Promoting Sustainable Travel

School of Geography
Agenda

10:45  Tea and Coffee
11:15  Welcome, introductions and brief overview of project to date (Stewart Barr)
11:30  Overview of focus group research and findings, to include questions (Jan Prillwitz)
12:00  Overview of the survey instrument (Stewart Barr)
12:15  Results of the survey and discussion (Jan Prillwitz)
13:15  Lunch and networking
14:00  Next stage: policy-focused research (Stewart Barr)
14:15  Discussion of key research questions for next stage of research
15:00  Tea, coffee, further discussion and close
Role of the Panel

• ESRC funding rules and evaluation;
• Academic objectives;
• Policy objectives;
• Importance of expert engagement and partnership;
• Dissemination and change.
Research Programme


DEFRA Sustainable Lifestyles (2005-06) → British Academy Low-cost Airlines (from 2007)

ESRC Promoting Sustainable Travel: a social marketing approach (from 2008)

The research team’s have involved or currently comprise Prof. Andrew Gilg, Prof. Gareth Shaw, Dr. Tim Coles, Dr. Nick Ford and Jan Prillwitz
Bases for the research

• Three main challenges for academics and practitioners:
  – The ‘value-action’ gap (and A-I-D-A);
  – The complexity of environmental behaviour;
  – The role of ‘lifestyles’ and targeting specific groups.
Initial questions

• What influences peoples’ intentions to act and how does this translate into behaviour?
• How do these factors change for different types of behaviours?
• Is it possible to identify people with similar behaviours and to target policies accordingly?
Conceptual Framework

- Situational & structural characteristics
  - Social & environmental values
  - Psychological factors

  Behavioural intention

  Behaviour
Main conclusions so far

• The complexity of environmentally responsible (or ‘sustainable’) behaviours:
  – In context (home, work, at leisure, on holiday);
  – In time (life-cycle);
• The question of ‘spill-over’ between behaviours;
• The role of different factors for different behaviours (e.g. social pressure);
• The role of ‘lifestyle’ groups for different behaviours and contexts;
• How can we engage with these individuals’ lifestyle aspirations and their barriers to action?
Promoting Sustainable Travel

• Using these approaches to explore sustainable lifestyles and travel behaviour;
• Alongside the academic goals, the research aims to contribute to an evidence base for local practitioners and policy makers to understand motivations and target policies.
Research Objectives

• First, to **identify and measure** a series of 'sustainable travel behaviours' using a sample of individuals from the general public;

• Second, to explore the empirical and conceptual links between **different types of sustainable travel practices** amongst the sample;

• Third, to use segmentation analysis to **identify a series of lifestyle groups** based on these behavioural data;

• Fourth, to use an established framework of environmental behaviour to **identify the motivators and barriers** for adopting different forms of behaviour according to lifestyle group;

• Fifth, to use the results from objectives 1-4 to **assist local and national policy makers in promoting sustainable lifestyle practices through social marketing techniques**.
Methods

• Based on five study areas to explore role of location and built environment:
  – High-density (Polsloe Ward);
  – Suburban (Pennsylvania Ward);
  – Contemporary mixed-use (St. Loyes Ward);
  – Small commuter centre (Cullompton North Ward);
  – Rural centre (Lawrence Ward, Crediton).

• Ten FGD’s to discuss travel practices and motivations and barriers for action;

• 2000 questionnaires, 400 in each study location, to quantify these issues and as the basis for segmentation;
Methods

• **Second stakeholder panel** to discuss results and plan for…

• Five FGD’s to discuss options for behaviour change, with a mix of respondents from the main survey;

• **Third stakeholder panel** for policy recommendations and dissemination.
Progress

- Ten focus groups: completed August 2008;
- Survey of 2000 households: completed with 1500+ returns in March 2009;
- Data analysis: April – August 2009;
- Focus groups & interviews: September 2009;
Press Releases

Research asks how we travel

A new study is aiming to help一杯 promoting a sustainable travel attitude, which may help to reduce carbon emissions. The study will involve people in the community during the next 12 months, and the results will be shared with the wider public.

Exploring attitudes towards travelling

Thousands quizzed on their transport habits

A recent survey has found that a significant number of people are concerned about the environment and are willing to change their travel habits. The survey also highlighted the importance of promoting alternative modes of transport.

Coverage is protected under license from the NLA. CLA or other copyright owner. No further copying including the printing on digital devices, illegal reproduction or forwarding is permitted unless written licence is obtained from the NLA. http://www.nla.co.uk for newspapers, CLA.http://www.cla.co.uk for books & magazines or other copyright owner.
Travel poll participants win train tickets

People from Exeter, Cullompton and Crediton were among 300 to take part in a university survey aimed at reshaping the transport habits of locals.

Researchers at the University of Exeter are now analysing the results from the survey, which will help them understand how people in Exeter travel and what influences their choices.

Lead researcher Dr Stewart Barr said: "We are really grateful to all of the people who took part in this study. As vehicles become more expensive and many of us are concerned about the environmental impacts of our cars, we should be using greener modes of transport, but is it really that straightforward?"

"What really motivates us to choose to drive, cycle or take the train? And can policies be put in place to change their habits? We hope this study will help us find out."

Five people won train ticket prizes as a result of taking part in the survey — they are: two first prizes of a first class open return rail ticket from Exeter to London, won by T.D. Graham of Cullompton and M.J. Bailey of Exeter. Three second prizes, standard day return rail tickets from Exeter to London, were won by Martin Sapirov of Crediton, Peter Savage of Crediton and Jacky Pratt of Cullompton.

The University of Exeter is working with Devon County Council, Exeter City Council and other local authorities to understand people's travel habits in Exeter. This two-year study, which is funded by the Economic and Social Research Council, aims to get to the heart of the factors that drive people's decisions on how to travel.

Their findings will help to make the organisations that are responsible for commuter travel and campaigning on travel issues better informed about the issues that people face when deciding how to travel.
Sample Locations – Wards

• Polsloe Ward, Exeter – high-density area
• Pennsylvania Ward, Exeter – suburban area
• St. Loye’s Ward, Exeter – contemporary mixed-use area
• North Ward, Cullompton – small commuter centre
• Lawrence Ward, Crediton – rural centre
# FG Results – Participants

<table>
<thead>
<tr>
<th>Ward</th>
<th>Number of Participants</th>
<th>Gender</th>
<th>Age Cohort (in years)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>&lt; 18</td>
<td>18 to 45</td>
<td>46 to 65</td>
<td>&gt; 65</td>
<td></td>
</tr>
<tr>
<td>Exeter, Polsloe</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Exeter, Pennsylvania</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Exeter, St. Loyes</td>
<td>12</td>
<td>5</td>
<td>0</td>
<td>11</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Cullompton, North</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Crediton, Lawrence</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td><strong>35</strong></td>
<td><strong>1</strong></td>
<td><strong>34</strong></td>
<td><strong>22</strong></td>
<td><strong>14</strong></td>
<td></td>
</tr>
</tbody>
</table>
FG Results – Lifestyles

- 71 focus group participants (36 female, 35 male)
- Sustainable behaviour at home – four lifestyle groups: committed, mainstream, occasional and non-environmentalists
- Majority of mainstream environmentalists
- Some occasional, few committed and no non-environmentalists
- Agreement on necessity for sustainable behaviour
- Influences from attitudes and perception, some financial and convenience aspects
FG Results – Daily Travel

“My car is essential for my job … I tend to use the car most of the time but I try and walk if I can but usually time doesn’t allow us to walk … because I’m always running late.” (female, 35)

“I cycle everywhere really and years ago I made a decision not to use a car again, about fifteen years ago, and so far I haven’t.” (male, 49)
FG Results – Daily Travel

• Car – dominant travel mode, but often combined with other means of transport (mainly walking)
• Some mainly car-dependent and some non-car users
• Main determinants – financial issues, convenience
• Knowledge of sustainability problems, but only some influence from sustainable attitudes
• Public transport – bad reputation (expensive, unreliable, inconvenient)
• Reasons for car-free mobility styles: sustainability attitudes, financial considerations, personal limitations
FG Results – Holiday Travel

“It’s just fun, you get nice places. I went to Morocco at Christmas, I went to the South of France last summer, I’m going to the south of France again, yeah going to Lanzarote at Christmas.” (male, 25)

“And now, all of a sudden, flights are so cheap! ... It’s actually cheaper for me to get that flight, go to Poland, spend a week there than to go to Cornwall, to Newquay or to visit friends in Edinburgh!” (female, 22)
FG Results – Holiday Travel

• Dominant mode – plane, some combinations with car and public transport
• Only very few avoid flying for sustainability reasons
• Main determinants – flexibility, availability, convenience, price
• Justification of own unsustainable behaviour:
  → Relativise and neglect own attitudes
  → Adopt general hedonistic and fatalistic attitude
  → Balance with own behaviour in other areas
• No acceptance of interventions, “last piece of freedom”
FG Results – Holiday Travel

“That’s not going to work, is it! That’s like it’s too much dictatorial … I think, anyway.” [influencing people's holiday choices] (male, 35)

“Holidays are holidays, you know … although it’s a catch 22 because flying is the worst form of, you know, pollution that there is. But, it’s also the thing that you’ve looked forward to most of the year and you don’t really get to do that often. So, it’s quite hard.” (male, 35)
FG Results – Holiday Travel

“Like I said I think it’s beyond repair and until something happens I’m going to carry on enjoying myself and why not, there’s nothing I can do to stop this so I’m just going to fly and drive until, ...” (male, 25)

“We are in a rather difficult position. Our daughter and granddaughter live in New Zealand and it’s a little bit more difficult. ... But we always take the train to get to the airport ...” (male, 67)
“… I called myself formally environmental … but from Bournemouth airport, they do these flights for basically free to Glasgow Prestwick. I think the maximum my family has ever paid is £30 for a ticket but more often you can find them for £10, £5…I think my sister has come down for £0.99 a couple of times with the kids. That is just convenience … it’s just an hour and then 4 hours by bus. It cuts out sort of a 17 hour bus journey.”

(male, 35)
FG Results – Links and Gaps

- Most participants – gap between sustainable lifestyles / behaviour at home and travel decisions
- Some links (often limited to travel) – not sustainable attitudes, but convenience and financial issues
- Few cases – influence from environmental attitudes on three domains of individual life
  → Committed, mainstream and occasional environmentalists
FG Results – Motives and Barriers

“I’d much rather have the extra hour in bed then get up an hour earlier and get the bus..” (female, 20)

“... if busses were cheaper I would quite happily take the bus if I could save a lot of money and travel by public transport I would just so I could spend more money on beer and stuff.” (male, 25)
FG Results – Motives and Barriers

• Convenience car / inconvenience other modes (public transport, bike) as main reasons for “unsustainable” travel choices
• Costs / financial aspects as motivation and barrier
• Awareness of problematic “Western lifestyles” and necessary, but not accepted strategies of “taking a step back”
• Holiday travel behaviour as highly resistant
FG Results – Conclusions

• Links between individual behavioural domains often limited to convenience and financial considerations
• Few cases with attitudinal influence on all three areas → Not only most sustainable lifestyles
• Daily travel – convenience car / inconvenience other modes main barrier for behavioural shifts, also perceived financial aspects
• Holiday travel – no links to attitudinal factors, attitudes often neglected and relativised, strategies of “justifying”, no acceptance of interventions, “last piece of freedom”
Future Links?

“If you had to give up driving to save the fuel for the aeroplanes would you? Because at some point that choice is going to come isn’t it? At some point you will have to stop driving to save fuel for the aeroplanes.” (male, 50)
The Survey Instrument
Key findings from the Stakeholder Panel and Focus Groups: behaviour

• Different forms of travel: daily / work, short break, holiday.

• General establishment of habits - circumstances, life histories, social networks (family, social and educational background);

• Travel at work as an important factor, also work place parking conditions;

• Multi-purpose trips;

• Role of convenience - creation of habits and barriers for behavioural changes;

• Personal resources to ‘invest’ in sustainable travel.
Key findings from the Stakeholder Panel and Focus Groups: influences

• Role of information – (e.g. knowledge of travel alternatives like existence of car-clubs, initiatives like Travel Smart, tourism – carbon offsetting schemes);

• Difference between perceived and actual reality - different perceptions depending on the journey types (e.g. conditions for use of alternative modes, perceived vs. actual costs relative car use costs);

• Difference between aspired and actual behaviour;

• Links between domestic and travel behaviours: mobility styles and lifestyles.
Key findings from the Stakeholder Panel and Focus Groups: policy

• What constitutes ‘sustainable’ travel?

• Attitudes towards different forms of transport and their management;

• ‘Mobility changing’ life events (e.g. moving house, having children);

• Attitudes towards different measures (e.g. tax policy, congestion charging, parking pricing, free or reduced fare bus travel for certain groups) and their potential to break habits.
Survey Structure

• Travel behaviour;
• Environmental attitudes;
• Travel information;
• Transport policy;
• Changes to travel behaviour;
• Respondent and household data.
Survey Results – General

• 75% response rate
• Comprehensive questionnaire – daily travel, holiday travel, environmentally friendly behaviour at home, attitudes, socio-demographic characteristics
• Possible segmentation approaches – location (ward), travel behaviour (daily, holiday), attitudes
• Cluster analyses and Chi-square tests to identify significant differences
Survey Results – Segmentation

- Location → Five areas, different spatial structure
- Daily travel → Mode choice for 7 different travel purposes
- Holiday travel → Mode choice to and at the destination (short- and long-stay)
- Attitudes → Set of questions – attitudes towards public transport, car, walking / cycling, holiday travel, general values and attitudes towards the environment
  → Two-step segmentation approach (Anable 2005): factor analysis + cluster analysis
Survey Results – Location

• Some differences in socio-demographic (age, household size), housing characteristics (type of house) and political attitudes (voting)
• Also variations in daily travel patterns:
  → High-density area – more walking and cycling
  → Suburban area – more public transport use
  → Urban and suburban ward within city boundaries – lower levels of car use
• Only small (short stay) or no differences (long stay) in holiday travel
Survey Results – Location

Household Size

Number of persons in house

Percentage of ward sample

Pennsylvania, Exeter
Polsloe, Exeter
St. Loyes, Exeter
Cullompton North
Lawrence, Crediton
Survey Results – Location

Type Of Home

- Detached
- Link detached
- Semi-detached
- Terrace (with passage)
- Terrace (no passage)
- Purpose-built flat
- Flat in older property
- Other

Percentage of ward sample

- Pennsylvania, Exeter
- Polsloe, Exeter
- St. Loyes, Exeter
- Cullompton North
- Lawrence, Crediton
Survey Results – Location

Political Views

Party that would be voted for

Percentage of ward sample

Conservatives | Labour | Liberal Democrats | Greens | Other | Would not vote
Pennsylvania, Exeter | Polsloe, Exeter | St. Loyes, Exeter | Cullompton North | Lawrence, Crediton
Survey Results – Location

Main Travel Mode - Getting To Work

- **Car / Motorbike**: The highest percentage, with various wards differing in percentage.
- **Public Transport**: Smaller percentage compared to car/motorbike, with some notable use in certain wards.
- **Bicycle**: Low percentage across all wards.
- **Walk**: Moderate percentage, with variations among wards.

Wards included in the survey:
- Pennsylvania, Exeter
- Polsloe, Exeter
- St. Loyes, Exeter
- Cullompton North
- Lawrence, Credton
Survey Results – Location

Car Use Level

Percentage of travel purposes with car use

Percentage of ward sample

Pennsylvania, Exeter
Polsloe, Exeter
St. Loyes, Exeter
Cullompton North
Lawrence, Crediton
Survey Results – Location

Number of Cars (Owned / Access to) in Household

- Pennsylvania, Exeter
- Polsloe, Exeter
- St. Loyes, Exeter
- Cullompton North
- Lawrence, Crediton

Percentage of ward sample vs. number of cars.

- 0 cars: 50% (Polsloe, Exeter), 40% (St. Loyes, Exeter), 30% (Cullompton North), 20% (Lawrence, Crediton)
- 1 car: 50% (Pennsylvania, Exeter), 40% (St. Loyes, Exeter), 30% (Cullompton North), 20% (Lawrence, Crediton)
- 2 cars: 50% (Pennsylvania, Exeter), 40% (St. Loyes, Exeter), 30% (Cullompton North), 20% (Lawrence, Crediton)
- 3 cars: 50% (Pennsylvania, Exeter), 40% (St. Loyes, Exeter), 30% (Cullompton North), 20% (Lawrence, Crediton)
- 4 or more cars: 50% (Pennsylvania, Exeter), 40% (St. Loyes, Exeter), 30% (Cullompton North), 20% (Lawrence, Crediton)
Survey Results – Location

Main Travel Mode To Holiday Destination (1 to 3 nights)

- Air
- Car / Motorbike
- Bus / Coach
- Train
- Other

Specific travel modes for different locations:
Survey Results – Holiday Travel

• Both categories (long stay, short stay) – only two clusters
• Main criterion – mode choice to and at the destination:
  → Committed car users
  → Public transport users (mixed mode choice)
• Only limited practicability for sustainable travel behaviour measures
Survey Results – Holiday Travel

Long Stay Holiday Travel - Cluster 1

- To the destination
- Whilst away

Short Stay Holiday Travel - Cluster 1

- To the destination
- Whilst away

Long Stay Holiday Travel - Cluster 2

- To the destination
- Whilst away

Short Stay Holiday Travel - Cluster 2

- To the destination
- Whilst away
Survey Results – Daily Travel

- Four clusters:
  - Constrained public transport users (cluster 1)
  - Committed green travellers (cluster 2)
  - Semi-conscious car users (cluster 3)
  - Committed car users (cluster 4)
- Differences by location – clusters 1 and 2 in city wards, clusters 3 and 4 in rural / commuter centres
- Cluster 2 – walk and cycle more, young professionals, vote Green, most likely to fly to holiday destinations
- Cluster 4 – car use, middle aged, vote Conservative
Survey Results – Daily Travel

Cluster 1: Constrained public transport users
Cluster 2: Committed green travellers
Cluster 3: Semi-conscious car users
Cluster 4: Committed car users
Survey Results – Daily Travel

Age by Daily Travel Cluster Groups

Cluster 1: Constrained public transport users
Cluster 2: Committed green travellers
Cluster 3: Semi-conscious car users
Cluster 4: Committed car users
Survey Results – Daily Travel

Income by Travel Cluster Groups

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below £5,000</td>
<td>4.0%</td>
<td>3.0%</td>
<td>2.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>£5,001 - £10,000</td>
<td>8.0%</td>
<td>6.0%</td>
<td>4.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>£10,001 - £12,500</td>
<td>6.0%</td>
<td>4.0%</td>
<td>3.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>£12,501 - £15,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>£15,001 - £17,500</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>£17,501 - £20,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>£20,001 - £25,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>£25,001 - £30,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>£30,001 - £35,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>£35,001 - £40,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Over £40,000</td>
<td>4.0%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Cluster 1: Constrained public transport users
Cluster 2: Committed green travellers
Cluster 3: Semi-conscious car users
Cluster 4: Committed car users
Survey Results – Daily Travel

Cluster 1: Constrained public transport users
Cluster 2: Committed green travellers
Cluster 3: Semi-conscious car users
Cluster 4: Committed car users
Survey Results – Daily Travel

Cluster 1: Constrained public transport users
Cluster 2: Committed green travellers
Cluster 3: Semi-conscious car users
Cluster 4: Committed car users
Cluster 1: Constrained public transport users
Cluster 2: Committed green travellers
Cluster 3: Semi-conscious car users
Cluster 4: Committed car users
Survey Results – Attitudes

• Two-step segmentation approach
  → Factor analysis of attitudinal questions (towards modes of transport and the environment, and general values)

• Result first step – factor analysis
  → 14 attitudinal factors
<table>
<thead>
<tr>
<th>Factor</th>
<th>Item with highest loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive public transport attitudes</td>
<td>Using public transport is a satisfying experience</td>
</tr>
<tr>
<td>Measures – support for regulation</td>
<td>Increasing fuel charges to cut car use</td>
</tr>
<tr>
<td>Walling and cycling attitudes</td>
<td>Walking and / or cycling is convenient</td>
</tr>
<tr>
<td>Environmental benefits of sustainable travel</td>
<td>Walking and / or cycling helps to tackle issues like climate change</td>
</tr>
<tr>
<td>Benefits of car use</td>
<td>Using a car is convenient</td>
</tr>
<tr>
<td>Positive holiday environmental attitudes</td>
<td>I don’t worry about the environment when I make choice about my holiday travel*</td>
</tr>
<tr>
<td>Ecocentric values</td>
<td>The Earth is like a spaceship, with limited room and resources</td>
</tr>
<tr>
<td>Moral obligations and responsibility</td>
<td>I feel morally obliged to walk or cycle</td>
</tr>
<tr>
<td>Measures – support for incentives</td>
<td>Financial incentives to use public transport</td>
</tr>
<tr>
<td>Technocentric values**</td>
<td>There are no limits to growth for countries like Britain</td>
</tr>
<tr>
<td>Pro-car attitudes</td>
<td>Car driving is affordable and good value</td>
</tr>
<tr>
<td>Holiday and pro-travel attitudes</td>
<td>‘Low cost’ airlines have provided people with better opportunities to travel regularly</td>
</tr>
<tr>
<td>Support of public transport on holiday</td>
<td>I try to avoid using public transport when I am on holiday*</td>
</tr>
<tr>
<td>Influence of social norms</td>
<td>Most of my friends and relatives use public transport regularly</td>
</tr>
</tbody>
</table>

* Some items in this scale were recoded to provide a ‘pro-environmental’ direction in the data and to provide more consistency for further analyses. However, not all scales are pro-environmental and were not altered if they were internally consistent.
** This scale has been re-coded so that higher scores indicate a pro-environmental position.
Survey Results – Attitudes

• Second step – cluster analysis → four clusters:
  → Conscious car users (cluster 1)
  → Committed car users (cluster 2)
  → Constrained public transport users (cluster 3)
  → Committed green travellers (cluster 4)
• Socio-demographic and –economic differences less significant, only spatial distribution and political views
• Clear links to daily travel patterns
Survey Results – Attitudes

Cluster 1: Conscious car users
Cluster 2: Committed car users
Cluster 3: Constrained public transport users
Cluster 4: Committed green travellers
Survey Results – Attitudes

Cluster 1: Conscious car users
Cluster 2: Committed car users
Cluster 3: Constrained public transport users
Cluster 4: Committed green travellers
Survey Results – Attitudes

Attitudinal Clusters - Main Travel Mode - Getting to Work

Cluster 1: Conscious car users
Cluster 2: Committed car users
Cluster 3: Constrained public transport users
Cluster 4: Committed green travellers
Survey Results – Attitudes

Cluster 1: Conscious car users
Cluster 2: Committed car users
Cluster 3: Constrained public transport users
Cluster 4: Committed green travellers
Survey Results – Attitudes

Cluster 1: Conscious car users
Cluster 2: Committed car users
Cluster 3: Constrained public transport users
Cluster 4: Committed green travellers
## Survey Results – Attitudes

### Attitudinal Factors by Cluster

<table>
<thead>
<tr>
<th>Factor name</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
<th>Kruskal-Wallis test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive public transport attitudes</td>
<td>27.11</td>
<td>23.05</td>
<td>32.82</td>
<td>32.80</td>
<td>271.7**</td>
</tr>
<tr>
<td>Measures – support for regulation</td>
<td>18.83</td>
<td>12.85</td>
<td>17.93</td>
<td>24.55</td>
<td>453.8**</td>
</tr>
<tr>
<td>Walling and cycling attitudes</td>
<td>33.07</td>
<td>29.95</td>
<td>33.69</td>
<td>37.62</td>
<td>208.2**</td>
</tr>
<tr>
<td>Environmental benefits of sustainable travel</td>
<td>31.23</td>
<td>25.54</td>
<td>28.39</td>
<td>35.59</td>
<td>467.6**</td>
</tr>
<tr>
<td>Benefits of car use</td>
<td>24.74</td>
<td>26.90</td>
<td>22.99</td>
<td>22.61</td>
<td>234.8**</td>
</tr>
<tr>
<td>Positive holiday environmental attitudes</td>
<td>18.04</td>
<td>14.90</td>
<td>17.90</td>
<td>23.50</td>
<td>403.7**</td>
</tr>
<tr>
<td>Ecocentric values</td>
<td>20.07</td>
<td>17.78</td>
<td>18.11</td>
<td>22.25</td>
<td>202.4**</td>
</tr>
<tr>
<td>Moral obligations and responsibility</td>
<td>11.22</td>
<td>8.64</td>
<td>12.06</td>
<td>14.80</td>
<td>355.7**</td>
</tr>
<tr>
<td>Measures – support for incentives</td>
<td>19.81</td>
<td>16.84</td>
<td>18.01</td>
<td>22.23</td>
<td>331.1**</td>
</tr>
<tr>
<td>Technocentric values*</td>
<td>10.79</td>
<td>9.20</td>
<td>9.00</td>
<td>11.60</td>
<td>243.2**</td>
</tr>
<tr>
<td>Pro-car attitudes</td>
<td>11.77</td>
<td>13.97</td>
<td>12.34</td>
<td>9.66</td>
<td>255.8**</td>
</tr>
<tr>
<td>Holiday and pro-travel attitudes</td>
<td>14.73</td>
<td>15.49</td>
<td>14.19</td>
<td>13.29</td>
<td>101.9**</td>
</tr>
<tr>
<td>Support of public transport on holiday</td>
<td>6.72</td>
<td>6.19</td>
<td>6.88</td>
<td>8.04</td>
<td>121.8**</td>
</tr>
<tr>
<td>Influence of social norms</td>
<td>6.65</td>
<td>5.95</td>
<td>9.21</td>
<td>7.47</td>
<td>304.1**</td>
</tr>
</tbody>
</table>

*All factor scores indicate agreement with the factor name, except for *

* This factor was recoded so that a higher score indicates a pro-environmental viewpoint

** p < 0.05
## Survey Results – Attitudes

### Knowledge of Measures by Cluster

<table>
<thead>
<tr>
<th>Item / % aware of sources (within each cluster)</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel Smart</td>
<td>9.5</td>
<td>7.0</td>
<td>17.0</td>
<td>13.3</td>
</tr>
<tr>
<td>Car Share Devon</td>
<td>89.5</td>
<td>87.7</td>
<td>77.0</td>
<td>85.8</td>
</tr>
<tr>
<td>Car Clubs</td>
<td>18.7</td>
<td>11.2</td>
<td>15.6</td>
<td>25.7</td>
</tr>
<tr>
<td>Cycle to work schemes</td>
<td>48.5</td>
<td>35.0</td>
<td>39.3</td>
<td>54.0</td>
</tr>
<tr>
<td>Cycle Exeter</td>
<td>43.5</td>
<td>35.8</td>
<td>55.6</td>
<td>57.5</td>
</tr>
<tr>
<td>Carbon offsetting</td>
<td>22.5</td>
<td>10.2</td>
<td>11.9</td>
<td>36.3</td>
</tr>
<tr>
<td>Carbon Calculator</td>
<td>13.0</td>
<td>5.0</td>
<td>9.6</td>
<td>22.1</td>
</tr>
<tr>
<td>Other</td>
<td>1.9</td>
<td>0.8</td>
<td>0.0</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Cluster 1: Conscious car users  
Cluster 2: Committed car users  
Cluster 3: Constrained public transport users  
Cluster 4: Committed green travellers
Survey Results – Attitudes

Attitudinal Clusters - Environmentally Friendly Behaviour At Home

Cluster 1: Conscious car users
Cluster 2: Committed car users
Cluster 3: Constrained public transport users
Cluster 4: Committed green travellers
## Survey Results – Attitudes

### Pro-Environmental Behaviour by Cluster

Cluster 1: Conscious car users  
Cluster 2: Committed car users  
Cluster 3: Constrained public transport users  
Cluster 4: Committed green travellers

<table>
<thead>
<tr>
<th>Item / factor:</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
<th>Kruskal-Wallis test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of recycling household waste</td>
<td>4.84</td>
<td>4.78</td>
<td>4.65</td>
<td>4.94</td>
<td>22.2**</td>
</tr>
<tr>
<td>Frequency of saving energy in the home by turning lights off etc.</td>
<td>4.53</td>
<td>4.47</td>
<td>4.33</td>
<td>4.71</td>
<td>17.6**</td>
</tr>
<tr>
<td>Frequency of saving water in the home by reducing personal water use</td>
<td>4.01</td>
<td>3.86</td>
<td>3.96</td>
<td>4.36</td>
<td>23.3**</td>
</tr>
<tr>
<td>Frequency of making environmentally-friendly purchases</td>
<td>3.35</td>
<td>3.14</td>
<td>3.47</td>
<td>3.91</td>
<td>88.1**</td>
</tr>
<tr>
<td>Frequency of using my own bag when shopping</td>
<td>4.02</td>
<td>3.77</td>
<td>4.06</td>
<td>4.40</td>
<td>32.1**</td>
</tr>
<tr>
<td>Frequency of buying energy-efficient appliances or devices</td>
<td>3.83</td>
<td>3.62</td>
<td>3.73</td>
<td>4.20</td>
<td>34.7**</td>
</tr>
<tr>
<td>Frequency of buying water-saving devices for the home and / or garden</td>
<td>2.79</td>
<td>2.65</td>
<td>2.96</td>
<td>3.52</td>
<td>37.8**</td>
</tr>
<tr>
<td>Frequency of buying organic and / or non-GM foods</td>
<td>2.75</td>
<td>2.31</td>
<td>2.66</td>
<td>3.38</td>
<td>103.6**</td>
</tr>
<tr>
<td>‘Purchasing’ factor</td>
<td>16.75</td>
<td>15.5</td>
<td>16.92</td>
<td>19.43</td>
<td>107.6**</td>
</tr>
<tr>
<td>‘Habits’ factor</td>
<td>13.38</td>
<td>13.11</td>
<td>12.92</td>
<td>14.01</td>
<td>29.0**</td>
</tr>
</tbody>
</table>

** p < 0.05
Survey Results – Cluster Comparison

- Comparison of attitudinal and daily mobility clusters – Chi-square tests
- Links between attitudes towards environment and daily travel behaviour
- Statistically significant associations between specific cluster groups of both segmentation analyses, e.g. “constrained public transport users” and “committed green travellers”
# Survey Results – Cluster Comparison

<table>
<thead>
<tr>
<th>Cluster Groups</th>
<th>Attitudinal clusters</th>
<th>Count</th>
<th>Cluster 1 – conscious car users</th>
<th>Cluster 2 – committed car users</th>
<th>Cluster 3 – constrained public transport users</th>
<th>Cluster 4 – committed green travellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Travel Behaviour Clusters</td>
<td>Cluster 1 – constrained public transport users</td>
<td>Count</td>
<td>89</td>
<td>37</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>86.1</td>
<td>56.2</td>
<td>16.8</td>
<td>18.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cluster 2 – committed green travellers</td>
<td>Count</td>
<td>93</td>
<td>42</td>
<td>19</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>94.3</td>
<td>61.5</td>
<td>18.4</td>
<td>20.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cluster 3 – semi-conscious car users</td>
<td>Count</td>
<td>145</td>
<td>103</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>135.4</td>
<td>88.4</td>
<td>26.4</td>
<td>29.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cluster 4 – committed car users</td>
<td>Count</td>
<td>73</td>
<td>79</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>84.2</td>
<td>54.9</td>
<td>16.4</td>
<td>18.5</td>
<td></td>
</tr>
</tbody>
</table>

Assympt. significance (Pearson Chi-square): 0.000
Survey Results – Conclusions

• Sustainability attitudes and environmental beliefs important for lifestyles / behaviour at home
• Determinants for daily mobility, especially use of environmentally friendly modes → Attitudes towards certain travel modes and the environment, general values, socio-demographic and –economic factors
• Holiday travel – no direct link to certain individual characteristics and attitudes → difficult to predict → People with environmental attitudes / behaviour use less environmentally-friendly modes for holiday trips
Next Stage: policy-focused research
Project Outline

- Research Review
- Focus Group Meetings
- Travel Behaviour Survey
- Data Analyses
- Focus Group Meetings / Interviews
- Social Marketing Measures
Project – Next Steps

• Evaluation of results – recommendations for measures aiming at behavioural shifts
• Follow-up focus groups and in-depth interviews
• Developing a framework of lifestyles and mobility styles
• Identifying target groups and successful approaches in the fields of daily and holiday travel, focus on efficiency and practicability
Questions for focus groups / interviewees

• Is there further information we need to collect?
• What are the key questions for policy?
• What type of data should we try to collect?
• Should we use scenarios to explore ideas?