Where to park? A behavioural comparison of bus-based Park and Ride and city centre car park usage in Bath, UK

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Park and Ride

– Park and Ride (P&R) is a broad term for intermodal transfer sites between private car and public transport – usually peripheral to urban areas
  – Typically bus or train: in UK term mainly synonymous with bus-based P&R

– Benefits of P&R relate to reduction of traffic in urban centres, addressing issues such as:
  – capacity limitation
  – congestion
  – air pollution

– Enduring positive image with policymakers; however, more recent empirical studies have challenged the assumed benefits of P&R schemes
  – Simply displace traffic issues, rather than solving them
  – Generate more car trips through increasing accessibility of urban centres
  – Encourage greater car use through ‘abstraction’ from traditional public transport (P&R users are drivers too!)
Parking

– Local parking policy one of the key factors influencing travellers’ mode choice for journeys to urban centres

– Parking policy is a tool to strengthen the vitality of urban centres in the face of competition

– Increased capacity and reduced price is therefore promoted despite negative implications for traffic

– Tension between competing goals for ‘urban vitality’?
  – Vitality through commerce
  – Vitality through pleasant urban environment
Aims

– Explore spatial distribution of Park and Ride user and city-centre car park user origins

– Understand who is using Park and Ride and who is using city-centre car parks

– Looking for patterns and relationships which might help explain why different individuals or groups of drivers access central Bath in the ways that they do
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- Vitality through commerce
- Vitality through pleasant urban environment
Methodology

- **Park and Ride users:**
  - Face-to-face survey on buses making both inbound and outbound journeys to all three P&R sites in Bath. Surveys conducted 09:30-18:00 Monday-Saturday.

- **City centre car park users:**
  - Face-to-face on-street surveys conducted with visitors to all major public car parks in central Bath. Surveys conducted 09:30-18:00 Monday-Saturday.

- Sample size (n = 1285):
  - Park and ride users: n = 721
  - Car park users: n = 564

- Not all cases included (1723 responses collected: 75% included)
  - Only complete postcodes (86% complete)
  - Only postcode areas: BA – BS – GL – SN – TA (91% of total)
  - Park and Ride maps and statistics only represent car access (driver or passenger – 90% of valid participants)
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What predicts P&R or car park use?

– **Accessibility of Park and Ride** – those who live on routes into Bath not served by Park and Ride are more likely to drive into the city centre

– **Gender** – Women more likely to use Park and Ride, outside of Bath

– **Age** – Those aged 60 and above are more likely to use Park and Ride

– **Income** – Those travelling from highest income areas are more likely to drive in to the city centre

– **Party size** – Those travelling in groups are more likely to drive in to the city centre

– **Frequency** – Those travelling into Bath in the middle frequency range (a few times a month) are more likely to use Park and Ride
n = 1281
p < 0.05
n = 1282
p < 0.05
UK median: £359 p/w (£1556 p/m)

n = 1126
p < 0.05
n = 1275
p < 0.05
Overview

Frequency of trips into central Bath

Percent

- More than twice a week
- More than once a week
- Rarely/first visit
- Missing

Park and Ride or car park user

- Park and Ride
- Car park (origin outside 2 mile radius)
- Car park (origin within 2 mile radius)

n = 1285

p < 0.05
In summary…

- **Park and Ride users:**
  - Predominantly older individuals
  - Higher proportions of women than men
  - Highest proportions travelling for the purposes of shopping and personal business [possible bias in sampling times]
  - Majority travelling from surrounding areas, particularly Bristol, Keynsham/Saltford, and Midsomer Norton/Paulton/Radstock
  - Majority in the middle income range
  - P and R is not especially attractive to larger groups
In summary…

– **City-centre car park users:**

  – Split by point of origin – significant differences between those who live within 2 miles of central Bath and those who live outside 2 miles of the city centre

  – High proportion of car park users driving short distances (~30%) and making regular trips (54%)

  – Even split of gender, however more women making short trips than men

  – In general car park users travelling from middle-higher household income bracket areas, with the majority of those travelling from within 2 miles of the city centre travelling from highest income bracket areas (36%)

  – Knowledge of Park and Ride is good
What would drivers do if P&R or city centre car parking spaces weren’t available?
Type of mode participants would use if not driving

- Active travel (foot, bike)
- PT (P & R, local bus, train)
- Other motorised (liftshare, motorbike)
- Would/could not have travelled

Participants' postcode within 2 mile radius of central Bath

Percent

No

- 64.57%
- 3.27%
- 2.01%

Yes

- 30.15%
- 53.50%
- 3.82%
- 12.74%

n = 555
p < 0.05
Summary, conclusions, and questions

– Potential for walking and cycling to replace a significant proportion of short car journeys; however, hilly topography and affluent population create specific challenges
– Is an eastern site advisable?
  – Many P&R users report they would drive in to city if no P&R, so eastern site could capture some drivers…
  – However –
  – P&R could further cement car dependence in this sector
  – There may only be a marginal benefit because of the low overall demand
  – Other types of scheme might be more appropriate (L&R, etc…)

– Issues of equity with P&R?
  – P&R provides free parking and subsidised bus travel to drivers, whilst those without a car must pay the full fares on local bus services
  – People with a concessionary pass receiving a ‘double incentive’ to reduce their sustainability?
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Thank you!

Any questions/comments?