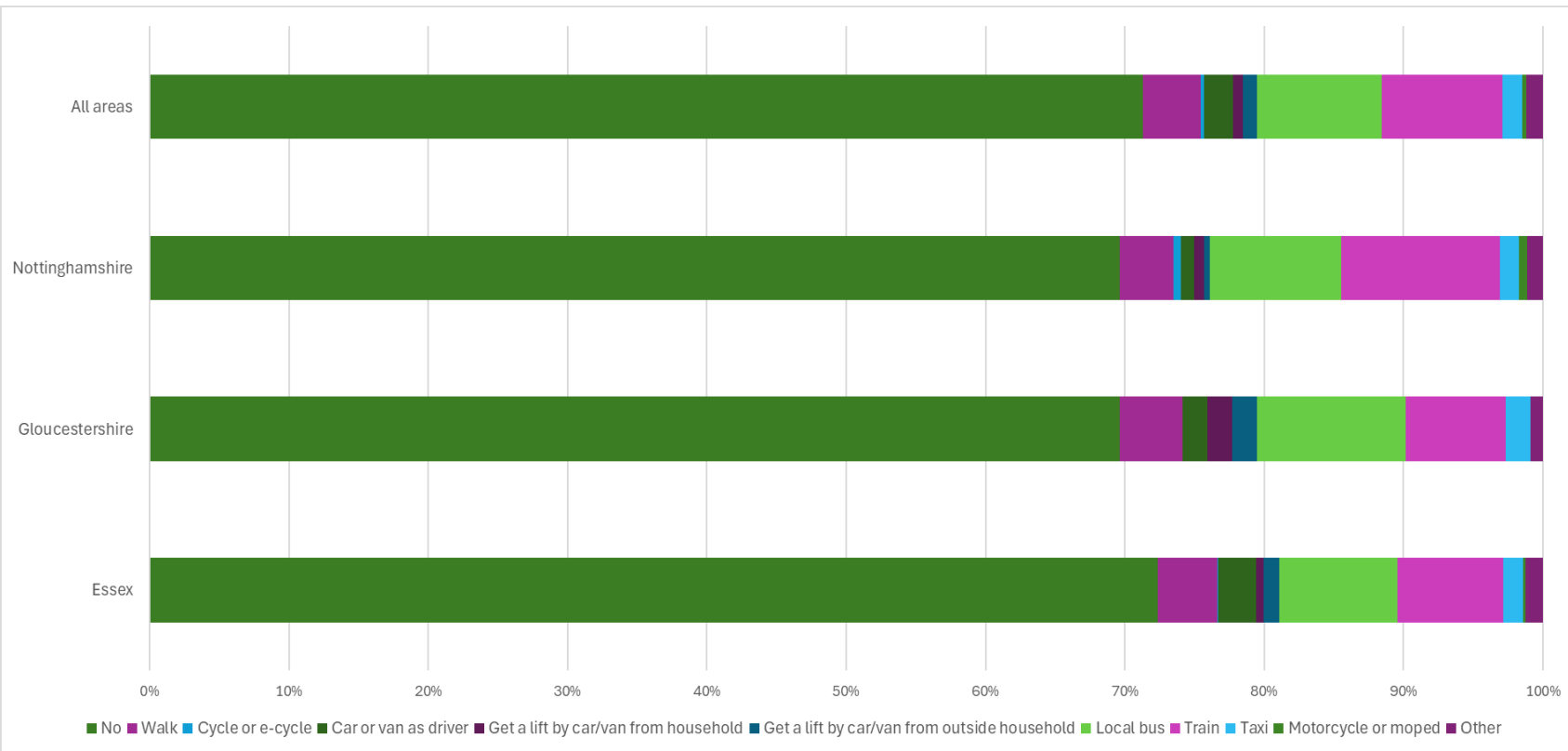


DRT trip purpose splits over last three months



- The proportions of different journey purposes were fairly consistent across the three counties
- The lowest concentration of commuting trips (51%) and highest concentration of shopping trips (21%) were in Nottinghamshire and vice versa in Gloucestershire (57% commuting and just 12% shopping).

DRT combined with other modes

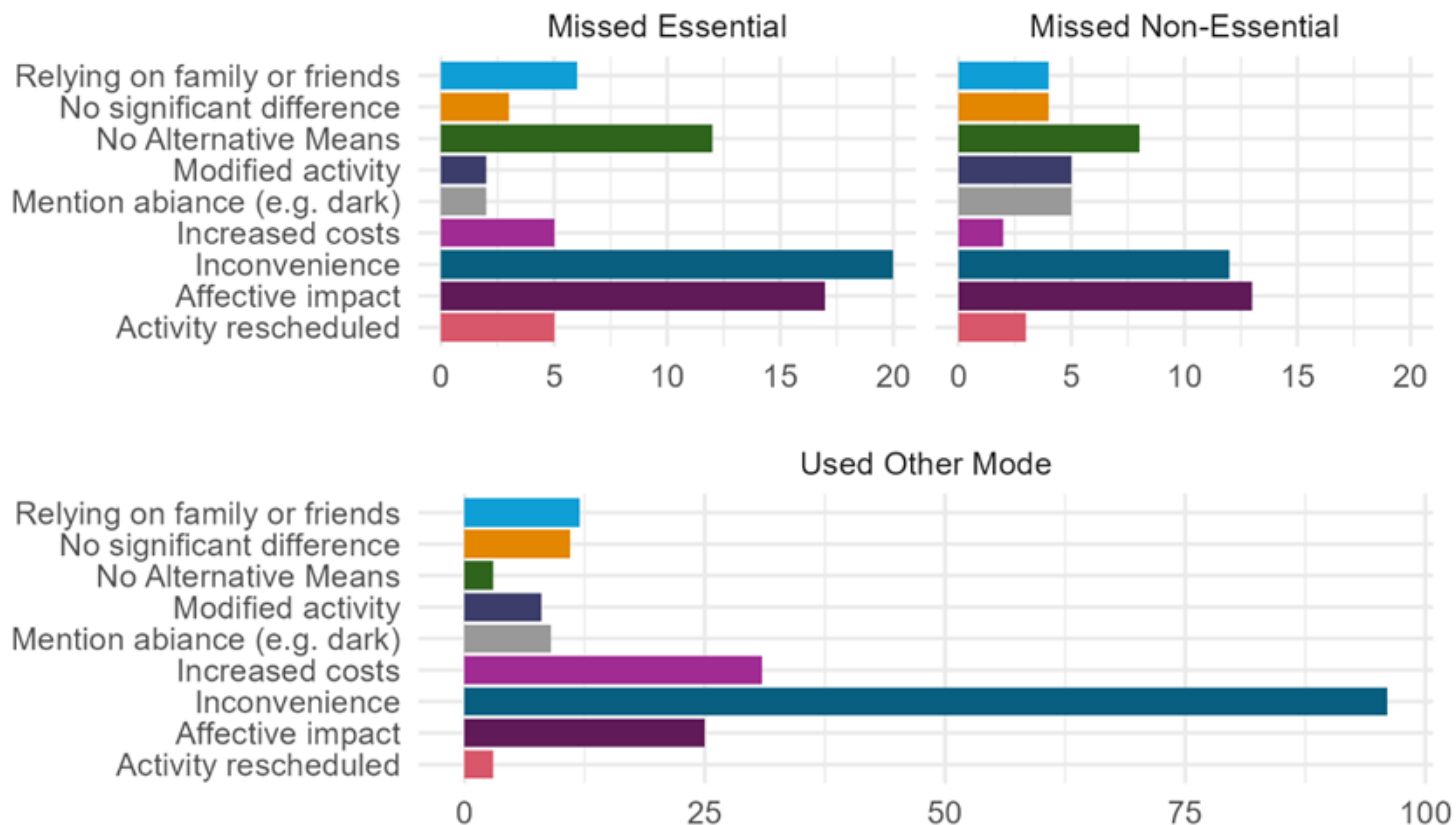


- Across the three counties, 71% of journeys were made without use of another mode.
- 9% of journeys involved DRT in conjunction with local bus services, 9% with train and 4% also walked as part of their journey.

Based on the last journey



Difference made if could not have used DRT



- DRT users were asked what they would have done if DRT service was not available for their more recent journey. 49% responded that they would use another mode of transport, 18% said they would have missed a non-essential activity and 32% said they would have missed an essential activity like a doctor’s appointment.
- Inconvenience was often mentioned both by users who could have used another mode and users who would have missed their activity. Another important theme was ‘affective impact’ which meant they mentioned an emotional state in their response (e.g. stress or loneliness). This made up a greater proportion of the themes in those who missed their activities.

“The Robin is my lifeline. Without it I wouldn’t be able to get to work, I wouldn’t be able to do my shopping. [...] An absolute essential for me as I’m completely isolated without transport. I don’t know what I would do if the Robin service was to stop!”