



School of Geography
and Planning

Ysgol Daearyddiaeth
a Chynllunio



RTPI

Royal Town Planning Institute

The importance of load carrying and accompanied journeys in family and leisure mobility decisions in Cardiff Capital Region

*Andrew Ivins (School of Geography and
Planning, Cardiff University)*

&

*Professor Justin Spinney (University West of
England)*



Contents

Executive summary.....	1
Background and overview of project	2
Methods	2
Key findings.....	3
Suggested impacts on policy direction	6
Onward directions for the research	7
Project Organisation	7
Research Outputs delivered.	7

1.0 Executive summary

This research explored the qualities (e.g time, cost, distance) that citizens deem important for commute mobilities, family mobilities and leisure mobilities. It explored the similarities and difference in qualities in relation to different journey purposes and social groups, and how different modes of transport meet them. In particular, the research sought to understand how important the qualities of load carrying, and accompaniment are, and whether these are adequately reflected across all transport modes.

Focus groups (n=9) and a survey of members of the public (n=244) indicated that although the established qualities of the time, cost, and distance of journeys are significant qualities of modal choice, encumbered travel (load carrying and accompaniment) and the interaction with multi-destination (trip chaining) journeys experienced particularly by parents with young children is an additional quality that links to increased car use. This effect was also present during leisure journeys for those both with and without dependent children, as accompanying friends and load carrying of sports equipment were highlighted as qualities best addressed by the car.

A practitioner workshop that took place after the focus group and survey research, considered the findings and developed responses to the key areas of 'street design', 'transport interchange design', 'vehicle design', and 'opportunities and challenges' of effecting change.

The project found that recommendations were particularly focused on bus / carriage design and configurations with a view to improving capacity and accessibility for pushchairs and wheelchairs, investment in on demand bus travel to supplement scheduled services particularly on weekends, and the adoption of e-cargo bike fleets configured with kids' seats for school drop off, pickup, and onward chaperoning activities. It is suggested that these recommendations have further impacts on bus stop design and access in the vicinity.

2.0 Background and overview of project

Contemporary efforts to reduce car use and encourage car-free living to deliver sustainable places, have focused on commuting behaviours and shifting solo travellers to active travel and public transport by responding to rational decision-making qualities such as time, cost, and distance. This research explored whether the qualities that citizens deem important for commute mobilities (time, cost, distance), differ from those deemed important for family and leisure mobilities where qualities such as convenience, flexibility, load carrying, and accompaniment might be more prominent.

2.1 Timeline

- **December 2022:** Awarded an RTPi Early Career Small Research Grant for £1750.
- **March 2023:** In depth focus groups, alongside two one-to-ones and a survey.
- **June 2023:** Workshop hosted at the RTPi Cymru Conference 2023, held in Cardiff.
- **July-August 2023:** Survey circulated.
- **September 2023:** Results presented at UK and Ireland Planning Research Conference 2023, held in Glasgow.
- **September 2023:** Practitioner workshop to consider responses to key identified areas.

2.2 Methods

A three-phase methodology was used to explore the qualities impacting modal choice:

- Focus Groups (two in depth focus groups with volunteers sampled from Cardiff University staff; n=9)
- Survey (sampled primarily from Cardiff University staff, designed to elicit qualitative responses with some descriptive statistics; n=280, reduced to n=244 due to incomplete responses)
- Practitioner workshop (designed to present findings and consider responses to identified topics)

2.3 Context

This research project was primarily focused on the Cardiff Capital Region. The region has a population of 1.5 million people and is made up of 10 neighbouring local authorities, including Cardiff itself.

During the project, national train strikes, and South Wales Metro construction work impacted on rail service delivery. This was noted in some written responses, particularly where reliability was a significant quality for the participant.

3.0 Key findings

Feelings of car dependency are most strongly felt by those who identify encumbered travel (load carrying and accompaniment) as important. This in turn limits the potential of public transport or active travel to meet their needs. The journey qualities that encumbered travel bring to the fore are most keenly felt by parents whose commuting and leisure are bookended by chaperoning activities. In leisure time, those with and without dependent children also identify increased significance of encumbered travel. Findings suggest that it is encumbered family and leisure mobilities rather than (solo) commute mobilities that present the greatest challenge to reducing car dependency.

In descriptive statistics (Figure 1) it was observed that ability to transport others ranked on average as the 4th most important quality for mobility decisions in leisure time. For the solo commuter this was ranked 11th, for the commuter with young children 9th. Load carrying experienced a similar, though less pronounced, increase.

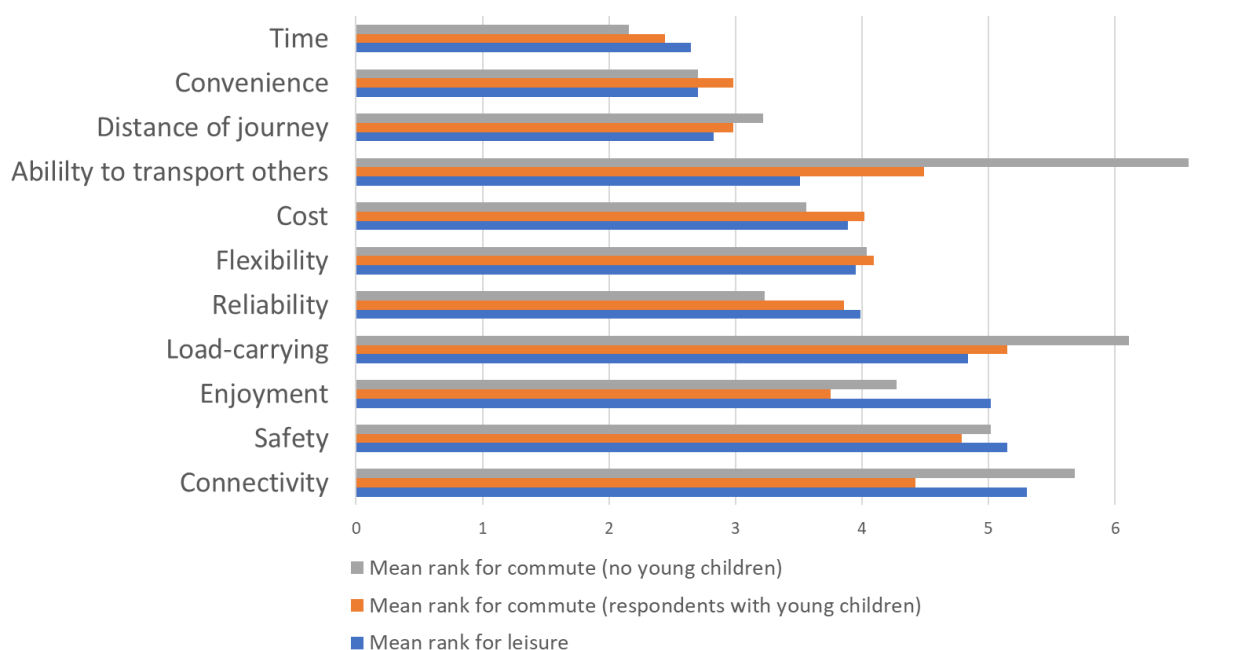


Figure 1 – Mean rank of quality by solo commuters, commuters with dependent children, and leisure travel

The reasoning applied to this increase in importance was clear in quotes from both focus groups and from qualitative responses to the survey. The following responses come from those with dependent children who primarily commute by car:

“I have a 1-year old so I need to factor in travelling with a **buggy (which can be really difficult on public transport)** plus lots of stuff depending on where we're going (change of clothes, food, toys etc.)”

“I need to be able to take my son to and from school as well as have the ease to collect him or his brother from nursery during the day if needed. As it is not just me travelling at any time any use of public transport etc. is **generally more expensive than using the car**”

“Car is the most appropriate mode of transport to get us all to nursery/ work on time. At that time of day, public transport would not be as reliable (e.g. **being unable to get a**

pushchair on the bus if its too busy), and the journey would take a lot longer which would be challenging first thing in the morning”

Disabled users raise similar concerns while further noting access in the vicinity of bus stops as an issue:

“I need to use a car because it's very difficult **to get to the bus stop with my wheelchair due to uneven pavements**, it's difficult to get on the bus, and there's **no guarantee there would be space for me**. Space is often blocked by people with prams who refuse to move despite legal requirements”

During leisure time, all user types reported an increase in the significance of transporting others and load carrying. Access to specific destinations is also a concern:

“No direct bus route and buses not regular enough for leisure centre so driving is the only real option. Distance and **ability to give lifts to others for sporting activities**”

“As **there are four of us, taking the car works out much cheaper than public transport**. Also gives us more flexibility with small children.”

“Only option for public transport is to get the bus and, again, bus is extremely infrequent (one an hour) and unreliable. There is only one bus service where we live which makes me really angry. I am very unfit and nervous and cycling so don't even consider this to be an option. The distance is too far to walk, plus **need to factor in toddler and bags.**”

“**Going to play sports requires a large amount of kit (fencing), need a car to carry load**. If with someone else (partner) I will get the bus into town. If alone, (and people don't mind if I smell) I will get the bike into town and lock it up at work. If I could not lock it up at work, I would not get a bike into town (theft).”

When shopping, load carrying confounds even committed cyclists. The car is found to be ready made for such uses:

“Too far to cycle with kids to leisure, **try to shop by bike but time and faff of trailer often makes car more attractive.**”

“Outside work, I enjoy mountain biking and ride my bike from my house to the trails/destination. **If I'm shopping, then I tend to drive my car for the load carrying ability.**”

Participants in the research sample made clear an increase in car usage when comparing the solo commuter to the commuter with dependent children, and all participants in leisure time (Figure 2).

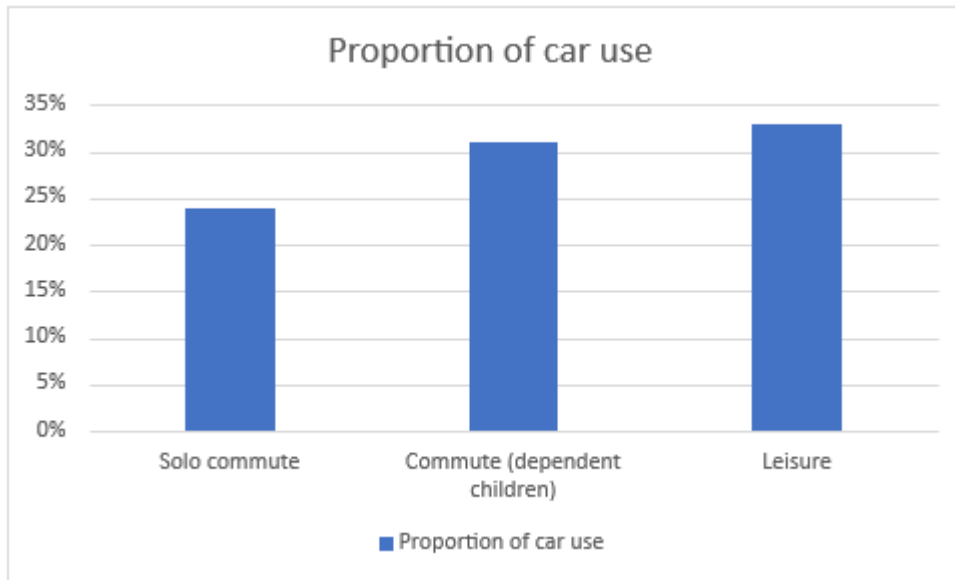


Figure 2 – car use is seen to rise in commuters with dependent children and in leisure time.

From this gathered data and analysis, the following findings were uncovered:

- **Encumbrance significantly impacts modal choice and travel behaviour.** While exploratory in intention, this research uncovers the quality of encumbrance (load carrying and accompaniment) as a significant mobility quality.
- **Multiple destination travel (trip chaining) interacts with encumbrance.** Notably, parents with dependent children identify and justify increased car use when compared with solo travellers.
- **Qualities of load carrying and chaperoning present for all respondents with respect to leisure journeys.** In leisure and social reproductive journeys, increased car use is observed for all respondents as solo travellers undertake activities which require load carrying or transporting others (friends, family etc.)
- **Encumbrance interacts with other qualities such as time, cost, and distance of journey.** According to our data, it has greater influence than safety and connectivity (although it also interacts with these).
- **Encumbered travel is consistently benchmarked against the car.** The data suggests that dealing with encumbrance in isolation is not useful. E.g., Adding more pushchair space to a bus route serviced by 30-minute frequencies remains time poor vs the car.
- **This research takes place against a backdrop where parenting and leisure practices that are increasingly 'stuff' intensive is normalised:** Parents, carers and those involved in a range of leisure practices (from dog walking to cycling; rock climbing to golf) favour modes that can easily accommodate stuff and passengers. This 'social acceleration' and 'practice intensification' has implications for modal choice, resulting in increased car use.

4.0 Suggested impacts on policy direction

In responding to the findings, a practitioner workshop identified three key areas in which action may be focused; interchange and stop design, vehicle design, and wider modal shift related policy. Within each category, suggestions for the focus of practice are made.

Interchange / stop design:

- Connectivity and integration of modes at key transport nodes
- Accessible walking and cycle routes to interchanges
- Pushchair and wheelchair accessibility improvements at stops, e.g. fewer kerbs in vicinity
- Increased secure bicycle parking and e-bike charging

Vehicle design:

- Increased pushchair and wheelchair capacity alongside step free access
- Increase in double decker bus fleet with ground floor space reserved for pushchair and wheelchair use
- Bike carriages on trains
- Increased storage space on public transport

Modal shift opportunities:

- Cargo bike fleets adapted with kids' seats and cargo for school, chaperoning, and loads
- Reduced prices on public transport, particularly for those under-23 and group travel
- On demand bus investment to supplement scheduled services, particularly at weekends

Suggestions for potential policy directions:

Congestion charging - with a view to specific proposals such as congestion charging, it is important to consider that this will privilege solo commuters and disadvantage encumbered, multi-destination travellers (such as parents with young children), as well as those of limited mobility (e.g. wheelchair users). Mitigations are recommended, such as park and ride facilities with frequent public transport provision; subsidised shared E-cargo bikes. Park and ride bus provision should be adapted with space for multiple wheelchair and pushchair users.

5.0 Onward directions for the research

Discussions with Sustrans regarding potential collaborative research on e-bike use in cities / rural areas – initial discussions in December 2023

Investigating longitudinal research as part of Cardiff University and Transport for Wales & South Wales Metro collaboration – initial discussions in January 2024

Academic research paper(s) linking findings to the concepts of ‘capabilities’, ‘social acceleration’, and ‘practice intensification’ – submission for review in Autumn 2024

6.0 Project organisation

6.1 Academic Staff

Principal investigator: Andrew Ivins (lvinsA1@cardiff.ac.uk)

Co-investigator: Professor Justin Spinney (Justin.Spinney@uwe.ac.uk)

6.2 Funder details

RTPI (Royal Town Planning Institute): <https://www.rtpi.org.uk/>

Amount: £1750

7.0 Research outputs delivered

The project has delivered three event outputs in addition to this report, with a research paper planned for journal submission in Autumn 2024.

- 'Families, free-time, and car dependency: identifying the qualities of family and leisure mobility decisions', workshop delivered at the **RTPI Cymru Wales Planning Conference 2023, 22 June 2023, Cardiff, UK**
- 'The importance of load carrying and accompanied journeys in family and leisure mobility decisions: implications for transport planning and vehicle design', presented at the **UK and Ireland Planning Research Conference 2023, 04-06 September 2023, Glasgow, UK**
- 'Driven to care: exploring the roles of social acceleration, practices, and forms of care in car dependence', presented at the **Centre for Transport and Society Symposium 2024, 18 July 2024, University West of England (UWE), Bristol, UK**
- 'The importance of load carrying and accompanied journeys in family and leisure mobility decisions in Cardiff Capital Region', **research report, August 2024**