

## **Awareness and Marketing** **including Individualised Marketing**

### **Introduction**

This record of evidence forms part of the work undertaken by UKERC's Technology and Policy Assessment team relating to its project on policy strategy for carbon emissions reduction in the passenger transport sector. The material was produced alongside the project's main report and since it supports that report, it was judged appropriate to make this material available to a wider audience. The main report itself '*What Policies are Effective at Reducing Carbon Emissions from Surface Passenger Transport?*', and the supporting evidence can be found at:

<http://www.ukerc.ac.uk/ResearchProgrammes/TechnologyandPolicyAssessment/TPAProjects.aspx>

### **Explanation of Content**

Evidence on this policy measure has been collected by the TPA team on the basis that it has, or may have, the potential to result in carbon dioxide emissions reductions in the passenger transport sector. This evidence document begins with a summarised description of the policy measure. The evidence itself follows the summary and is presented in table form.

Each piece of evidence has been assigned a separate row and tabulated using four columns:

- Year of publication, arranged chronologically, beginning with the most recent year
- Name of author, including where applicable additional cited authors (and year); and a Reference ID number.
- Type of evidence:
  - Evidence containing quantitative information is denoted by the letter 'Q'
  - Qualitative evidence is denoted by the letter 'C' for 'comment'
- The evidence itself

The evidence was originally gathered and assessed using several sub-headings. The purpose of this was primarily internal i.e. to facilitate the handling of evidence and the production of the main report. These sub-headings have been retained here as follows:

- Policy Measures and Carbon Savings
- Other potential CO<sub>2</sub> Impacts i.e. outside of the immediate policy influence
- Other Benefits e.g. air quality improvement or traffic congestion reduction
- Policy Costs and/or Revenues i.e. to local or national government
- Business and Consumer Costs
- Unintended Consequences e.g. rebound effect
- Reasons/Arguments for Carbon Savings Achievement or Failure
- Policy Suitability for the UK

A list of references follows the evidence tables. Note that the Reference ID numbers are allocated by Reference Manager, the referencing software used by the TPA team.

Any charts, figures and tables referenced in the evidence are not reproduced here but can be found in the original publication or evidence material.

Where no relevant evidence was found for a particular sub-heading, this has been noted.

## Policy Description

The evidence recorded here covers national and local government campaigns aiming to improve the public's understanding of the issues relating to travel choices and the need to reduce the environmental impact of car use, whilst also raising awareness of the facilities available for walking, cycling and public transport use.

Individualised marketing – sometimes known as Travel Feedback Programmes (TFPs), Personalised Journey Planning or Travel Blending – addresses perceived barriers to walking, cycling and public transport, by providing individuals at home, schools, and workplaces with detailed information regarding alternative travel modes to the car. Individualised marketing initiatives are generally introduced by local authorities to solve transportation problems (such as traffic congestion and air pollution) related to particular destinations e.g. workplaces or schools.

Public transport operators also embark on specific marketing campaigns to promote services and service improvements.

## Evidence Tables

### Carbon Savings and Policy Measures

Year	Author	Type	Evidence
2007	Anable & Bristow (ref 12297) citing Sustrans, 2006	Q	In the UK, TravelSmart has demonstrated consistent traffic reduction of between 10% and 13%, and it is estimated that a national programme targeting all 25 million households would save around 0.9MtC per annum.
2007	Anable & Bristow (ref 12297) citing Socialdata/ Sustrans, 2007	Q	<p>The UK Government has allocated £10m over 5 years to fund three Sustainable Travel Towns to become showcases of 'smarter choice' packages. Interim results indicate scope for encouraging a shift to less carbon intensive transport.</p> <p>In Darlington the individualised marketing programme involved travel advisors offering travel information tailored to a household, and collecting comments from residents about how their experience of local travel could be improved. In the whole town, walking has increased by 11%, cycling by 54% and trips as a car driver have reduced by 6%.</p> <p>Isolating these wider effects, individualised marketing resulted in a 14% rise in walking and cycling, a small increase in public transport use and a corresponding reduction in trips as a car driver (-5%) and as a passenger (-12%). Individualised marketing is resulting in a relative reduction of 5% car kilometres against baseline levels. These are impressive results after two years of implementation.</p>
2007	DEFRA (ref 11255)	Q	DEFRA analysed the potential for extending the UK 'Smarter Choices' programme. A 'low' scenario assumed a continuation of current national funding whilst a 'high'

Year	Author	Type	Evidence
			scenario involved wider implementation of present good practice. The low scenario could lead to a 1.4% reduction in traffic by 2010, and a 1.8% reduction by 2020. The high scenario could mean a 4.2% reduction in traffic by 2010 and a 5.3% reduction by 2020. Estimates of carbon saved per annum were 0.6 MtCe in 2010 and 0.8 MtCe in 2020.
2007	Kahn et al. (ref 11336) citing Brog et al., 2004	Q	Individualised marketing (a programme based on a targeted, personalized, customized marketing approach) was developed following travel awareness campaigns in the UK. It was applied in several cities for reducing the use of the car, and it was found to reduce car trips by 14% in an Australian city, 12% in a German city and 13% in a Swedish city (citing Brog et al., 2004).
2007	Kahn et al. (ref 11336) citing Taylor and Ampt, 2003	Q	The Travel Blending technique was a similar programme based on four special kits for giving travel-feedback to the participants. This programme reduced vehicle-km travelled by 11% in an Australian city.  The monitoring study after the programme implementation in Australian cities also showed that the reduction in car travel was maintained (citing Taylor and Ampt, 2003).
2007	Kahn et al. (ref 11336) citing Fujii and Tanguchi, 2005	Q	Japanese cases of travel-feedback programmes supported the effectiveness of soft measures for reducing car travel. The summary of the travel-feedback programmes in residential areas, workplaces and schools indicated that car use was reduced by 12% and CO2 emissions by 19%. It also implied that the travel-feedback programmes with a behavioural plan requiring a participant to make a plan for a change showed better results than programmes without one (citing Fujii and Taniguchi, 2005).
2006	Fujii and Tanguchi (ref 3338)	Q	Fujii and Tanguchi (2006) reviewed 10 Travel Feedback Programs (TFPs) in Japan. Figure 2 shows studies done in Sapporo, Ebetsu, Osaka, and Izumi which indicated that changes in travel behaviour reduced CO2 emissions by 15–35%.  These TFPs had a 19% mean average effectiveness in reducing CO2 emissions arising from changed travel behaviour (SD = 11%). There is no information on whether these are net CO2 reductions (i.e. taking into account the increase in public transport use).
2006	Fujii and Tanguchi (ref 3338) citing Fujii and Tanguchi, 2005	Q	TFPs in Japan resulted in a 19% reduction in CO2 emissions, 18% reduction in car use, and 50% increase in public transport use. TFPs implemented in Australia, UK, Germany, and US reduced car use by 2–15%, and increased public transport use by 10–44% - i.e. not substantially different from Japan.
2006	Fujii and Tanguchi (ref 3338) citing Someya &	C	Someya and Fujii (2005) found statistically significant long-term effects of a TFP conducted in Kawanishi/Inagawa in 2003.

Year	Author	Type	Evidence
	Fujii, 2005		
2006	Fujii and Tanguchi (ref 3338) citing Matsumara 2004	C	Matsumura (2004) found that rates of bus use remained equally high even 1 year after the 2002 Suita TFP implementation.
2006	Fujii and Tanguchi (ref 3338) citing Tanguchi et al., 2003	C	Taniguchi et al. (2003) found that participants in a 2001 Sapporo TFP still significantly reduced their car use 1 year after the TFP ended
2005	ESD/ Sustrans (ref 11458)	Q	<p>Case Study: 'TravelSmart' programme in Quedgeley, Gloucester:</p> <p>Size: 4,360 households. Cost: £160,306 (of which £37,600 for evaluation).</p> <p>Measures: Personalised information and support on walking, cycling and public transport.</p> <p>Response rates: Over 90% of households. Nearly 58% of this population were interested. Personalised TravelSmart information packs were delivered to 2,120 households</p> <p>Results: Substantial increases in walking, cycling and use of public transport, leading to relative reductions in car trips of 12% and in car distances travelled of 11%. The final surveys showed an increase in the reduction in car trips, compared with the 9% reduction shown in the interim surveys demonstrating the sustained effect of TravelSmart.</p> <p>Car kilometres saved: 6 million</p> <p>CO2 savings (predicted to continue over time): Annual emissions saving based on average fleet emissions factor of 0.14 kgCO<sub>2</sub> per km = 840,000 kg CO<sub>2</sub>.</p>
2005	Wolfram et al. (ref 11380) citing Cairns et al., 2004	Q	Public Transport marketing and awareness raising measures have been estimated to lead to an increase of PT ridership by 1.5 to 5% per year (national level), depending on assumptions regarding intensity of implementation.
2005	Wolfram et al. (ref 11380)	Q	The GOAL project (Germany) is an example of a district awareness campaign. It started with the identification of individuals to act as local moderators and catalysts (Local Agenda Managers), training of selected individuals, and self-organisation events with the inhabitants. In these meetings, the following measures were selected: Display of specific district maps, timetables for the nearest PT stops at main building entrances, distribution of information materials, mobility information for events, free bicycle

Year	Author	Type	Evidence
			checks, and discussion round tables for conflictive issues. Total car mileage savings of 204,400 km were attributed to this campaign.
2005	Wolfram et al. (ref 11380)	Q	<p>The EU's GOAL project provided targeted information to individuals including:</p> <ul style="list-style-type: none"> <li>• A health training programme for employees of a major company including lectures and presentations advising on healthier life-styles and mobility behaviour</li> <li>• common fitness sessions in the evening</li> <li>• regular health checks.</li> </ul> <p>This resulted in a car mileage saving of 286,000 km equal to 1966t CO<sub>2</sub>.</p>
2004	Cairns et al. (ref 11489)	Q	A reduction of urban road traffic of 7- 15% from personalised travel planning is considered feasible.
2003	Anderson (ref 11240)	Q	<p>The potential carbon dioxide savings that might be achieved by the introduction of individual transport tools is shown in Table 6.1.</p> <p>From Awareness &amp; Training: 0.81% saving from baseline by 2010 and 2.4% by 2050.</p> <p>From Individual Marketing: 0.3% saving from baseline by 2010 and 0.5% by 2050.</p>
2003; 2001; 1998	Taylor & Ampt (ref 11540); John (ref 11670); James (ref 11669)	Q	<p>A trial of individualised marketing, aimed at increasing both public transport patronage and cycling, began in the municipality of South Perth, Western Australia in 1997 (James, 1998; Taylor &amp; Ampt, 2003). The evaluation survey suggested a 10% reduction in car driver trips and a 14% reduction in VMT had been achieved. Public transport trips increased by 21%, cycling by 91%, walking by 16% and car passenger trips by 9% (indicating increased ride-sharing). In 2000 a major project for travel behaviour change was then implemented. In this project all 15,300 households resident in the area were invited to participate in a Travelsmart program. John (2001) and Taylor &amp; Ampt (2003) report a 25% increase in public transport patronage and a 16% increase in walking trips resulting from this study.</p>

### Other CO2 Impacts

Year	Author	Type	Evidence
			No specific evidence found

### Other Benefits

Year	Author	Type	Evidence
			No specific evidence found

### Policy Costs and/or Revenues

Year	Author	Type	Evidence
2005	ESD/ Sustrans (ref 11458)	Q	A 'TravelSmart' case study near Gloucester offered personalised information and support on walking, cycling and public transport. The cost was £160,306 and involved 4360 households.

### Business and Consumer Costs

Year	Author	Type	Evidence
			No specific evidence found.

### Unintended Consequences

Year	Author	Type	Evidence
			No specific evidence found

### Reasons/Arguments for Carbon Reduction Achievement and/or Failure

Year	Author	Type	Evidence
2008; 2007; 2005; 2003;	Moser & Bamberg (ref 11518) Bonsall (ref 11508) Stopher (ref 11519) Ker (ref 11517)	C	There has been considerable debate about the validity of results emerging from individualised marketing or personalised travel planning techniques. Concerns include monitoring being carried out by the same people who have undertaken the activity; the sample sizes being used, the evaluation of results against the counterfactual and the possibilities of unrepresentative reporting of different types of household.
2007	Bonsall (ref 11508)	C	Various UK studies have been independently audited in order to understand the extent to which behaviour changes only apply to only the households who agreed to receive the information as opposed to the wider neighbourhood and whether control groups were used to understand background changes (11508 Bonsall 2007).
2006	Fujii and Tanguchi (ref 3338) citing Cairns et al., 2004; and citing Matsumura 2004	Q	Several key conditions appear to determine the size of the CO2 reductions achieved by the TFP initiatives in Japan:  1) How/whether (i) the initiatives try to motivate behaviour change (as opposed to just providing information) (ii) whether the participants request a plan for changing travel behaviour and (iii) whether the initiatives provide individualised information: <ul style="list-style-type: none"> <li>programme with a behavioural plan had significantly greater behaviour-changing effect than a TFP without e.g. Sapporo (2002) - 35% vs. no reduction, for TFPs with and without a behavioural plan, respectively.</li> <li>However, it is not possible to say that TFPs with behavioural plans are always more effective than TFPs without behavioural plans. TFPs that lack a</li> </ul>

Year	Author	Type	Evidence
			<p>behavioural plan but, e.g., provide further detailed individualised advice such as ones used in personalised journey planners (citing Cairns et al 2004) may be as effective as TFPs with behavioural plans.</p> <p>2) Quality of information provided / measurement:</p> <ul style="list-style-type: none"> <li>individualised comments based on more travel data were more effective with respect to travel behaviour modification. Nevertheless, even a 1-day travel diary was sufficient to reduce CO2 emissions.</li> </ul> <p>3) Residence:</p> <ul style="list-style-type: none"> <li>two factors influenced the effectiveness of the Suita TFP: whether residents were new or old (43% vs. 70% increase in public transport use, respectively), and whether the TFP included a behavioural plan (38% without a behavioural plan vs. 75% with a plan). TFP was more effective when it targeted new residents and requested that participants make a behavioural plan on how to use public transport.</li> </ul>
2005	Wolfram et al. (ref 11380)	C	<p>Reviewing the pan-European TAPESTRY project, Wolfram et al (2005) states that:</p> <ul style="list-style-type: none"> <li>Campaigns can lead to an increase in the use of sustainable modes (such as public transport). Four TAPESTRY campaigns led to such an increase;</li> <li>Campaigns can lead to decrease in car use. Five TAPESTRY campaigns did so;</li> <li>Communications campaigns can achieve high levels of awareness within the target community;</li> <li>Campaigns can achieve significant shifts in attitudes. As a whole there were more positive than negative changes;</li> <li>Some shifts more easily achieved than others. E.g. few campaigns altered perceptions re cost of bus travel, but can alter opinions re security or comfort;</li> <li>Changing the levels of awareness and perceptions, prior to behavioural change are valid and useful objectives. Some campaigns demonstrated attitudinal changes without behaviour change.</li> </ul>
2000	Marshall (ref 417); and citing DANTE Consortium 1997c	Q	<p>Examining a project to reduce car use through raising awareness, Marshall (2000) says the idea was to create awareness, then to change attitudes and finally behaviour. 20% of the respondents in the neighbourhoods stated that they used the car less often than before the campaign. In the control neighbourhood, by contrast, this was 11%. In the experimental neighbourhoods 12% of respondents declared a switch from car to another mode (typically the bicycle), while in the control neighbourhood this was 7%. Mode switching was mainly present for trips up to 5 km (citing DANTE Consortium, 1997c). Thus raising awareness in itself can make a difference to travel behaviour and contribute to reduction in car travel.</p>

## Policy suitability for UK

Year	Author	Type	Evidence
			No specific evidence found

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