DOCUMENT DETAILS

Compendium ID: 1002 Date of Entry: 2007-03-05

Article title:	Dynamics and ITS: Behavioral Responses to Information Available from ATIS
Article reference details	Golledge, R. (2002), Dynamics and ITS: Behavioral Responses to Information Available from ATIS, In: H.S. Mahmassani (Ed.), In Perceptual Motion: Travel Behavior Research Opportunities and Application Challenges, Pergamon, Elsevier Science, pp. 81-126
Web Address:	
Source project (if applicable):	review paper - no specific application
Contact name:	R. Golledge
Affiliation:	
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Sponsor(s):	
Country/Region/City:	review paper - no specific application

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☑	Other	☑
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☑

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	Review on travellers' responses to traveller information provided by ATIS
Description/method:	This is a review paper, reviewing about 150 references related to behavioural responses to ATIS. Reviews evidences collected from laboratory experiments and field studies.
Findings/conclusions:	Examine both the demand side and the supply side of travel behaviour modelling; provides a focus on recent work on ITS dynamics: ensuring that 'real' behaviours are considered, rather than hypothetical/rational/optimizing ones, paying more attention to behaviours that take place within a real transport system. Questions the representation of transport systems using travel simulators; while many important attributes are not included. Calls for better understanding of travellers' responses to travel information by implementing knowledge and techniques derived from cognitive psychology, spatial cognition, and geography on the processes of navigating and wayfinding.

Strengths/weaknesses:	This paper does not provide robust empirical evidences, but opens areas of discussion related to ATIS and travellers' response to travel information. Provides good review and in-depth discussion related to the key question on 'research methods'. Address some of the unanswered questions with respect to the behavioural responses to travel information systems and their effect on changing behaviour.

END

DOCUMENT DETAILS

Compendium ID: 1003 Date of Entry: 2007-03-05

Article title:	Violations of Expected Utility Theory in Route-Choice Stated Preferences: The Certainty Effect and Inflating of Small Probabilities.
Article reference details	Avineri, E. and Prashker, J. N.(2004), Violations of Expected Utility Theory in Route-Choice Stated Preferences: The Certainty Effect and Inflating of Small Probabilities. Transportation Research Record 1894, 222-229.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	General

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☑

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	Common travel-choice models are based on the maximum utility assumption. However, using expected utility theory in descriptive models of individual choice was criticized by behavioural scientists, and recently also by transport researchers. The aim of this work is to examine whether violations of expected utility theory may be found in travellers' stated-preferences behaviour.
Description/method:	In this work, route-choice stated-preferences experiment was conducted. A questionnaire, inspired by experiments of cognitive psychologists, presented simple route-choice problems.
Findings/conclusions:	Evidence was found of two violations of expected utility theory based on a set of stated-preferences route-choice problems. The experimental results may be explained by Prospect Theory, an alternative model of decision-making under risk.

Strengths/weaknesses:	This paper address some of the unanswered questions with respect to the behavioural responses to travel information systems and their effect on changing behaviour under risk and uncertainty in travel times. This paper highlights the importance of format in the presentation of travel information to travellers; travellers' sensitivity to a reference point plays an important role in understanding responses to travel information, and in the design of effective travel information systems that may influence a change in travellers' behaviour in a more effective way. Although based on a route-choice study, these insights are important in relation to modal shift as well.

END

DOCUMENT DETAILS

Compendium ID: 1004 Date of Entry: 2007-03-05

Article title:	The Effect of Reference Point on Stochastic Network Equilibrium
Article reference details	Avineri, E. (2006), The Effect of Reference Point on Stochastic Network Equilibrium. Transportation Science 40(4), 409-420.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	FBE, UWE
Country/Region/City:	General

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☑

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	Following studies of human decision making under risk and uncertainty, an extensive evidence of loss aversion and asymmetric risk-taking behaviour around a reference point was found. Prospect theory proposes an alternative framework to the traditional risk-taking modelling in travel behaviour, which might be too simplistic. This paper examines the possibility of applying prospect theory for modelling stochastic network equilibrium, and presents an investigation of the effect of reference point value on such equilibrium. Conceptual and methodological issues that could be addressed by further research in transportation research are suggested.
Description/method:	The author developed a theoretical model of choice behaviour based on empirical findings and descriptive models developed by cognitive psychologists and travel behaviour researchers.
Findings/conclusions:	This paper presents a 'soft' approach to influence travel choices based on travellers' sensitivity to a reference point and to the format of travel information.

Strengths/weaknesses:	This paper address some of the unanswered questions with respect to the behavioural responses to travel information systems and their effect on changing behaviour under risk and uncertainty in travel times. This paper highlights the importance of format in the presentation of travel information to travellers; travellers' sensitivity to a reference point plays an important role in understanding responses to travel information, and in the design of effective travel information systems that may influence a change in travellers' behaviour in a more effective way. The nature of travellers'' risk-taking behaviour is ultimately an empirical issue. In this respect, our understanding of travellers' responses to travel information using the suggested set of behavioural assumptions is limited. The effect of shared information and social interactions between the network users, which may be captured by a social learning process, is not studied. Although based on a route-choice study, these insights are important in relation to modal shift as well.

END

DOCUMENT DETAILS

Compendium ID: 1005 Date of Entry: 2007-03-05

Article title:	The Role of Minority Influence on the Diffusion of Compliance with a Demand Management Measure
Article reference details	Sunitiyoso, Y., Avineri, E. and Chatterjee, K. (2006), The Role of Minority Influence on the Diffusion of Compliance with a Demand Management Measure. 11th International Conference on Travel Behaviour Research, Kyoto, 16-20, August 2006.
Web Address:	
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Sponsor(s):	
Country/Region/City:	General

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☑
Content	☑	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This study aimed to obtain some informed insights about the role of social interaction, social learning, and social influence on travellers' decision making to comply with a policy measure.
Description/method:	A multi-agent model which incorporates these social aspects is developed. The social interaction includes consideration of various interaction domains (e.g. neighbourhood, workplaces, or non-work activity clubs) and two sequential processes of interaction: meeting and communicating. In the social learning and influence, an investigation of the role of minority influence on the spread of compliance with a policy measure becomes a primary consideration. Aspect like inertia in decision making is also considered. An explorative behavioural survey has been conducted to obtain initial information regarding mechanisms of social interaction and social learning. Based on the survey, parameters and initial values of variables required for the simulation model have been estimated. Both empirical and theoretical findings are combined to develop a multi-agent simulation model.

Findings/conclusions:	The survey suggests that some individuals may be influenced by other people, who are relatively close to them, regarding travel-related decision. These close persons of an individual may have an opinion/expectation which can be important for the individual. The results of simulation experiments suggest that the model is able to provide some informed insights about the spread of compliance with a 'soft' measure from an individual to other individuals and the diffusion from a group to other groups. Social interaction has been shown to have a major role in spreading compliance with the measure. The role of minority influence on eliciting compliance has been demonstrated in the experiments. A small number of influential individuals with consistency of choice on complying with the measure were able to diffuse their choice to others. Also, a group that consists of influential agents was able to diffuse their compliance to other individuals from different groups. The results have also shown that a social club domain with a high opportunity of repeated interactions between its members have an important role on the spread of compliance.
Strengths/weaknesses:	This is one of the only papers that observe the social dimension of travellers' responses to travel information. It provides good review and in-depth discussion related to the key questions on 'research methods' and 'Evolution'; ATIS opportunities in providing real-time social information on the choices made by others are explored beyond the traditional behavioural assumptions on travellers' choices, offering some new insights. Applications of the model into real-world practice still requires further development as the model is relatively simple and the factors involved in the practice would be much more complicated and beyond the scope of this study. There are also interrelationships between the social aspects with other individual aspects, such as personality, attitude, habit, etc; as well as complexity of travel environment that need to be considered in the further development.

END

DOCUMENT DETAILS

Compendium ID: 1008 Date of Entry: 2007-04-04

Article title:	Travel information as an instrument to change car-drivers' travel choices: a literature review.
Article reference details	Chorus C., Molin, E., and Van Wee, B. (2006) Travel information as an instrument to change car-drivers' travel choices: a literature review. European Journal of Transport and Infrastructure Research, 6, 335-364.
Web Address:	
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Sponsor(s):	NWO/Connekt
Country/Region/City:	International coverage

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This paper aims to provide an integrative, generic insight into the overall potential and limitations of travel information as a means to change car drivers' travel choices.
Description/method:	Mainly empirical academic literature of the past 15 years has been reviewed concerning the use and effects of travel information among car drivers. The focus is on a modal shift from private car to public transport and changes in car drivers' choices for departure times and routes towards a more even distribution of traffic within the available road network. The literature is discussed using the following concepts: 1. perceived utility of the intended or currently chosen travel option and the perceived utility of alternative options; 2. perceived own knowledge level and perceived information quality level; 3. perceived costs of choice adaptation and of acquiring information.
Findings/conclusions:	The following ten general insights have been formulated by the authors: 1. Our expectations regarding the effects of information provision on travel choices in general may be mildly optimistic, particularly for behavioural adaptation not involving changes in mode choice; 2. Information that is provided is used among travellers to the extent that its (non-) monetary costs are low; 3. Information provision on the performance of the currently chosen alternative, also under normal circumstances, may help change car drivers' choices in the long run; 4. The effect of information provision on other than the

	currently chosen or intended option is conditional on the performance of these alternative options and the extent to which the information takes into account information acquisition costs and the costs of adaptation towards these alternative options; 5. The long term effect of giving advice is likely to be limited; 6. Young male drivers with high education and income levels that make a trip that differs from trips normally made in terms of destination, departure time, day of the week (weekday versus weekend) are most likely to use information provided to them and divert to other travel alternatives; 7. In situations where a high variability of conditions exists in parts of the network the traveller is familiar with, information use and effect is likely to be relatively high; 8. The effect of information provision is relatively high during long trips, complex trips, and trips made for an important purpose; 9. Making information services work well under incident conditions is likely to be cost-effective; 10. Providing travellers with information as early as possible is likely to increase its effectiveness in terms of behavioural adaptation. The authors conclude that due to learning dynamics, the long term effects of information provision are likely to be somewhat stronger than the short term effects.
Strengths/weaknesses:	It is very valuable that the empirical literature is presented and discussed using theoretical determinants of the impact of travel information provision.

END

DOCUMENT DETAILS

Compendium ID: 1010 Date of Entry: 2007-03-15

Article title:	Understanding and addressing dyslexia in travel information provision
Article reference details	Lamont, D. and Lyons, G. (2007). Understanding and addressing dyslexia in travel information provision. Proc. 39th Universities Transport Study Group Conference, January, Harrogate.
Web Address:	
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Sponsor(s):	UK Department for Transport, Transport Direct Programme
Country/Region/City:	United Kingdom

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☐	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	To understand how well current provision of travel information is suited to the needs of dyslexic people, the problems facing people with dyslexia in using such information and the changes that might be made to improve travel information for dyslexic people.
Description/method:	Contextual understanding was built up through qualitative discussions with experts in dyslexia, as well as a literature search. The main part of the project consisted of in-depth discussions with representative dyslexic people at six focus groups. The principal researcher also took part in three online discussion forums associated with dyslexia.
Findings/conclusions:	In its introduction, the paper identifies dyslexics as a group with significant but varied learning difficulties: a combination of abilities and difficulties that affect the learning process in one or more of reading, spelling, listening and writing", where suffers are often assumed wrongly to lack intelligence. To understand how dyslexic people might fare in using travel information, the main part of the study looked in turn at pre-journey experience, the journey experience by car and by public transport, and the end-leg; all seen in terms of dyslexia. The research found that individuals with dyslexia will experience difficulty in situations that place heavy demands on them in terms of language, such as gathering and using travel information, due to their differences in learning style. This includes confusion over written information, both numbers and letters, in printed text and on signs; problems understanding printed maps; difficulties in understanding spoken

	messages, in discussion or through announcements; and poor recall of information previously given. Problems in these fields may also be experienced by non-dyslexics but they likely to be seriously emphasised for dyslexics. Because dyslexic people think with the creative side of their brain, presentation of information in pictorial form, including maps, landmarks and symbols, may be more helpful; the style of verbal information also needs to be reconsidered. Many of the problems have far wider relevance and implications for non-dyslexics, particularly other disabled groups.
Strengths/weaknesses:	The research findings are valuable in pointing to specific problems with use of information in its current form and making some suggestions for improving its effectiveness. They applies primarily to dyslexic people but offers clear lessons for the general provision of information. They focus only on current problems; the work reported did not include any practical tests of alternative forms of provision.

END

DOCUMENT DETAILS

Compendium ID: 1011 Date of Entry: 2007-03-20

Article title:	Conceptualising barriers to travel information use
Article reference details	Farag, S. and Lyons, G. (2007). Conceptualising barriers to travel information use. Proc. 39th Universities Transport Study Group Conference, January, Harrogate.
Web Address:	
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Sponsor(s):	
Country/Region/City:	United Kingdom

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The paper aims to present a social-psychological theoretical framework (based on the Extended Model of Goal-directed Behaviour) that could be helpful in explaining barriers to travel information use.
Description/method:	The paper reviews the current state of transport information service use in the UK, based on available sources. It then considers the scope for the Extended Model of Goal-directed Behaviour (EMGB) as a potentially useful approach to explain travel information use and non-use.
Findings/conclusions:	The paper first identifies the importance of travel information in providing for more effective use of the transport system by users. It then examines the level of use and awareness of information services in Great Britain. It finds that use of the Travel Direct Portal services has risen eight-fold since 2004, while for National Rail Enquiries use of the Web has grown while telephone calls have declined. Surveys indicate that about 455 to 50% of the population are aware of the NRE, National Express, AA and RAC services; but awareness of some other services is far lower, 6% in the case of the Transport Direct Web site. Professional people, especially in age group 25-44 and in urban areas, are much more likely to use such information services, especially for longer journeys; older and more dependent groups are less likely to use them. These patterns may reflect both the quality of information services and the individuals' perceptions: people only use travel information

	services when their perceived knowledge is insufficient. The paper then explains the principle of the Extended Model of Goal-directed Behaviour (EMGB), which is premised on the notion that the choice of behaviours is based on utilitarian considerations: i.e. behaviours are assumed to be selected because of their usefulness in achieving a goal. Thus people will differ in their use of travel information in relation to their goals, their anticipated emotions on achieving the goal, and also their subjective norms, attitudes, and past behaviour. The paper also reviews the limitations of the EMGB approach, especially the importance of external factors in influencing observed behaviour. It concludes that, despite these limitations, a social-psychological approach such as the EMGB offers real potential as a basis for future research, especially to understand areas currently not fully assessed, such as people's travel goals, identifying where travel information might have benefits not currently understood and addressing the travel needs of differing groups of people.
Strengths/weaknesses:	The paper makes a valuable case for research methods potentially extending the value and use of travel information. It is however based mostly consideration of theoretical concepts.

END

DOCUMENT DETAILS

Compendium ID: 1012 Date of Entry: 2007-03-15

Article title:	A Cumulative Prospect Theory Approach to Passengers Behavior Modeling: Waiting Time Paradox Revisited
Article reference details	Avineri, E. (2004), A Cumulative Prospect Theory Approach to Passengers Behavior Modeling: Waiting Time Paradox Revisited. Journal of Intelligent Transportation Systems 8(4), 195-204.
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Country/Region/City:	Israel

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To understand the aims of public transport (bus) users, especially minimizing waiting times, in the light of the concepts of cumulative prospect theory (CPT), and to identify what form services operators might provide information in to assist users' aim. Cumulative prospect theory assumes that decisions on outcomes in a field are taken on a cumulative basis (from experience) rather than each decision being separate.
Description/method:	The paper considers the aims of public transport (bus) users, especially in relation to waiting times. It considers the issue of the 'waiting time paradox' that influences passengers' judgement of likely waiting times and reviews how the concepts of cumulative prospect theory might explain passengers' behaviour. This is tested through a laboratory based experiment in which 48 bus users were asked to value preferences for two (hypothetical) bus routes, with different headways and probability of arrival. The respondents were in two groups: one group were supplied with probable waiting times, the other with headway intervals.

Findings/conclusions:	The paper questions the idea that passengers take decisions on route choice on purely rational grounds; they are influenced by the timetable information supplied by operators but also by their perceived assessment of average waiting time in practice. To understand this, the paper considers the application of concepts based on cumulative prospect theory in explaining passengers' behaviour in relation to information on bus headway and waiting times; it uses a typical scenario for the arrival pattern for two bus routes (over the same corridor) to assess the cumulative weighted value for a passenger choosing between them and hence likely behaviour. It concludes that passengers generally take a risk minimisation approach to choose a bus route based on waiting times. Provision of headway intervals by bus operators may lead to misperception and thus influence travellers' behaviour. Further empirical research is needed to validate these findings.
Strengths/weaknesses:	The paper provides valuable insights into the concepts of cumulative prospect theory as a basis for understanding passenger behaviour and recommending the provision of waiting time rather than headway time information. It includes a laboratory based experiment but is based primarily on consideration of theoretical concepts.

END

DOCUMENT DETAILS

Compendium ID: 1013 Date of Entry: 2007-03-20

Article title:	The role of information in decision-making with regard to travel
Article reference details	Lyons, G. (2006). The role of information in decision-making with regard to travel. Intelligent Transport Systems, 153 (3), 199-212.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	Paper commissioned by the Foresight Programme, Office of Science & Innovation, Department of Trade & Industry of the Office of Science and Innovation, where we're going', World Transp. Policy Pract., 1996, 2, (1/2), pp. 24–28
Country/Region/City:	United Kingdom

RESEARCH AREAS COVERED

Awareness	☑	Providers	☑
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	To examine the role of information in decision-making with regard to travel, and to consider current developments in the provision of travel information in the information age.
Description/method:	The article starts by briefly examining the role of information in individuals' decisions on transport and the current context for travel information. It then draws on a range of research reports and other published information to examine in some depth several questions: What is the role of information? What types of information services are available? Is information in demand? What information do travellers want? What are the behavioural effects of information use? What are the challenges in providing information? It finishes by considering what the future might hold for travel information provision, considering in turn familiar trips, unfamiliar trips and factors that might govern future demand.

Findings/conclusions:	The article pulls together and considers a substantial amount of information about the provision and use of information and draws out some key issues that face providers. The transport system has grown in size and complexity; trips per person over the last three decades have grown by only 4% but average travel distance has increased by 47%, so that overall travel distance has increased by 53%; but 84% of all trips are under 10 miles. One quarter of all trips are on foot, but overall car use now dominates travel. The article considers the role of information, pointing to the growing interest in mode choice in the UK because of policy interest. It examines types of information provision: degrees of integration (between modes); the balance between journey planning and journey execution; real time provision; and delivery media. It illustrates these with descriptions of some current systems, looking at what information they provide and how: National Rail Enquiries, travelbristol, Traveline, Transport Direct, TfL journey planner, Traffic England. However, despite marketing campaigns, awareness of information services remains low, and often awareness of transport services is low as a result. Surveys show that people use information much more for less familiar journeys, such as a long distance train journey; but for most of their familiar journeys they use information only to confirm knowledge, not to consider alternative modes or routes. Users are interested only in information which they deem important, and this is likely to focus on aspects of planning ahead (e.g. ticket restrictions, travel time and cost) but not on familiar modes. Interest in alternative modes is likely to arise only if the current mode of travel for familiar journeys should change. Thus travel information of itself is very unlikely to change travel behaviour much. Some recommendations are set out for commercial, partnership and technical aspects of information provision. The article concludes that pre-trip information is not really needed for most familiar (local) trips but is for longer (unfamiliar) trips; but in-trip information can help all travel to become more effective.
Strengths/weaknesses:	The article offers a wide ranging review of travel information provision and use in Great Britain and in particular assesses the value of this against key factors in human behaviour.

END

DOCUMENT DETAILS

Compendium ID: 1014 Date of Entry: 2007-03-15

Article title:	Sensitivity to Travel Time Variability: Travelers' Learning Perspective.
Article reference details	Avineri, E. and Prashker, J. N. (2005), Sensitivity to Travel Time Variability: Travelers' Learning Perspective. Transportation Research Part C, 13(2), 157-183.
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Sponsor(s):	
Country/Region/City:	Israel

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To assess the value of different theoretical concepts in understanding route choice decisions under uncertainty.
Description/method:	The paper first considers the factors involved in travellers' choice of routes. It then reviews the insights provided by a number of possible models of behaviour, including DN-SUE (deterministic network, stochastic user equilibrium), cumulative prospect theory (CPT), BL (Bayesian learning), the payoff variability effect, REL (reinforcement learning). To establish the validity of these, an experiment was carried out, in which 70 mature licence driving licence holders were asked to choose from two alternative (hypothetical work-home) routes for 100 successive journeys (= days), through a based programme, each choice influenced by feedback (actual time shown) from the immediately preceding choice. The actual sets of choices were then compared to the patterns suggested by the DN-SUE, CPT, BL and REL models.

Findings/conclusions:	Transport route decisions form an example of decisions taken daily in uncertain conditions; their aim is to optimise travel times, but knowledge of this generally comes from feedback from previous choices. The research aimed to gain insights into the basis of such choices. It considered the theoretical implications of the various behavioural models. The patterns of behaviour in the experiment were then measured against these; it was found that they differed substantially from those predicted by the DN-SUE and CPT models but were close to those from the BL and REL models. Thus route-choice behaviour is best captured by the assumption of slow adjustment process to immediate outcomes, rather than the assumption of utility maximization, and this is well captured by the learning models.
Strengths/weaknesses:	The paper provides useful insights into the concepts of the learning modes in terms of understanding route choice and how it is informed by feedback, based on a laboratory based experiment whose outcomes were measured against theoretical concepts. However, it is uncertain whether these findings can be applied to information provision systems in practice.

END

DOCUMENT DETAILS

Compendium ID: 1015 Date of Entry: 2007-03-15

Article title:	The Impact of Travel Time Information on Travelers' Learning under Uncertainty
Article reference details	Avineri, E. and Prashker, J. N. (2006), The Impact of Travel Time Information on Travelers' Learning under Uncertainty. Transportation 33(4), 393-408
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Sponsor(s):	
Country/Region/City:	Israel

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To consider how travellers respond to uncertainty in route-choice situations and the role of advanced travel information systems (ATIS) in aiding decision making.
Description/method:	The paper briefly considers the potential for ATIS to improve travellers' route-choice decisions, in the context of travellers' sensitivity to travel time variation. It considers the insights from models of information acquisition, i.e. learning as a sequential sampling process, taking into account the role of learning from experience only. To establish the validity of these, an experiment was carried out, in which 47 mature licence driving licence holders, in two groups, were asked to choose from two alternative (hypothetical work-home) routes for 100 successive journeys (= days), through a based programme, each choice influenced by feedback (actual time shown) from the immediately preceding choice. One group were informed of the average time for each route beforehand, the other were not. The results for the two groups were then compared and the implications considered.
Findings/conclusions:	Analysis of results indicated that there was no significant difference in the proportion of choosing alternative routes between the two groups. However, over the last block of 20 trials, participants in the 'with information' scenario were more likely to chose one route. The learning time was slow. In principle travellers aim to maximise the utility of their choice of route; in practice observation has suggested that they do not necessarily do this in a consistent way. Consideration of theoretical concepts suggested that behaviour might differ according to whether travellers relied on their own knowledge or on (static)

	knowledge supplied to them. This was tested through the laboratory experiment, which showed that the propensity of travellers to minimize travel time does not always increase as a result of supplying travel information through e.g. ATIS. Providing static information about expected travel times does increase the heterogeneity of travellers and reduces the maximization rate. Individuals become faster learners, but not necessarily by minimizing travel time. Better understanding of travellers' sensitivity to uncertainty when information is provided may help transportation systems planners.
Strengths/weaknesses:	The paper provides a useful insight into the limitation of static information on route choice informed by feedback, based on a laboratory based experiment.

END

DOCUMENT DETAILS

Compendium ID: 1016 Date of Entry: 2007-03-20

Article title:	Valuation of Different Types of Travel Time Reliability in Route Choice: Large-Scale Laboratory Experiment.
Article reference details	Bogers, E., Hoogendoorn, S., van Zuylen, H. J. and Viti, F. (2006), Valuation of Different Types of Travel Time Reliability in Route Choice: Large-Scale Laboratory Experiment. A paper presented at the 85th Annual Meeting, Washington, D.C.
Web Address:	
Source project (if applicable):	
Contact name:	Enid A I Bogers
Affiliation:	
EMail:	e.a.i.bogers@citg.tudelft.nl
Sponsor(s):	AMICI, which is sponsored by the Netherlands Foundation of Scientific Research NOW (AMICI programme)
Country/Region/City:	Netherlands

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The research aimed to understand reliability, especially what the components are. The main goals were: to give insight into the validity of the hypothesis that average time and variance on a specific route influence drivers' behaviour but so do extreme travel times; and to analyze what impact the provision of en-route travel information has on the perception and valuation of such extreme travel times.
Description/method:	A brief review was carried out of research literature on how reliability plays a role in decision making in general and travel choices in particular. The travel simulator laboratory of Delft University then put a representative group of 2500 Dutch drivers (selected by the Dutch road users' association) through a computer based experiment. Each respondent was asked to make 40 consecutive choices for a car trip of 30 kilometres, choosing one of three routes each time. The three routes had different characteristics of reliability. Each respondent was also placed in a different scenario for the level of information supplied, en-route and after each trip.

Findings/conclusions:	Previous research had shown that drivers usually attribute negative value to higher unreliability, measured by higher variations in travel time. However, some prefer a higher risk option if the outcomes include a high proportion of good (fast) journeys; though experience over time may change their view. The experiment demonstrated a preference for the route with a very wide variation in times but a high chance of low time. Where en-route information was provided, 48% of drivers changed route after a bad experience, i.e. a seriously extended journey time; but without en-route information 72% of drivers changed route after a bad experience. The most unpredictable route had the most negative value. The experiments showed that travellers would rather suffer once in a while from a very bad travel time or every day from a long but stable travel time than from an unpredictable route. If travellers choose a route for which they had been warned for an extremely long travel time by correct travel information, they do not loose faith in the route. However, if they experience an extremely long travel time without being warned for it, they switch significantly more often to another route the day after. On a practical level this means that if information is provided it is important that it is correct.
Strengths/weaknesses:	The research brings further insights to understanding how drivers assess route reliability and choose between routes, and the value of information in such decisions. It was laboratory based and did not consider specific methods of providing information.

END

DOCUMENT DETAILS

Compendium ID: 1017 Date of Entry: 2007-03-20

Article title:	Willingness to pay for travel information.
Article reference details	Khattak, A.J., Youngbin, Y. and Prokopy, S. L. (2003) Willingness to pay for travel information. Transportation Research C 11, 137 – 159
Web Address:	
Source project (if applicable):	
Contact name:	Asad J. Khattak
Affiliation:	University of North Carolina
EMail:	
Sponsor(s):	California PATH Program & Carolina Transportation Program
Country/Region/City:	California, USA

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To understand travellers' willingness to pay for better quality information received from a traveller information system.
Description/method:	A proportion of calls to a traveller advisory telephone system (TATS) were intercepted and callers were invited to take part in a survey. Those who agreed (511 individuals) were subsequently surveyed through a computer-aided structured telephone interview, which sought stated preferences over possible charges. The resulting data were analysed to provide indicators of likely behaviour. Comparisons were made with known experience, including a service in Boston, and the findings from other research.
Findings/conclusions:	Travel information is widely available on radio, television and the Internet in the USA but it is unclear how far travellers will pay for the specific travel information services now being started (other than local phone charges already incurred). The survey showed that charges for a non-improved service would lead to decline in use; but callers would be willing to pay 25 cents per call for a customised service, though usage would decline at higher charges. Payment per call would be preferred to monthly payments. Car users are more likely to use the service (transit callers have less control over their travel). Longer trips increase call frequency. Call frequency is lower for travellers on regular trips; although still significant for those on work trips. Income levels do not appear to have any significant impact on frequency or willingness to pay. Listening to the radio is more likely to encourage use of TATS. Information service providers might wish to add information on a

	wider range of travel services to add value.
Strengths/weaknesses:	The results form a valuable indicator of opportunities for increasing provision of telephone information provision, through public information systems and commercial networks. They are set in the context of USA telephone network provision and use.

END

DOCUMENT DETAILS

Compendium ID: 1018 Date of Entry: 2007-03-23

Article title:	Measuring Improvements in Network Information and Information Services – Final Report
Article reference details	Atkins, (2005), Measuring Improvements in Network Information and Information Services - Final Report. Report to the Highways Agency, April.
Web Address:	
Source project (if applicable):	MINIS
Contact name:	
Affiliation:	
EMail:	
Sponsor(s):	Highways Agency
Country/Region/City:	England

RESEARCH AREAS COVERED

Awareness	☑	Providers	☑
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	(i) To evaluate the effects of improved travel information in terms of traveller knowledge & satisfaction of services provided by the National Traffic Control centre (NTCC), traveller behaviour and network performance, through a before and after comparison of measured parameters; and subsequently (ii) To steer the refinement and packaging of services where information is not achieving the desired aim; and so help deliver HA and Government objectives.
Description/method:	Driver intercept surveys were carried out at four different locations in England, in November 2003 and in November 2004, each of 1300 drivers. Additional questions relevant to the study were added to the HA's RUSS surveys in winter 2003 to check representativeness of the locations. A supplementary intercept survey was performed in July 2004 to establish whether there was significant variability in the results during peak holiday traffic conditions. These were complemented by a series of six focus groups, aimed at exploring the issues in greater depth. These targeted specific types of drivers as well as participants with various attitudes towards traffic information. Subsequently the study sought to measure quality of services provided through the creation of an Information Quality Statement (IQS) for each information service, measured against the outputs for each service.

Findings/conclusions:	The main results indicated that the use of information is low: less than 20% of respondents access pre-trip and less than 30% en-route information. Drivers are more likely to consult pre-trip and en-route traffic information when making longer distance, unfamiliar journeys, often with a time constraint or where there is a perception that problems may be encountered, such as a holiday weekend. The use of real-time information is lower still, with less than 10% of respondents accessing real-time information pre-trip and less than 20% en-route. The most frequently used source of live en-route information is the radio: the 'human' element of radio broadcasts is an important factor in the perceived trustworthiness of information. Drivers see little need to check network conditions prior to departure as there is mistrust as to how accurate the information will be by the time they arrive at the 'trouble spot' on their journey. The focus groups confirmed the main survey results. They particularly brought out the value of the radio in offering free and up-to-date information which could be taken in without diverting attention from driving, in the background and with a human voice. The proposed IQS contains four elements: Signature of the Service, a visual indication of purpose, to allow like for like comparison; Characteristics of the Service, the make up of the information provided, its usability, value for the user and the network manager, frequency of update; User Impact, level of current and potential use, extent of influence; Statements, qualitative declarations of purpose, targets, market segment etc. Assessment of the outputs from a range of information services suggested that no major changes need to be made to the methodology, which could be repeated to provide the basis for annual comparison exercises. Annual monitoring was recommended, with a suggested list of Key Performance Indicators (KPIs). The accuracy of information services needs further examination.
Strengths/weaknesses:	The study forms a valuable assessment of the use and effect of information services for car drivers on the national road system. Its proposals for quality assessment and monitoring of services offer useful guidance. The approach and findings could compare well to assessments of information services for public transport, or indeed offer an approach to these.

END

DOCUMENT DETAILS

Compendium ID: 1019 Date of Entry: 2007-03-23

Article title:	Traveler expectations and willingness-to-pay for Web-enabled public transport information services
Article reference details	Molin, E. Timmermans, H, (2006). Traveler expectations and willingness-to-pay for Web-enabled public transport information services. Transportation Research Part C. 2006/04. 14(2) 57-67.
Web Address:	
Source project (if applicable):	EUROSPIN
Contact name:	Eric J E Molin
Affiliation:	Delft University of Technology
EMail:	
Sponsor(s):	European Commission
Country/Region/City:	Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	To assess the relative importance which travellers attach to a range of information aspects on a Web enabled system for obtaining public transport information; in particular the willingness to pay for this information.
Description/method:	Review of public transport suggested 54 aspects which passengers might need to know about. Assessment led to 10 attributes being developed for survey, including price; these covered 36 aspects. These were combined into 16 full profiles describing hypothetical information systems offered by the Internet. For the experiments the 16 profiles were randomly placed in choice sets of two profiles each, with two base alternatives added, for a stated preference (SP) survey. These were incorporated in a 3-part questionnaire: the first part consisted of the direct importance measurement of 36 basic information aspects, the second part set out the SP experiment, the last part involved measurement of some background variables. After a pilot survey, 250 questionnaires were handed out on inter-city trains; 217 were returned, 184 fully completed ones were analysed.

Findings/conclusions:	Analysis of the results validated the grouping of aspects into attributes made by the researchers. The attribute which had by far the highest preference (scored 4.8) was Real time information (on planned and dynamic changes). Other attributes with high scores (3.9-3.7) were: Planning options (cheapest route, minimum interchange, mode choice); Tickets (how to buy); Walking route (distance, directions, platform number), Interchange: functional requirements (cash machine, telephone, &c). Attributes which scored lower related to Private transport (parking), Interchange activities (shops, restaurants), Comfort & service en route, Destination facilities. Respondents expressed a high willingness to pay for real time information, if provided as part of a functional Internet based system; they would be willing to pay for additional planning options, ticket information and timetable schedules; but much less willing to pay for information on private transport, interchanges and the final destination.
Strengths/weaknesses:	The research provides valuable insights into what public transport users want from information and the priorities they attribute to various elements, notably real time information. It also indicates the extent to which they might pay for information on the various elements. Being based on a stated preference survey, it does not bring in practical experience of actually offering such services.

END

DOCUMENT DETAILS

Compendium ID: 1020 Date of Entry: 2007-03-23

Article title:	Availability of transport accessibility information for disabled people.
Article reference details	Atkins, (2006). Availability of transport accessibility information for disabled people. Scottish Executive - Transport Research Planning Group.47pp
Web Address:	http://www.scotland.gov.uk/Publications/2006/08/22140502/0
Source project (if applicable):	
Contact name:	
Affiliation:	
EMail:	
Sponsor(s):	Scottish Executive
Country/Region/City:	Scotland

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☑
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:

To study the availability and ownership of the information required by disabled people when planning a journey using public transport, in order to improve the current level of service and information offered to people with a disability by Transport Direct and Traveline Scotland. In particular to:
• Highlight the critical pre-travel information required by disabled people;
• Identify which organisations own the required accessibility information;
• Recommend the most efficient method of collecting this data;
• Identify gaps in data collection and recommend the best method of surveying interchange points for accessibility information in Scotland;
• Recommend how to maintain and update this data, and add it to existing information systems;
• Prioritise a list of data elements available, in order of ease of collection.

Description/method:

For the purposes of this research, disabled people were categorised into four main groups:
• Physically impaired (including wheelchair users and people who have difficulty walking);
• Visually impaired (blind and partially sighted);
• Hearing impaired (deaf and hard of hearing); and
• People with learning disabilities.

The research involved 3 main phases:

	• Phase 1: Identify pre-travel information required by disabled travellers, through review of the literature and through consultation with disability organisations to test the 'essential list' findings of a previous study and to confirm the information most required by disabled people when planning journeys. • Phase 2: Assess existing information sources, through a questionnaire survey with data owners - bus, ferry and rail operators - based on the defined list of essential information requirements. • Phase 3: Analyse and identify data collection methods, to assess what data was readily available and what information was missing. Possible methods for the collection of existing and new accessibility data were discussed with some data owners.
Findings/conclusions:	While needs differ slightly among different disability groups, eight categories of pre-travel information were found to be essential for all modes of transport: Staff Assistance (the most important), Physical Accessibility of Stops, Physical Accessibility of Vehicles, Help Facilities, Stop Facilities, Timetable & Service Communication Methods, Lighting, Surfaces. Advance accessibility information is generally good for rail services but very limited for other modes. Some aspects can be found by enquiring, e.g. facilities at ferry and bus terminals, whether low-floor buses operate routes; where available it should be published. Data collection and storage should be managed by one body as data aggregation, with Traveline Scotland recommended. Bus stop data should be stored on the National Public Transport Access Node database (NaPTAN) and bus attributes should be added to TransXChange. It is important to improve the service provided to disabled people by national travel information services as soon as possible, as disabled people have critical pre-travel information requirements regarding the accessibility and facilities available on public transport, and lack of this information in advance may lead to uncertainty and act as a barrier to travel.
Strengths/weaknesses:	The report provides valuable guidance and insights into the pre-trip needs of disabled people, how far current information availability meets these or fails to do so, the current state of provision for disabled travellers on Scottish public transport and the practical priorities for addressing gaps in information. The study had only limited engagement with disabled user groups. It gives little attention to the financial costs or institutional barriers which might be met in addressing problems.

END

DOCUMENT DETAILS

Compendium ID: 1021 Date of Entry: 2007-03-23

Article title:	Barriers to modal shift.
Article reference details	Derek Halden Consultancy, (2006). Barriers to modal shift. Scottish Executive - Transport Research Planning Group. 117p
Web Address:	http://www.scotland.gov.uk/Publications/2003/09/18178/26361
Source project (if applicable):	
Contact name:	
Affiliation:	Derek Halden Consultancy
EMail:	
Sponsor(s):	Scottish Executive
Country/Region/City:	Scotland

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☐	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☑

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	The main aim was to identify and examine the barriers preventing car travellers from shifting mode to rail, bus, walk or cycle, or causing them to not undertake the journey. The research sought to define the main parameters accounting for the gap between what is socially desirable for mode choice and current travel behaviour. Information was one factor covered.
Description/method:	The study included two major elements: a literature review; and a survey of travellers. The literature review covered several aspects: components of car dependence; costs and benefits; hard factors; soft factors, including behaviour and information; contextual factors; the complexity of travel choice. From these it assessed the potential bridges to modal shift and the implications for modelling. Accessibility modelling was undertaken for selected areas in Glasgow. Surveys were then undertaken to establish which combinations of factors are relevant to which groups of people, and for what trip purposes; the survey programme involved a telephone survey to define the main constructs that people have about the transport system and the barriers to using public transport, repertory grid completion to allow people to quantify the factors acting as barriers to modal shift for them, focus group discussions to consider broadly the strengths and weaknesses of travelling by each mode, allowing people to identify the most important barriers to modal shift, and a postal survey to quantify the relative importance of the main factors emerging from the focus groups. Discussions were then held with public transport providers in the area.

Findings/conclusions:	The conclusions covered a wide range of factors which form a bridge to modal shift. Among these, in the 'soft' factors, were the inappropriateness of current information (and ticketing) approaches for occasional public transport users. Simpler information which did not require detailed knowledge (e.g. of street names) were needed (in association with more flexible tickets and purchasing). The postal survey, building on assessments from the other survey work, identified information about bus services at bus stops and by telephone or on the internet as a particular barrier. Measures which respondents felt would encourage them to change mode included, for buses, electronic information at bus stops telling if buses are on time, published bus timetables including paper information at bus stops on the scheduled times of buses, and electronic information on buses stating location so that passengers can get off at the right stop. No specific information factors were raised for rail travel.
Strengths/weaknesses:	The study included a range of complementary methods - literature review, modelling, surveys, analysis - and offers valuable insights into the barriers to public transport use, within a clearly defined context. Specific supply of information forms a relatively minor element within its findings. However, these also draw out issues of awareness, or lack of, related to public transport which provide a useful context for considering information needs and issues. The findings did not identify priorities for developing bridges to modal shift.

END

DOCUMENT DETAILS

Compendium ID: 1022 Date of Entry: 2007-03-23

Article title:	Integrated Information and Management System for Traditional and Demand-Responsive Mobility Services in City of Milan, Italy.
Article reference details	Ciccarelli, Diego; Colorni, Alberto; Lu, Alessandro; Morrocchi, Valentina; Rossi, Damiano, (2006). Integrated Information and Management System for Traditional and Demand-Responsive Mobility Services in City of Milan, Italy. Transportation Research Board 85th Annual Meeting. Location: Washington.
Web Address:	
Source project (if applicable):	DREAMS, a project of PRIN 2003 "Infomobilità"
Contact name:	Diego Ciccarelli
Affiliation:	Poliedra - Politecnico di Milano,
EMail:	ciccarelli@poliedra.polimi.it
Sponsor(s):	Italian Ministry of the Environment, the Municipality of Milan, and the Italian Ministry of Education, University and Research (MIUR).
Country/Region/City:	Milan, Italy

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	To present a progress report on DREAMS (Demand Responsive Extended Area Mobility Services), a web-based integrated information and management system for urban transport services, designed specifically for the city of Milan, Italy, intended to connect the demand and supply sides in urban passenger transport.
Description/method:	The paper describes the DREAMS system, its components and purpose. The objectives of the DREAMS system are to enable individuals or groups to organize their trips using modes other than cars, even in areas which are not intensively served by the public transport service, and to improve the effectiveness and competitiveness of public transport through an integrated system based on real-time data management.

Findings/conclusions:	Poor information to customers is identified as one of the major issues in public transport services. DREAMS aims to provide convenient integrated information via the Internet, offering trip advice using the services of all the operations (conventional transport, community transport, taxis) on the DREAMS management system. The scope for changing mode choice forms the reason for allocating substantial efforts to implement a powerful information tool easy to use and access.
Strengths/weaknesses:	The project is of interest in setting out the rationale and form for a comprehensive management and travel tool pulling together all public and community travel providers in a city. However, the systems is at this stage only in development. No assessment of user needs has apparently taken place, nor has there been any other forms of evaluation.

END

DOCUMENT DETAILS

Compendium ID: 1023 Date of Entry: 2007-04-08

Article title:	Usability Testing and Advanced Traveler Information System Websites
Article reference details	Kihl, M. (2006), Usability Testing and Advanced Traveler Information System Websites. Transportation Research Board 85th Annual Meeting. Washington
Web Address:	
Source project (if applicable):	Series Usability Studies of AZ511.com
Contact name:	Kihl Mary R
Affiliation:	Arizona State University
EMail:	Mary.Kihl@asu.edu
Sponsor(s):	Arizona Department of Transportation (ADOT)
Country/Region/City:	Arizona, US

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☑
Content	☑	Research methods	☑
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	this paper reviews and explores usability issues of the evolving AZ511.com travel information website from the perspective of older drivers. In the process described in this work, the website became more responsive to older (and other) drivers.
Description/method:	The project involved two forms of interaction with older drivers: first a series of focus groups and second a set of usability engineering series. 61 drivers over 65 years old were involved in 11 different focus groups conducted in 2003-2004. Usability Studies: Three groups of 5-6 older drivers assessed the evolving travel information website in 3 different sessions. Modifications made to the website during the six month period of these studies. All drivers were given scenarios and told to use the ATIS site for pre-trip planning. At the end of each session all the drivers participated in a group discussion and offered their perspectives on aspects of the site that seemed to work well and aspects that were more challenging.
Findings/conclusions:	1) Since the availability of the ATIS site had not been widely publicized before it was fully operated, none of the focus group participants had been aware of it before the session. 2) Although the focus groups identified interest and potential, the participants could not assist in refining the ATIS site to make it fully usable. 3) Heuristic studies: the presentation and the navigation changed considerably between sessions (navigation difficulties in early session; pleased with the modifications introduced in the later sessions) 4) Heuristic studies: due to problematic interface design, many of the features were 'hidden' and not

	obvious to the user 5) older drivers had trouble in identifying objects due to colour contrast 6) older drivers had difficulties in positioning the cursor. 7) none of the older drivers were successful in completing one of the scenarios.
Strengths/weaknesses:	Strengths: 1) the findings help to validate the literature noting problems with visual acuity and fine motor skills associated with age and suggested ways to compensate for these physical changes. 2) It may provide some explanation to the general finding that elderly population tends to use traveller information less often than others (see for example item 1007 in this compendium). 3) The relatively large number of focus group sessions permitted cross-validation and underscoring the areas of interest to older drivers. 4) Although a specific ATIS was explored, many of the findings may be relevant to other travel information systems, sharing similar features or design characteristics. Weaknesses: 1) None of the focus group participants had been aware of it before the session (see above); thus the study does not capture dynamic aspects of usability in providing the travel information, such as learning, adaptation and habitual behaviour. 2) The focus group participants were shown slides of the initial site design, and were unable to make specific observations about the site. 3) Many relevant usability aspects have not been explored; for example, cognitive aspects such as learning and memorability have not been studied.

END

DOCUMENT DETAILS

Compendium ID: 1024 Date of Entry: 2007-04-08

Article title:	Determinants of Route Choice and Value of Traveler Information: Field Experiment
Article reference details	Zhang, L., Levinson, D. M. (2006), Determinants of Route Choice and Value of Traveler Information: Field Experiment. Transportation Research Board 85th Annual Meeting, Washington
Web Address:	
Source project (if applicable):	
Contact name:	Zhang Lei
Affiliation:	University of Minnesota
EMail:	zhan0294@tc.umn.edu
Sponsor(s):	
Country/Region/City:	Minnesota

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This paper covers the potential effect of information availability per se on travellers' choice for routes. The benefits of reduction in travel uncertainty when information is provided at the beginning of the trip is measured.
Description/method:	The experiment was designed using both stated preferences survey techniques and field experiment. Five alternative, roughly parallel routes that constitute an important corridor in Twin Cities (Minnesota) were selected. More than 100 drivers, provided with real-time travel information (with different levels of accuracy) participated a GPS-based field study.
Findings/conclusions:	Travellers generally appear to have a very low willingness to pay for acquiring travel information. Results show that travellers are willing to pay up to $1 per trip for pre-trip travel time information. The value for information is higher for commute and event trips and when congestion on the usual route is heavier. Accuracy of travel information is also a crucial factor. Most travellers (70%) prefer that travel information will be provided for free by the public sector.

Strengths/weaknesses:	The combination of survey and field study, the relatively high number of participants (more than 100 drivers), and the accuracy/reliability of revealed-preferences data gathered by GPS techniques, all are important aspects that help to estimate travellers' willingness to pay for travel information. However, the choice situation (pre-trip information, freeway drivers, all participants are university staff) may not suit other travel choice and trip planning situations, and the findings cannot be generalised to wider travel choice situations and behavioural responses to them. The combination of GPS data with pre- and after- experiment surveys seem to be a promising experiment design methodology. However, this paper is mainly oriented on the development of research methodology and techniques, rather than systematic exploring the behavioural aspects of travellers' responses (and willingness for pay) to travel information, therefore provide limited (but still useful) insights on this topic.

END

DOCUMENT DETAILS

Compendium ID: 1025 Date of Entry: 2007-03-15

Article title:	How much information do we need?
Article reference details	Todd, P.M. (2007). How much information do we need? European Journal of Operational Research, 177, 1317-1332
Web Address:	
Source project (if applicable):	
Contact name:	Peter Todd
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EMail:	ptodd@mpib-berlin.mpg.de
Sponsor(s):	
Country/Region/City:	Berlin but article coverage is international

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☑
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This is a review paper. Its purpose it to present and discuss a number of forms of heuristics for decision making (not specifically related to travel decisions). In essence it take the starting point of the traditional view of rational decision making "where individuals should evaluate and combine all available evidence" and where "more information will yield better decisions". It then looks, in contrast, at the concept of bounded rationality which considers how people can "make reasonable decisions given the constraints that they face such as limited time, limited information, and limited computational abilities".
Description/method:	This is a review paper (which includes coverage of many articles also produced by its author). It considers different classes of simple heuristics and provides examples to illustrate the contexts in which such heuristics might apply. It also provides some empirical experimental evidence which allows such heuristics to be compared in terms of their efficacy in decision making.
Findings/conclusions:	Importantly, the paper overall highlights that 'short cut' decision making heuristics that require less information can prove to be of comparable effectiveness when considered alongside an 'unbounded rationality' approach. Two schools of thought are considered - bounded rationality applies in practice because people are 'constrained' and this results in sub-optimal decision making - this school of thought argues that "we would, and should, all be unboundedly rational, if only we could". The second school of thought which is receiving increasing attention is that "people can and often do make good decisions with

	simple rules or heuristics that use little information and process it in quick ways". If the second school of thought holds true then trying to provide people with more and more information may not be appropriate. Our decision making faces two real world constraints - (i) we never face the same situation in its exact form more than once and thus we look to generalise well from past experiences when judging new ones; (ii) there is a 'cost' to the effort of decision making itself so our decision mechanisms must be quick. The recognition heuristic is discussed - this says "that for choosing between two objects on some criterion, when one object is recognised and the other is not, then pick the recognised one". This may have particular relevance for mode choice whether the familiarity of the car may count against public transport. Intriguingly in some domains, "less knowledge can yield more accurate decisions when using the recognition heuristic". The paper highlights that our recognition heuristic can be manipulated (e.g. through advertising) so in some domains it may not be something we can rely upon. The paper refers to mechanisms akin to recognition which concern social learning - i.e. copying the most prevalent behaviour. 'One reason' decision heuristics is a means by which one factor for two available choices is used to make the decision - if two choices have the same factor value then the next factor or cue is used and so on until a decision is reached. The paper looks at other similar heuristics. A study which compared such heuristics against two alternative strategies which weigh and combine all of the available cues is reported to have found that the latter were broadly matched in performance to the former.
Strengths/weaknesses:	As a review paper, the article provides an illuminating overview of decision making and may go some way to suggesting why travel information services are not necessarily used as much as expected and also points to considerations for information service content and design which could make services simpler and more usable for users.

END

DOCUMENT DETAILS

Compendium ID: 1026 Date of Entry: 2007-03-27

Article title:	Use and effects of Advanced Traveller Information Services (ATIS): a review of the literature.
Article reference details	Chorus, G. C., Molin, E. J. E. and Van Wee, B. (2006). Use and effects of Advanced Traveller Information Services (ATIS): a review of the literature. Transport Reviews, 26, 127-149.
Web Address:	
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Sponsor(s):	NWO/Connekt
Country/Region/City:	International coverage

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This paper presents a review of both empirical and conceptual literature regarding the use and effects of Advanced Traveller Information Services (ATIS).
Description/method:	The review looks mostly at academic literature produced in the past 15 years. It focuses on the use of pre- and in-trip information and its effect on travel choices regarding departure time, route, and mode. A behavioural focus is adopted and the author proposes conceptual frameworks regarding the use and effects of travel information.
Findings/conclusions:	Dominant theories on traveller's decision strategies and information use are: maximization (the individual is presumed to behave rationally, finding and choosing the best alternative available), satisficing (the individual is presumed to have a bounded rationality, searching for the first alternative that is good enough), habit execution (the individual does not generate and assess any alternatives), and effort-accuracy trade-off (the individual decides which decision strategy is best based on a trade-off between perceived accuracy and effort). Empirical findings show that awareness of ATIS is higher among professionals, people on a high income, younger persons, car owners, and owners of a bus pass, as well as among control seekers and technologically astute individuals. The latter two types of individuals are also more likely than others to use ATIS, together with people who frequently use mobile phones and Internet. Males, highly educated persons,

	professionals, and people on a high income are also more likely to use ATIS than others. There is a lack of empirical literature about the effects of ATIS on travel choices.
Strengths/weaknesses:	This paper provides a good review of both theoretical and empirical literature concerning the use of travel information and its behavioural effects. However, no distinction is made between travel information sources (such as telephone and online services) in the empirical review of who uses ATIS and their effects on travel choices.

END

DOCUMENT DETAILS

Compendium ID: 1027 Date of Entry: 2007-03-21

Article title:	Why don't more people use advanced traveler information? Evidence from the Seattle area
Article reference details	Peirce, S. and Lappin, J. (2003). Why don't more people use advanced traveler information? Evidence from the Seattle area. TRB 2004 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	Puget Sound Transportation Panel
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Sponsor(s):	
Country/Region/City:	Seattle

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This paper examines two principal questions: Why don't more people seek traveller information? And Why don't more people make changes in response? The paper aims to explore six important factors considered to shed light on the above : regional context, awareness of sources, nature of the trip, information quality, presence of delays and delay information, availability of alternatives.
Description/method:	The Puget Sound Transportation Panel is "repeated in successive waves roughly every two years" and has been since 1989. This paper analyses data from wave 10 of the Panel which included, as part of the 48 hour travel diary, collection of response data about information use per trip made and whether information had changed travel plans.
Findings/conclusions:	The high level finding is that information is sought for only 1 in 10 trips and in turn only 1 in 10 instances of consulting information results in a change to travel. For the study area in question it is suggested that the regional context, or at least changes therein, does not appear to lend itself to increasing levels of information use - congestion is perceived to have eased slightly, employment levels are flat (in relation to work-related travel), technology update has slowed (e.g. "the share of households with internet access at home shot up from 37 percent to 74 percent between 1997 and 2000, but then rose by only one percentage point, to 75 percent, from 2000 to 2003."). In terms of awareness of sources,

	the survey finds that with the exception of TV traffic reports and radio traffic reports, "a majority of the population is still unfamiliar with many of the Seattle region's ATIS offerings". Further to those, only a minority of those saying they are aware of a service have ever used it. Previous research by the authors found that "rates of information acquisition [of information] were markedly higher for: trips of very long distance and/or duration, trips that took place during the morning or afternoon peak periods, and trips whose purpose was arrive-time sensitive". The wave 10 data show a strong correlation between journey duration and a likelihood of consulting some form of travel information (this said, "the diary data show that 41 percent of all the recorded trips took 10 minutes or less, and 70 percent of all trips took 20 minutes or less". Consulting information is more likely for trips in the peak periods: "travelers consulted an information source on 19 percent of their trips that started during the morning peak (6-9am) versus 11 percent for the evening peak (4-7pm) and 10 percent overall. Information is more likely to be consulted for commute trips than for trips in general. In terms of information quality, for those trips where information was consulted, "36 percent of the time the traveler was unable to obtain any information at all about the trip in question." The authors suggest their findings "paint a picture of insufficient quality of travel information, where information is often unavailable, or is insufficiently specific, or is judged to be insufficiently accurate." In terms of presence of delays and delay information, the data revealed that on 53 percent of occasions where information had been consulted there were no delays on the travelers' route. Where there were minor delays people tended not to change their travel. Even where people were consulting information, found delays which they considered serious enough to warrant a change, more than half of the time no change was made with the respondent reporting that they "had no alternative". The authors' concluding point is to emphasise the issue of selectivity for ATIS use - "ATIS is currently something of a niche market, very valuable for certain trips but less useful for the sorts of trips that make up the bulk of daily travel".
Strengths/weaknesses:	The paper provides some useful confirmatory data about the low levels of information use. It is, however, fairly high level in its analysis with little insight into the sorts of information being consulted and the sorts of behaviour change that might occur. No specific mention is made about the modes of travel used for the recorded trips but it appears that the paper is essentially referring to driver information.

END

DOCUMENT DETAILS

Compendium ID: 1028 Date of Entry: 2007-03-21

Article title:	Strategies for Improved Traveler Information
Article reference details	TCRP (2003). Strategies for Improved Traveler Information. Transit Cooperative Research Program Report 92, Transpotation Research Board.
Web Address:	
Source project (if applicable):	
Contact name:	Carol L. Schweiger
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Sponsor(s):	
Country/Region/City:	International

RESEARCH AREAS COVERED

Awareness	☑	Providers	☑
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☑
Content	☑	Research methods	☑
Behaviour	☑	Other	☑
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This is a large scale review report focused upon Transit Travel Information (TTI).
Description/method:	The review covers an examination of research literature and looks at the state of the art in TTI systems and services and considers a number of specific examples in more detail. The report draw heavily upon both north american and western european development and the previous DfT Review of Travel Information relating to Transport Direct is cited several times.
Findings/conclusions:	This 100+ page report is a good overview document of public transport information provision. However, while it offers a lot a descriptive detail about specific TTI initiatives and schemes there is less in the way of depth understanding about the effectiveness of TTI in terms of its levels of use and impacts on behaviour. In its final section it is suggested that four key strategies for improving TTI have emerged from the work: (i) "improving the data that provides the basis for TTI"; (ii) "completely integrating TTI with other traveller information, particularly traffic information for "one-stop" regional information shopping"; (iii) "Providing more customer-focused and personalized information, such as bus stop-level schedules and maps and IVR systems"; and (iv) "providing real-time information using a variety of dissemination media".

Strengths/weaknesses:	In the specific context of this review, this report (a review in itself) does not tend to offer specific new insights or new empirical evidence though it remains useful as a background document.

END

DOCUMENT DETAILS

Compendium ID: 1029 Date of Entry: 2007-03-22

Article title:	Synthesis of customer needs from rural traveler information surveys
Article reference details	Strong, C., Eidswick, J. and Cuelho, E. (2006). Synthesis of customer needs from rural traveler information surveys. TRB 2006 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Western United States

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The paper aims to review six evaluations using travel surveys of rural travel information provision (all carried out by the authors' institution. The results are presented to address to questions - "How do rural travellers receive information (types of information, sources, and perceptions of accuracy and usefulness)?" and "How do rural travellers use the information they receive?"
Description/method:	The paper covers six 'case studies' all involving surveys of highway users (principally motorists) - some relate to a system evaluation and some to a site evaluation.
Findings/conclusions:	By way of introduction the authors note that "surveys of usage of 511, the telephone number designated for traveler information in the United States, show that usage peaks sharply in winter months, when weather challenges are most significant, as opposed to summer months, when traffic volumes are higher". This suggests people are concerned about unpredictable conditions most of all - and for regular routine/local journeys, the experience can still be rendered unpredictable by the weather conditions. Indeed the case studies considered all concern themselves with sites or systems where weather and/or awkward road infrastructure are the motivations for the information provision it seems. It is therefore not surprising that the authors discover from their review that " Overall the results indicated that road and weather condition information was most important, followed by construction information." Surveys asked what information resources people normally used and broadcast media (television and commercial radio) were the dominant methods

	used for road and weather conditions information. All technologies were found to receive favourable ratings for accuracy and usefulness with a slight indication of usefulness being rated more highly than accuracy (which it is suggested may be related to many users being local and thus familiar with the service). The authors do also note that "it is important to note that these accuracy and usefulness ratings are for technologies which generally supplement existing roadway information features". The paper notes that "none of the surveys studied sought to link the perceived value of the traveler information provided with the associated cost."
Strengths/weaknesses:	The paper is a straightforward summary of six case studies. Its findings are governed very much by the nature of these case studies and thus the importance of weather and roadworks information is not surprising. The paper offers a rather limited level of detail but one or two interesting interpretations.

END

DOCUMENT DETAILS

Compendium ID: 1030 Date of Entry: 2007-03-21

Article title:	Travel Time Savings from a Traveler Information Website
Article reference details	Lowry, M. B. and Rutherford, G. S. (2005). Travel time savings from a traveler information website. TRB 2006 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Washington

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The paper looks to examine the extent of travel time savings for two theoretical commuters where one makes use of predictive travel information for route choice and the other habitual uses the same route and ignores information.
Description/method:	The study associates with the notion of field studies involving yoked drivers - "in which two drivers were given the task to travel from point A to point B, one driver with access to traveller information and the other without. It seems that such tests "typically reveal no significant travel time savings between the ATIS driver and the non-ATIS driver." This study did not involve real drivers. It is based on two WSDOT algorithms - one which predicts point to point travel times based on current conditions (from loop detector data) and historic data - this is used on the actual WSDOT website which predicts commute times; the other uses archived loop detector data to calculate (ex post facto) the actual travel times. The simulation choose a specific commute with two route options. Data were collected for departures every five minutes between 6am and 9pm for every weekday in 2003. In each case, the 'control' commuter was assumed to take the same route (the 'habitual' route) every time whereas the ATIS commuter would act upon the predicted travel time in choosing which route to use. The two routes were each approximately 10 miles and the paper states that "The I-90 route is historically 1 minute faster than the SR-520 route."

Findings/conclusions:	The results find that the ATIS commuter "exhibits statistically significant travel time savings for departures during the morning and evening peak periods". However, "the average time savings never rises above one minute". The authors concluded that "Although the analysis demonstrated statistically significant differences in travel time for the ATIS user, the question of practical significance is not as conclusive. Average savings of one minute or less may not be enough to entice a commuter to use the service."
Strengths/weaknesses:	The paper represents a simple experiment. However, there is little or no discussion of the robustness or generalisability of its results. The outcome seems surely related to the predictive accuracy of the journey time algorithm and if this were to change then the average savings to the ATIS user would change.

END

DOCUMENT DETAILS

Compendium ID: 1031 Date of Entry: 2007-03-21

Article title:	Observing the making of travel choices under uncertainty and information: validation of a travel simulator
Article reference details	Chorus, C. et al (2006). Observing the making of travel choices under uncertainty and information: validation of a travel simulator. TRB 2006 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	PITA program
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Sponsor(s):	
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The paper introduces a computer based travel simulator and seeks to report on a validation process for the simulator which is intended as a gateway to subsequent analysis of data gathered from participants who use the simulator.
Description/method:	The premise for the research is that it is necessary to get insights (based on empirical data if possible) into the probable use and effects of next generation ATIS before they are developed for and introduced to the market. The simulator which has been designed is considered uniquely suited to this requirement - it is "able to provide participants with multimodal transport networks with in-trip travel choice adaptation possibilities, as well as with an information service module that provide a variety and advanced types of information, both asked for and on its own initiative. The paper introduces this simulator and describes how it operates and is used - its aim it to combine the advantages of stated preference approaches and revealed preference approaches. The experimental environment is entirely hypothetical and controlled. Participants are incentivised to take part. They are also instructed and incentivised to behave 'naturally' during the experiments and in their decision-making and not to treat it as a game. The ideal is that "observed choices made within the simulator resemble those made in real life under comparable conditions". However, it is noted that "no actual choices for any comparable situation is available, or can be easily made available." Therefore the authors determine that they "are forced to adopt a less strict definition of validation: TSL* may be considered a valid

	research tool when it is established that observed choices made within TSL* resemble our intuitions concerning what kind of choices would be made in real life under comparable conditions."
Findings/conclusions:	The paper proceeds to set out a number of formulated 'intuitions' which are then tested for validity by analysis of data collected from participants. The paper concludes that the simulation "appears to have a very acceptable level of face validity."
Strengths/weaknesses:	The simulation tool itself appears very interesting although the purpose of the paper is not to present analysis of its use as such. The paper inevitably wrestles with the fundamentally difficult question - can we really use such a simulation to test out possible future ATIS and understand how users will respond. The paper confronts this issue well and openly although each reader will take their own view on whether it is sufficiently realistic as a tool to be widely used in the way envisaged.

END

DOCUMENT DETAILS

Compendium ID: 1032 Date of Entry: 2007-03-22

Article title:	Driver response to variable message sign information in London
Article reference details	Chatterjee, K., Hounsell, N.B., Firmin, P.E. and Bonsall, P.W. (2002). Driver response to variable message sign information in London. Transportation Research C, 10, 149-169.
Web Address:	
Source project (if applicable):	CLEOPATRA
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Sponsor(s):	EU
Country/Region/City:	London and Southampton

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This study "sought to obtain a better understanding of individual driver's attitudes and responses to VMS [in London] quantifying these where possible. The paper reviews previous approaches to evaluating driver response to VMS. Its focus then is on the use of VMS to warn drivers of unexpected incidents.
Description/method:	The approach reported in the paper concerned three stages (focused on the same routes in all cases) : A survey of drivers' attitudes to VMS in London; a stated response survey; and an observed responses survey (based on two signs advising of roadworks.
Findings/conclusions:	The paper's introduction notes that further to an installation of 45 VMS in London between 1994 and 1999 and consideration of further installations, there are two important questions that remain to be answered - "what are the impacts of VMS? And, how can VMS be used more effectively?". The paper notes that "A detailed analysis of incidents occurring in one part of London indicated that there are approximately three unexpected incidents per day relevant to each sign with a third of these involving very long delays or major disruption." The paper's review highlights some limited evidence of interview surveys in Paris and the Forth Estuary in Scotland. It goes on to consider network monitoring as a means of assessing effects of VMS on diversion but notes a number of limitations of using questionnaire surveys or network monitoring: information may relate to an abnormal or even unique event, normal traffic variability, multiple diversion opportunities and

	transferability of results between sites. The review goes on to consider a series of stated preference studies and the use of driving simulators with the latter being more representative or real behaviour but expensive. The aim of such studies has pointed towards the development of driver behaviour rules for VMS being included in traffic network models. However, as the authors note: "It is clear that if a traffic assignment model is to provide an effective method of studying VMS impacts then it is essential that the driver response logic which reflects true driver behaviour is included internally within the model". The stated response survey found that 18% of drivers "said they would divert immediately in response to unexpected congestion." Analysis and statistical models were developed from the results. The observed response survey found that only 33% (63) of drivers saw the VMS displaying the immediate warning information. Only two of the drivers who saw the VMS said they diverted from the route. The authors conclude that along with evidence from other studies, their own results reveal that "out-turn behaviour is more conservative than the stated intentions" and they conclude that "models based on stated-intention questionnaires were not as successful as we would have wished". Ironically when the same models were tested on travel diary survey results for VMS in Southampton they were found to be a better predictor of individual behaviour than in London.
Strengths/weaknesses:	Although the study included a low response rate for the stated response survey (12.3%) it seems to have been conducted systematically and thoroughly and the paper reports well the methodological process, assumptions and challenges. Nevertheless, the general message from the paper seems to be that it remains methodologically very challenging to properly understand (and in turn predict) the behaviour of drivers in response to VMS. Further, it has revealed the low level of 'awareness' of the signs or at least the messages being displayed - i.e. most drivers did not even remember seeing the sign, let alone processing its information.

END

DOCUMENT DETAILS

Compendium ID: 1033 Date of Entry: 2007-03-26

Article title:	The value of integrated multimodal traveller information and its potential contribution to modal change.
Article reference details	Kenyon, S.and Lyons, G. (2003). The value of integrated multimodal traveller information and its potential contribution to modal change. Transportation Research F, 6, 1-21.
Web Address:	
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Sponsor(s):	UK Highways Agency
Country/Region/City:	England

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	The paper tests the hypothesis to what extent the provision of Integrated Multimodal Traveller Information (IMTI) might encourage people to use such information and change their modal choice as a result of such information use.
Description/method:	Six focus groups were conducted across England, representing an urban/rural mix, various age groups (18 to 60 years old and above), and car as well as public transport users. The discussions first tackled current modal choice of participants, their use of travel information, and its effect on their travel behaviour. Visual aids were then used in the discussion to represent three forms of IMTI (varying in the detail of information given) about a middle-distance journey to a location the participants were likely to be familiar with.
Findings/conclusions:	The results show that participants are highly habitual in both their trip types and modal choices, regardless if they are car or public transport users. Also, they are neither aware of travel information sources, nor of the types of information available from them. Not surprisingly, participants perceived accessing information as difficult and time consuming. They were not aware of their own information use, especially in the case of information for travel by car. Reactions to the IMTI visual aids differed between car drivers, who expressed scepticism, and public transport users, who showed a higher degree of interest. A perceived threat to the right to travel by car might be a barrier to the use of IMTI, as well

	as a lack of trust in the information provided. Not only financial cost and journey duration might affect modal choice, but also information related to convenience and comfort. This indicates that habitual and psychological barriers to non-car modes might be overcome. The majority of the participants would be likely to consult IMTI when the decision to consider a modal choice had been made. The authors conclude that the likely demand for IMTI is uncertain, and that the information used may not necessarily promote a modal shift towards public transport.
Strengths/weaknesses:	Confronting participants with various information options might lead to the socially desirable answer that they would indeed use the information if it would be available to them. The authors recognize the limitations concerning the repeated exposure of participants to information. Despite the carefully varied composition of the focus groups, the authors reflect relatively little on any differences that occurred between those groups. Nevertheless, this study clearly shows how habitual people are likely to be in their modal choice.

END

DOCUMENT DETAILS

Compendium ID: 1034 Date of Entry: 2007-06-02

Article title:	An Experimental Study into the Impact of Local Accident Information on Driver's Route Planning Behaviour
Article reference details	Zheng, Y., Johnson, C.W., McGee, M. R. and Gray, P. D. (2006) An Experimental Study into the Impact of Local Accident Information on Driver's Route Planning Behaviour, unpublished
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Glasgow and Manchester

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To explore if the provision of local accident information has an impact on driver behaviour. The experimental design focused on route choices. Hypothesis 1: Drivers' preferences between several different routes would be affected by the provision of accident information on routes that they are familiar with. Hypothesis 2: Drivers' preferences between several different routes would be affected by the provision of accident information on routes that they are unfamiliar with.
Description/method:	Taxi drivers were asked to rank a number of alternate routes by order of preference. In the first condition, the subjects were only provided with information that is similar to a conventional route planner. This included an indication of the average time taken to complete each section of the journey. A second condition asked them to repeat the same task over a different journey except that this time they were also provided with information about previous accidents on each stage of the various competing routes. The test was repeated using two different route-planning tasks. One was based in the centre of Glasgow and hence was familiar to the drivers. The other was set in central Manchester.
Findings/conclusions:	information about previous accidents can encourage two cohorts of taxi drivers to change their routes both for areas in which they work and for journeys on roads with which they are less familiar [both hypotheses were supported].

Strengths/weaknesses:	Some aspects are not explored: the dynamic characteristics of travel choice behaviour and use of information (learning, habits); exploring long-distance and inter-city travel behaviour; taxi-drivers' travel behaviour may not reflect many dimensions of travel behaviour by non-taxi drivers; the format in which accident information is presented may have effect on the route choice. A natural extension of many of the ideas discussed in this paper could be to integrate local accident information into travel information systems (web-based, in-car)

END

DOCUMENT DETAILS

Compendium ID: 1035 Date of Entry: 2007-04-03

Article title:	Understanding and predicting traveler response to information: a literature review.
Article reference details	Lappin, J. and Bottom, J. (2001). Understanding and predicting traveler response to information: a literature review. U.S. Department of Transportation, December.
Web Address:	
Source project (if applicable):	
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EMail:	lappin@volpe.dot.gov
Sponsor(s):	U.S. Department of Transportation
Country/Region/City:	International coverage

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This report gives an overview of the literature published as of mid-2001 on the topic of traveller response to real-time information at the individual and network levels.
Description/method:	The review is structured as follows: 1. potential users of ATIS, 2. user response to travel information, 3. users' preferences and willingness to pay for travel information, 4. discussion of the dynamic effects of day-to-day learning behaviour, 5. various topics concerning data collection, analysis, and modelling of traveller response.
Findings/conclusions:	The authors conclude that very little quantitative information regarding travel responses to real-time information is available. The available information tends to be highly specific to particular situations; very few quantitative conclusions of a generally applicable nature can yet be drawn regarding user responses to ATIS. The current state of knowledge provides at best general qualitative conclusions.
Strengths/weaknesses:	The report provides a detailed discussion of literature concerning real time information up to 2001. However, a concluding section that outlines the main issues is lacking which makes it difficult to get a feel for the state of the art.

END

DOCUMENT DETAILS

Compendium ID: 1036A Date of Entry: 2007-06-04

Article title:	MR07 Incorporating cost, reliability, and other travel factors into journey planning. Report stage one.
Article reference details	SRA (2004). MR07 Incorporating cost, reliability, and other travel factors into journey planning. Report stage one. Social Research Associates. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr07-1.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	Social Research Associates
EMail:	office@sraltd.co.uk
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report represents the first stage of a research about travel planning choice processes. Its objective is to develop a logical representation of travel factors and decision rules reflective of travel choices and applicable to a journey planner service.
Description/method:	Eight decision models that vary in how rational they presume individuals to behave are described and their strengths and weaknesses are discussed. In the appendix, an overview of factors influencing travel choice is provided.
Findings/conclusions:	Discrete choice theory is recognized as being useful in clarifying decision-making, but other perspectives need to be considered as well. Rational models and discrete choice theory represent the most rational models of decision-making. Four other decision models (labelled 'problem solving', 'mixed scanning', 'steering', and 'assumptive worlds') have a mixed level of rationality, whereas two other decision models ('incrementalism' and 'cognitive dissonance') have a low level of rationality. The challenge for Transport Direct is to enable interrogation by travellers, each adhering to a choice process that best matches one of the eight models.
Strengths/weaknesses:	This report provides a succinct overview of various decision-making theories.

END

DOCUMENT DETAILS

Compendium ID: 1036B Date of Entry: 2007-04-02

Article title:	How People Choose. Stage 2b. MR07 Stage One Project Report to the Transport Direct Programme.
Article reference details	SRA (2005). How People Choose. Stage 2b. MR07 Stage One Project Report to the Transport Direct Programme. Social Research Associates. Department for Transport, January.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr07-2.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	Social Research Associates
EMail:	office@sraltd.co.uk
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report represents the second stage of a research about travel planning choice processes. More specifically, the objectives were: 1. to test the validity of the assumption that everyone makes use of all the decision making models from time to time, 2. to establish which decision making models occur most frequently and which models are used hardly ever at all, 3. to see if there is any common thread to the use of a particular decision model (e.g., a model preferred by a particular socio economic group or for particular journey purposes).
Description/method:	Across the UK, 406 face-to-face interviews were conducted, varying from 20 to 60 minutes in length. The results were analysed according to choice style: Active, Passive, and Constrained. Some characteristics of an Active choice style are: carefully weighs up all the mode options, checks information last minute before travelling, carries trip details. Someone with a Passive choice style would: ask a friend about 'the best way of getting there', rely strongly on GPS navigation if driving, rely strongly on a route planner before setting out. People with a Constrained choice style experience overriding personal circumstances and needs that affect their trip (e.g., lots of luggage, time constraints); they have strong views about convenience; they take the usual mode through habit.

Findings/conclusions:	One thirds of the respondents chose Systematic Search ("I juggled several considerations before deciding how to travel") when they were asked about how they had planned a recent journey. Overall, there are no significant differences between type of decision model and sociodemographic characteristics. More than half (58%) of the respondents considered more than one modal option when planning a journey. The information needed to make their choices were mainly journey times, route details, and cost. Online travel information was the most common source of information. More than a quarter of the respondents has an Active choice model. 73 out of 406 respondents had used more than one choice style. The authors conclude that in the sample most people made conscious efforts to plan their journeys. Although many respondents were willing to consider alternative modes, they often ended up deciding that convenience and practical reasons outweighed time and cost. Car users were more likely to resort to alternative routes than journey time changes to avoid congestion. Public transport users were largely unaware of the opportunities for changing routes or journey times to improve journey options. Even when trips were planned a long time ahead, people tended to keep on checking that things had not changed, which has implications for registering for feedback and updates). There is considerable demand for information about what to do when things go wrong during journeys.
Strengths/weaknesses:	This report pays attention to the way people make travel decisions. The distinction between Active, Passive, and Constrained choice styles seems arbitrary and is not well defined. Also, using only one proposition to represent a certain decision-making strategy questions the validity of the results. Moreover, the authors provide little interpretation of their findings.

END

DOCUMENT DETAILS

Compendium ID: 1036C Date of Entry: 2007-06-04

Article title:	Transport Direct Market Research Stage 3 Validation
Article reference details	SRA (2005). Transport Direct Market Research Stage 3 Validation. Social Research Associates . Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr07-3.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	Social Research Associates
EMail:	office@sraltd.co.uk
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report represents the final stage of a research about travel planning choice processes. Its objective is to validate the results that have been obtained in the second part of the research where people were interviewed about their choice styles.
Description/method:	Throughout Great Britain, 150 people were interviewed. Interviewees were asked to describe two journeys: the first being a journey they had recently made and the second a journey they were planning to make in the near future (in both cases within about two months). It was specified that the journeys should be non-local, in the UK, and of at least 50 miles or more. The interview started with the journey already made and then went on to the second planned journey. In both cases details of origin, destination, purpose, mode, and travel party was recorded resulting in details of 300 journeys overall. The sample is evenly distributed across gender and has a broad age range. Nearly two thirds (64%) of the respondents usually travels by car. Three quarters of the sample has Internet access at home. Two thirds of all journeys were conducted for leisure or shopping and a quarter for work purposes. The main journey mode was by car (63%), followed by train (27%). The majority of the respondents (62%) was travelling with others.

Findings/conclusions:	The report found evidence that when planning a journey, decision-making behaviour is influenced by past experience and that the way in which information is taken into account does not follow any set pattern. Also, it seems that people break down their travel choices into manageable tasks and in order to do this they typically first set their main travel mode (e.g., car, train). The majority (90%) of respondents started with a mode choice (64% only one mode, 26% more than one mode). One fifth of the sample had more than one choice style. The Constrained choice style was most often represented in recent journeys, whereas the Active choice style was most often apparent in future journeys. Only 5% of the sample had a Passive choice style (for either recently made or future journeys). The most common types of information sought were: arrival/departure times, total journey time, and routes. Finding information via the Internet was most popular, followed by checking printed material, and ringing an enquiries line. Cross tabulations of choice style by sociodemographic characteristics did not reveal any differences.
Strengths/weaknesses:	This research seems to stand on its own, rather than being a validation of earlier research. Nevertheless, it contains interesting findings.

END

DOCUMENT DETAILS

Compendium ID: 1037 Date of Entry: 2007-04-02

Article title:	A longitudinal analysis of awareness and use for advanced traveler information systems. advanced traveler information systems.
Article reference details	Goulias, K. G., Kim, T., and Pribyl, O. (2004) A longitudinal analysis of awareness and use for advanced traveler information systems. TRB 2004 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	Mid-Atlantic Universities Transportation Center, Pennsylvania State University
Country/Region/City:	Puget Sound region, Seattle, US

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☑
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This paper presents an analysis of the relationship among ownership of telecommunication technologies, awareness of travel information, and use of travel information.
Description/method:	Data from the household panel survey Puget Sound Transportation Panel (PSTP) has been used from the period 1997 to 2000. In PSTP a household questionnaire and a two-day travel diary are administered on essentially the same households and their members repeatedly over time.
Findings/conclusions:	The model for Internet is best explained compared to the other media sources of travel information. Households with a higher frequency of public transport use than other households are more likely to be aware of travel information on the Internet. Income does not seem to play a significant role in awareness. Older individuals are less likely to be aware of online travel information, whereas professionals are more likely to be aware of this. Ownership and availability of computers and Internet at home and work have a strong positive effect on information awareness. Mobile communication technologies have a similar effect on awareness. As the awareness of ATIS services on the Internet increases the frequency of using TV decreases, which indicates a potential substitution between these two media types as a travel information service. The frequency of information use is

	influenced by awareness, with a complementary relationship between television, radio, and telephone. The authors conclude that changes in the social and demographic situations of households have significant effects on awareness about ATIS on the Internet. The potential for change in awareness about other media is less clear.
Strengths/weaknesses:	This paper presents empirical data over time concerning ICT-use and awareness of travel information and frequency of information use. However, since the findings reported in this paper are based on panel data from 1997 to 2000, the figures regarding ICT-use are probably not accurate any longer. Also, the situation concerning awareness and use of travel information might have changed.

END

DOCUMENT DETAILS

Compendium ID: 1038 Date of Entry: 2007-03-27

Article title:	Contribution made by Traveline Scotland to modal shift.
Article reference details	MORI (2006). Contribution made by Traveline Scotland to modal shift, Scottish Executive Social Research.
Web Address:	http://www.scotland.gov.uk/Resource/Doc/139659/0034503.pdf
Source project (if applicable):	
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Affiliation:	MORI Scotland
EMail:	Steven.Hope@ipsos-mori.com
Sponsor(s):	Scottish Executive Social Research
Country/Region/City:	Scotland

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report investigates to what extent and how Traveline Scotland has contributed to modal shift in Scotland.
Description/method:	A telephone survey and two focus groups were conducted. The sample of the telephone survey consisted of people who had used Traveline Scotland either by phone or online, who had participated in the Scottish Household Survey in either 2004 or 2005, and who had given permission to be recontacted. The response rate was 29% and the telephone survey was conducted in April 2005, interviewing 223 respondents (66% female). The focus groups were conducted in May 2005, in Edinburgh and Glasgow. Each group contained a mix of males and females who were all frequent users of Traveline Scotland.
Findings/conclusions:	Traveline Scotland users who have been surveyed are more likely than the population as a whole to be women, aged 25-44, employed, on a high income, and living in urban areas. For all journey types public transport use increased and car use decreased after contacting Traveline Scotland. Information was mostly used for going to work or school and visiting family and friends, but also for longer, irregular, or one-off journeys. Slightly more than half (56%) of respondents preferred to obtain travel information online. A higher proportion of females than males preferred the telephone service. The majority of respondents (88%) contacted Traveline Scotland for times for a specific route. The authors conclude that Traveline Scotland seems to reinforce public transport decisions rather than bring them about.

Strengths/weaknesses:	This report gives a good description of the actual use of travel information. However, a more careful interpretation of the results is needed, given the methodology that has been used. The authors' conclusion that Traveline Scotland contributes to a modal shift is not clearly supported, since it is based on a very small number of respondents (less than 60; one comparison only involved around 30 respondents). Moreover, the before and after measurement does not contain the same number of respondents, which raises questions about the mode choice of the rest of the respondents.

END

DOCUMENT DETAILS

Compendium ID: 1040 Date of Entry: 2007-04-02

Article title:	Getting There & Away. The role of travel information in recreational day trips, with a specific focus on the mode and destination choice.
Article reference details	Van der Horst, R. (2006). Getting There & Away. The role of travel information in recreational day trips, with a specific focus on the mode and destination choice. PhD Thesis. Utrecht University, Utrecht, the Netherlands.
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Source project (if applicable):	
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Sponsor(s):	Urban and Regional research centre Utrecht, TNO Mobility and Logistics
Country/Region/City:	The Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☑

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The overall aim of this PhD thesis is to provide insight into the role of travel information in recreational trips, particularly related to mode and destination choice, and to investigate the implications for transport policy. Four research questions are distinguished: 1A. Which combination of decision-making theories most adequately describes the decision-making process underlying recreational mode and destination choice? 1B. Which aspects can be identified that describe the role of travel information in this process? 2. What are the key external factors that affect the decision-making process for mode and destination choice, and how do they affect the role of travel information? 3. What is the actual information search behaviour, which information is used in the mode and destination choice and what is the impact on travel behaviour? 4. What are the implications of the role of travel information on the individual level for the actual deployment of travel information as a policy instrument?
Description/method:	Trips to theme parks are studied. From June to August 2004 an online survey was advertised on various well-known Dutch websites, including travel information sites and theme park sites, as well as non-related web sites. Respondents were also approached via an email list. In total, 1794 respondents filled out the survey. Additionally, six in-depth interviews with key figures in the transport policy environment were conducted in February 2006.

Findings/conclusions:	The results show that 69% of the respondents used the car to travel to theme parks versus 22% that used public transport. Two-third of the sample used information related to the destination (e.g., entrance fee, attractions in the park), while half of the sample searched for information on their preferred or selected transport mode. Respondents who considered a mode alternative (16%) or a destination alternative (15%) for their theme park visit had a higher need for travel information compared to those without an alternative. Travellers who have previously visited a theme park or who visit theme parks frequently use less destination-related information. However, these experienced travellers have similar information needs for mode choice compared with inexperienced travellers Habitual mode choice does limit the chance that an alternative transport mode is considered; however, the use of travel information is not affected by habitual mode choice. Also, habitual public transport users use more travel information than travellers without a habitual transport mode. In general, public transport users use more travel information than car travellers.
Strengths/weaknesses:	This thesis focuses on recreational trips, which comprise only a specific minority of daily travel. Nevertheless, it provides a valuable insight into the role of travel information in the decision-making process concerning mode and destination, supported by empirical data on the effect of travel information on such choices.

END

DOCUMENT DETAILS

Compendium ID: 1041 Date of Entry: 2007-03-22

Article title:	Los Angeles and Seattle: a comparative analysis of customer response to online traffic information
Article reference details	Petrella, M. and Lappin, J. (2004). Los Angeles and Seattle: a comparative analysis of customer response to online traffic information. TRB 2004 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	
Contact name:	Margaret Petrella
Affiliation:	US Department of Transportation
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Sponsor(s):	Federal Highway Administration, Southern California Association of Governments, Washington State Department of Transportation
Country/Region/City:	US, Los Angeles and Seattle regions

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This study seeks to compare the profile of users of online traffic information in the Los Angeles and Seattle regions, as well as their usage patterns and satisfaction. In LA the websites researched are Travel Advisory News Network (TANN) and SmarTraveler, while in Seattle the Washington State Department of Transportation (WSDOT) traffic conditions website was studied.
Description/method:	Data were collected through online surveys that were advertised with banners on the researched traffic websites. Many of the same questions were asked across both surveys, which took approximately twenty minutes to complete. In Los Angeles, the survey was advertised from January to March 2002, collecting 336 responses in total, while in Seattle 456 surveys were completed from April through May 2003.

Findings/conclusions:	The results show that across the two regions the sociodemographic profile of users of online traffic information is similar: male, between 26 and 45 years old, highly educated, on a high income, and frequent ICT users. Also, the most frequent users are those exposed to the greatest amount of congestion and volatility in traffic conditions. Online traffic information is primarily used for commute trips and to a lesser degree for trips to the airport, vacation, or weekend trips. Usage patterns are similar across both regions, with greater use of online traffic information for the afternoon commute compared to the morning commute. Residents of Los Angeles are less satisfied with their online traffic information compared to the residents of Seattle. The authors speculate that this might be due to the greater congestion and longer commutes in Los Angeles. Also, the Seattle traffic website is more frequently updated than the Los Angeles one. In both regions, respondents indicated they would value enhancements in the basic quality of online traffic information, such as increased coverage of arterials, filling in the gaps in coverage, more precise incident information, and the posing of speed data.
Strengths/weaknesses:	The merits of this study are that a comparison has been made of actual behaviour of users of various traffic websites, including not only sociodemographics, but also attitudes and geographical location. However, an important drawback is that only descriptive methods of analysis have been used. Therefore, it is not clear what the relative importance is of the factors studied for the explanation of online traffic information use.

END

DOCUMENT DETAILS

Compendium ID: 1042 Date of Entry: 2007-04-04

Article title:	Acquisition of traveler information and its effect on travel choices: evidence from a Seattle-area travel diary survey.
Article reference details	Peirce, S., and Lappin, J. (2003). Acquisition of traveler information and its effect on travel choices: evidence from a Seattle-area travel diary survey. Joint Program Office for Intelligent Transportation Systems.
Web Address:	http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13813_files/13813.pdf
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Sponsor(s):	Federal Highway Administration
Country/Region/City:	Seattle-area, US

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	The paper analyzes the use of travel information sources and examines the impacts of information acquisition on travel behaviour.
Description/method:	Data was used from an ongoing panel survey about household regional travel patterns in the Seattle-area. In 2000, 1,730 households (3,262 individuals) filled out a two-day travel diary (in total 25,688 trips) which included an extension about the travel information sources consulted on each trip, and a questionnaire about awareness of ATIS sources.
Findings/conclusions:	Only 3 per cent of respondents' recorded trip segments involved information usage, with radio traffic reports the most common source. The decision to seek information does not seem to be strongly influenced by sex or income, but is correlated with employment status, internet usage, and experience with congestion. Trip characteristics are also influential, with travellers much more prone to seek information where (1) information is likely to be available for the route or mode in question, (2) the trip is arrival-time sensitive, and (3) there is a great deal of variability or uncertainty about the travel time. Information acquisition rarely leads to a shift in travel modes. Changes in route are more common than changes in departure time, and these changes are not strongly influenced by personal characteristics such as gender. The most common response is to make no travel-related change at all in response to the information received, suggesting that many

	travellers may be seeking "peace of mind" benefits.
Strengths/weaknesses:	This paper provides useful empirical data on travel information use.

END

DOCUMENT DETAILS

Compendium ID: 1043 Date of Entry: 2007-04-03

Article title:	Travelers' need for information: an empirical study into the role of knowledge.
Article reference details	Chorus, C., Molin, E., Timmermans, H. J. P., Arentze, T., and Van Wee, B. (2006) Travelers' need for information: an empirical study into the role of knowledge. TRB 2006 Annual Meeting CD-ROM.
Web Address:	
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Sponsor(s):	NWO/Connekt
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This paper investigates travellers' need for travel information by looking at the determinants of travellers' knowledge levels. It distinguishes between the need for information among car drivers and public transport users, and addresses the potential of information services to fulfil this need.
Description/method:	A web survey was filled out by 488 participants in February 2005 in the Netherlands. Participants were recruited via email lists of respondents who had participated before in academic research (mainly students) and via emails sent to friends of the first author, inviting them to pass on the survey to their friends.
Findings/conclusions:	Travellers' knowledge levels are influenced by various factors. Destination familiarity positively affects perceived resourcefulness (operationalised as one's perceived awareness of alternative routes for a given mode and destination) and perceived reliability of estimated trip characteristics (such as travel times and costs). Level of experience with a given mode is found to be of far lesser importance. Perceived lack of resourcefulness and of reliable trip-related estimates trigger a need for information among travellers. A travel information paradox seems to exist in two ways: 1. exactly in those moments where travel time estimates are needed most among travellers, travel time information is perceived as particularly unreliable; 2. when evaluating the reliability of information services' travel time estimates in general, substantially higher standards are applied than

	when evaluating the travel time reliability of the travel alternatives themselves. This paradox means that travel information services in general will have a hard time fulfilling traveller's needs for reliable travel time estimates. However, incidental congestion or delays and trips to new destinations form an exception to this paradox. Notable differences between the knowledge levels of car drivers and public transport users were found, depending on trip circumstances and characteristics.
Strengths/weaknesses:	The methods that have been used to recruit participants have lead to a biased sample towards highly educated and young people. Moreover, the examples of the operationalisations that have been given of the behavioural construct tend to be very general, making them difficult to answer. Therefore, the results must be carefully interpreted. Nevertheless, the paper reports interesting findings about a potential travel information paradox that might be of importance to travel information service providers.

END

DOCUMENT DETAILS

Compendium ID: 1044 Date of Entry: 2007-03-27

Article title:	The value of travel information: Decision strategy-specific conceptualizations and numerical examples.
Article reference details	Chorus, G. C., Arentze, T. A., Molin, E. J. E., Timmermans, H. J. P., and Van Wee, B. (2006). The value of travel information: Decision strategy-specific conceptualizations and numerical examples. Transportation Research B, 40, 504-519.
Web Address:	
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Sponsor(s):	NWO/Connekt
Country/Region/City:	The Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	The paper derives conceptual and mathematical models of the value of travel information.
Description/method:	Conceptual and mathematical models of the value of travel information are derived. Applying notions of search-theory and Bayesian updating of perception, and integrating these in a utilitarian framework, measures for the perceived information value are developed that are consistent with both satisficing and maximizing choice behaviour. The models take into account information use for generating new alternatives and for assessing known alternatives. Numerical examples simulate the perceived value of information for different knowledge levels of the individual and for different levels of reliability of the information. The following highly simplified travel situation served as a base case for the numerical examples provided: a car-driver knows of two routes that may take him to his destination, evaluating them on travel times only. He heard of the existence of a third route, though he does not know it. The traveller has to attend an appointment that starts after one hour.

Findings/conclusions:	Maximizing and satisficing behaviour can both be represented by the concept of the minimization of expected regret. The perceived value of travel information is defined as the perceived potential of the information to reduce the expected regret that is induced in a choice situation. The numerical examples show that information about unknown travel alternatives becomes less valuable as the expected values of the alternatives become less attractive in the eyes of the traveller. A maximizer will accept higher 'costs' in order to reduce the number of unknown alternatives than a satisficer, who will only do so when the known alternatives are perceived as being unsatisfactory. Increasing knowledge (or a decreasing volatility in the transport network) leads to decreasing information value. The value of information also decreases once the traveller believes that the information is unreliable.
Strengths/weaknesses:	This paper makes a valuable contribution to the definition of perceived information value and to the modelling of its determinants.

END

DOCUMENT DETAILS

Compendium ID: 1045 Date of Entry: 2007-04-03

Article title:	Mobile phones as traffic probes: practices, prospects and issues.
Article reference details	Rose, G. (2006) Mobile phones as traffic probes: practices, prospects and issues. Transport Reviews, 26, 275-91.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Australia, international coverage of research

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This paper examines the emerging opportunities to collect network-wide traffic information using mobile phones as traffic probes. Its objectives are: 1. to examine technologies for the collection of real-time traffic information to develop an appreciation of the relative pros and cons of mobile phones as a source of dynamic traffic information compared with alternatives; 2. to identify the approaches available for collecting traffic information from mobile phones and the type of information that can be obtained; 3. to review the state of practice in relation to the use of mobile phones as traffic probes; 4. to identify unresolved issues that may have implications for the prospects of obtaining real-time traffic information using mobile phones as probes.
Description/method:	The paper reviews the state of practice regarding the use of mobile phones as traffic probes. It also details issues about the required technological developments.
Findings/conclusions:	Using mobile phones for probe vehicle-based collection of real-time traffic information has potential applications in incident detection, traffic management, the provision of information to influence travel decisions, and for longer-term performance monitoring of the road network.
Strengths/weaknesses:	This paper clearly outlines the potential of using mobile phones for real time traffic information and related issues of concern.

END

DOCUMENT DETAILS

Compendium ID: 1046 Date of Entry: 2007-03-05

Article title:	Communication with non-drivers for promoting long-term pro-environmental travel behaviour
Article reference details	Fujii, S. (2007), Communication with non-drivers for promoting long-term, Transportation Research Part D 12 (2007) 99-102
Web Address:	
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Country/Region/City:	Kyoto

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☑

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This work explores the hypothesis that providing non-drivers with better information would influence their choice on whether to obtain a license.
Description/method:	An experiment was performed in which information was provided to non-drivers in June 2001. The experiment involved 178 non-drivers in their first year of study at Kyoto University. The students were assigned at random to a control group of 35 individuals and an experimental group of 143, in which the participants received information on the negative aspects of automobile use. The experimental group was further divided to the following four subgroups: the cost-information subgroup of 38, who received information on the financial costs of automobile use; the risk-information subgroup of 34, in which the participants received information on the risks of traffic accidents; the stress-information subgroup of 35, in which the participants received information about stress due to traffic congestion that might be experienced during leisure trips; and finally the all-information subgroup of 36, in which the participants received information about the costs, risks, and stress associated with automobile use.

Findings/conclusions:	When information about the risks, costs, and enjoyment of automobile use was made available, it affected a person's attitude toward life using an automobile. This information also influenced whether respondents possessed a driving license 18 months after the experiment. The results indicated that the experimental groups who received information about automobile use with respect to risk, cost, and/or stress due to congestion for 3 or 5 min had relatively less enthusiasm toward life using an automobile than the control group. The results also showed that fewer participants in the experimental group had a driving license than in the control group. These results support our hypothesis and indicate that the information provided had a negative effect on an individual's need to obtain a driving license and his/her attitude, even 18 months after participating in the study. Although studies looking at a larger sample are necessary to reach a final conclusion, the results imply that young non-drivers were not fully aware of the negative aspects of automobile use and providing such information to them may change their travel behaviour. This could help reduce total lifetime CO2 emission of an individual, because the decision to obtain a driving license will have substantial effects on the travel behaviour for the rest of his/her life.
Strengths/weaknesses:	Demonstrated a very strong effect of travel information on attitudes and behaviour. Although does not address travel information usually provided by travel information systems - commonly information about a specific journey; recent ATIS (such as Transport Direct) are addressing more general knowledge/awareness to externalities such as environmental aspects. Sample size is small. Findings may not be completely relevant to UK due to cultural differences between Japan and the UK.

END

DOCUMENT DETAILS

Compendium ID: 1047 Date of Entry: 2007-04-08

Article title:	Route choice behavior of freeway travelers under real-time traffic information provision: application of the best route and the habitual route choice mechanisms
Article reference details	Jou, R. and Hensher, D. (2005), Route choice behavior of freeway travelers under real-time traffic information provision: application of the best route and the habitual route choice mechanisms. Institute of Transport and Logistics Studies Working Paper. 2005/11. (ITLS-WP-05-20)
Web Address:	http://www.its.usyd.edu.au/publications/working_papers/wp2005/itls_wp_05-20.p
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Country/Region/City:	Taiwan

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	to compare the traditional route choice mechanism of 'best route' to the 'habitual route mechanism', in order top explore whether some travellers are likely to travel by their habitual routes rather than on routes with maximum utility.
Description/method:	Stated preference data for route switching behaviour in response to the provision of real-time information of freeway travellers in Taiwan was obtained (pencil and paper study). Socio-economic and trip characteristics collected in the survey. Provided with different schemes of information (quantitative/qualitative, descriptive/prescriptive), 557 participants asked to choose a route from origin to destination. There were 4 switching points on the route between 2 freeways. Two types of route choice mechanisms (the best route and the habitual route) were analysed to identify the major influences on travellers' route choice behaviour.

Findings/conclusions:	The results confirm that the thresholds for changing drivers' behaviour should be substantially larger than the ones for choosing the best routes. Drivers had a higher tendency of staying away from either their best or habitual routes in the beginning of their journey, indicating a better time to provide real time traffic information is the beginning of their journey. Nevertheless, due to inertia effects, drivers were adherent to their habitual routes in the end of their journey.
Strengths/weaknesses:	The paper mainly focus on the developed models and does not discuss the general validation of travellers' responses to travel information, therefore provides limited insight to our understanding of the effect of information provision on route choice behaviour. The face-to-face study of drivers stated preferences to simplistic situations is problematic. For example, it may be argued that dynamic mechanisms of travel choice behaviour, such as learning, adaptation and habitual behaviour, cannot be fully captured by this over-simplistic experimental design. The showcards used in the experiment represented a very limited set of sequential choices (4 switching points between freeways), not providing participants to acquire information and explore the features of the travel information provided, neither provided a realistic choice scenario (choices were not repeated to represent commuting). The context of the choice situation (switching between two freeways) may not suit other travel choice and trip planning situations, and the findings cannot be generalised to wider travel choice situations and behavioural responses to them.

END

DOCUMENT DETAILS

Compendium ID: 1048 Date of Entry: 2007-04-10

Article title:	Transportation Information Systems.
Article reference details	Benson, B. (2001). Transportation Information Systems. In: Button, K., J. and Hensher, D.A. (Eds) Handbook of transport systems and traffic control, (pp. 477-487). Elsevier Science, Oxford.
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RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This book chapter gives an overview of the main developments in transportation information systems in the US over the past ten years.
Description/method:	Developments in information dissemination, commercial trucking, transit, and the role of the public and private sector are discussed.
Findings/conclusions:	During the last ten years information technologies have dramatically altered transportation information systems, offering a raft of important new services to highway travellers, transit users, and truckers. Some of the services are already widely available (such as VMS, radio traffic news), while others have only recently been deployed (such as cable television, cellular phones, the Internet). The private sector will increasingly be the driving force behind changes in transportation information systems.
Strengths/weaknesses:	This book chapter describes the main developments in transportation information systems, but it does not provide many new insights.

END

DOCUMENT DETAILS

Compendium ID: 1049 Date of Entry: 2007-04-10

Article title:	Route Guidance Systems
Article reference details	Nelson, D. and Tarnoff, P.J. (2001). Route Guidance Systems In: Button, K., J. and Hensher, D.A. (Eds) Handbook of transport systems and traffic control, (pp. 489-501). Elsevier Science, Oxford.
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Country/Region/City:	US

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This book chapter describes developments in various types of route guidance systems.
Description/method:	Various forms of route guidance are distinguished and discussed: 1. in-vehicle route guidance vs. out-of-vehicle guidance, 2. autonomous route guidance systems vs. systems fully integrated with the infrastructure, 3. operator-based route guidance vs. automated systems.
Findings/conclusions:	Future challenges include: improved mapping accuracy, an improvement in display technology, and dynamic traffic assignment. Wireless Internet is becoming increasingly popular and as the Internet moves into the vehicle, the range of services (including route guidance) that can be accessed by the motorist will be extensive. This could hugely increase the popularity of route guidance.
Strengths/weaknesses:	This book chapter gives a clear overview of the main types of route guidance systems and their future.

END

DOCUMENT DETAILS

Compendium ID: 1050 Date of Entry: 2007-03-30

Article title:	Transport Direct Market Research Programme: Findings and Implications from Phase 1
Article reference details	Lyons, G (2003) Transport Direct Market Research Programme: Findings and Implications from Phase 1 Transport Direct
Web Address:	http://www.dft.gov.uk/transportdirect/research/overviewandbackground
Source project (if applicable):	
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Sponsor(s):	Department for Transport: Transport Direct
Country/Region/City:	United Kingdom

RESEARCH AREAS COVERED

Awareness	☑	Providers	☑
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	To summarise the outcomes of the first phase of a programme of market research commissioned by the Department for Transport as part of its Transport Direct Programme. The programme aimed to answer two questions:1. What specific characteristics and features should the Transport Direct service possess in order to satisfy the requirements of its prospective users? 2. What demand will there be for such a service and what will it be used for? The programme included four research projects.
Description/method:	The paper reviews four projects and draws out key findings for Transport Direct from them. The projects and methods are: MR01 End-legs and Interchanges - 12 in-depth interviews with families / individuals plus 7 focus groups; MR02 Travelling by Car - 7 focus groups consisting mostly of car users; MR03 Ticket Purchase, Real-time Information and Willingness to Pay - 6 in-depth focus groups with a selected range of people who also took part in interactive experiments; MR04 Positioning Products in the Information Market Place - 30 in-depth interviews with service providers plus 1200 telephone interviews with members of the public, each following one of a number of questionnaire surveys.

Findings/conclusions:	The main findings from the four projects were as follows. - MR01 End-legs and interchanges. Information on end-legs and interchanges is 'nice to have' for some people, but only a minority. Hence it is not urgent to prioritise such information. But information concerning end-legs and interchanges can be important or essential in planning and undertaking journeys for those with permanent or temporary mobility impairments. Many useful items of information could be termed 'basic' (e.g. telephone numbers) but may be difficult for providers to deliver. - MR02 Travelling by car. Car users are particularly interested in real-time information on congestion, with suggestions for alternative routes. This may highlight negative aspects of car use and so provide a more level playing field for making travel choices by providing information on alternatives. A significant minority of car users express interest in considering alternative modes if comparative information is available, especially for longer distance journeys. - MR03 Booking and payment. People still prefer to book and pay for tickets using the telephone – seen as easily accessible and without queues - or in person from staffed counters – which provide reassurance in a correct transaction and guidance on choice. Booking via the Internet is less attractive for users though efficient for providers. So booking systems on the Internet should seek to copy the positive features of telephone and counter services. - Real-time information, mobile phones and text messaging. The public rate real-time information highly and are prepared to pay for it, provided that it includes advice or information on possible courses of action to mitigate journey disruption. Mobile phones and text messaging are seen as important means of informing travellers during their journey. Mobile phones are also seen as attractive means of pre-trip access to real-time information and journey updates, along with television. But different groups of people take different views to use of mobile phones; information might therefore best be available on request. - MR04 Positioning Products in the Information Market Place. Among providers, longer distance journeys were seen as more appropriate for comprehensive travel information; short journeys are familiar to most local people already using bus, while strangers are likely to use taxis. While they value the achievement of more seamless travel, they question the value of comprehensive information for local public transport. Having a Web site for e.g. local bus services may make providers more accessible to the public but it is difficult to ascertain the actual impact on the business, compared to the time and cost to establish a full set of information. Among users, over 30% do not consult telephone or Internet-based information sources. But more than a quarter of people decide on their mode of travel for an unfamiliar long distance (over 5 miles) journey after consulting one or more travel information sources, and 13% do so for an unfamiliar short distance journey. Almost seven in ten people who use telephone or Internet information services would prefer to be able to consult a (one-stop-shop) multi-modal information service; even though there is still an overwhelming 'brand loyalty' for mode-specific information sources. Overall the projects Transport Direct was broadly welcomed as a positive initiative. But there were also concerns that Transport Direct might set high expectations but be unable to deliver and thus harm public confidence. They also showed that providers might not have a business case for offering information formats which could be attractive and lead to modal change. This indicated an important role for Transport Direct in focusing and promoting best practice and research findings.
Strengths/weaknesses:	In pulling together the results of four research projects addressing users' needs and aspects of provision, the report offers a cohesive view of the scope for a comprehensive IT based travel information service and some of the steps needed to achieve it in practice.

END

DOCUMENT DETAILS

Compendium ID: 1051 Date of Entry: 2007-03-30

Article title:	Transport Direct - Mr04: Phase 1 Report
Article reference details	McGarry, T. (2002) Transport Direct - Mr04: Phase 1 Report. Accent Marketing & Research
Web Address:	http://www.dft.gov.uk/transportdirect/research/futuredevelopment
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Sponsor(s):	Department for Transport: Transport Direct
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:

To carry out a series of interviews with service providers of mode specific journey planners for air, rail, coach, bus, car, cycling, ferries and taxis, as part of research aimed to develop greater insight into the positioning of the various information services within the UK travel information marketplace.

Description/method:

30 in-depth interviews were undertaken with senior staff in information service providers who had responsibility for promotion and marketing their company and hence were responsible for the content of their company's web site. Most were in public transport companies and agencies. The sample was recruited by telephone using a specialist recruiter. Respondents were offered the option of being interviewed either by telephone or face-to-face in their own offices. Seven respondents requested a face-to-face interview; the rest were conducted by telephone.

Findings/conclusions:

All providers consider both the web and the telephone important for providing information. But traditional paper based media - timetables, posters, information boards, local newspapers – remain important, as part of a comprehensive provision of information. Having a web presence is essential, to put products firmly in the marketplace and brand their company; it also offers a two-way communication process with members of the public. But identifying the impact on the business is difficult. The journey planner is considered the best aspect of a website; also important are concise information provision, the ability to locate timetabling information easily, and the speed of information retrieval.

	Web sites should be easy to access and use, and provide for on-line ticket purchase as well. Providers regularly monitor and update their web sites, and also study others' web sites. Most link their sites to others which offer a complementary service. In principle they support the Transport Direct approach of seamless information; some believe that Transport Direct may provide a unique and valuable service. However, they also view Transport Direct as possibly ambitious, and question how its funding may be maintained. There are concerns that a national system may place unwelcome demands on individual providers, conflict with providers' own services, or fail to achieve sufficient awareness among the public.
Strengths/weaknesses:	The project provides a valuable and well based review of service providers' approach and views to web based information as part of their total business and to their thoughts on service priorities and a national system. It pre-dates the actual development of Transport Direct. It offers a useful basis for understanding the issues facing Transport Direct in relation to service providers. It reflects purely the views of providers.

END

DOCUMENT DETAILS

Compendium ID: 1052 Date of Entry: 2007-03-30

Article title:	Transport Direct: Phase 2: Public Consultation - Final Report
Article reference details	McGarry, T (2002) Transport Direct: Phase 2: Public Consultation - Final Report. Accent Marketing & Research
Web Address:	http://www.dft.gov.uk/transportdirect/research/futuredevelopment
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Sponsor(s):	Department for Transport: Transport Direct
Country/Region/City:	United Kingdom

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	To ascertain the reasons why people use, or do not use, travel information services and also gain their views on Transport Direct.
Description/method:	To establish a general population sample of respondents throughout England, Scotland and Wales, a survey population was selected according to pre-agreed quotas in terms of age, gender, access to the internet, information use, ethnicity and rural/urban. The final data sets were weighted to known age and sex population estimates for England, Scotland and Wales using the mid-2000 population estimates supplied by the Office for National Statistics (ONS). A pilot telephone survey was carried out with 30 interviewees and used to finalise the structure for the computer assisted telephone interviews (CATI). 1200 interviews were then carried out. All criteria were readily met, except some problems were met in securing a valid balance of age groups. The resultant survey population was considered to be considered a nationally representative sample.

Findings/conclusions:	Car use among interviewees was very high (84% having access to a car all of the time); public transport use lower (three quarters using a train or bus less than once a month). Three quarters of respondents have access to the internet, mostly at home; one fifth of others were considering acquiring it. Two thirds use telephone or internet travel information. The main reason for not consulting a telephone or internet based information source is simply lack of need to (41%). Guaranteed accuracy of information would encourage use; especially for planning a journey, checking the cost for a journey and checking the time to complete the journey. 63% of non-users would like notification of travel restrictions on a system and 58% the ability to buy a ticket. For users of telephone and internet based services, the most important other information source is a map. Services are more likely to be used for leisure journeys (72%) rather than business (29%) or commuting (21%) journeys. For leisure journeys users look for possible travel times (42%), the cost of the journey (29%) and information on other routes (22%). For commuting and business journeys users look for possible travel times (62% and 41%), length of journey (19% and 20%) and delays (15% and 17%). Notification of travel restrictions ability to plan the journey are vital (87% and 80%). Accuracy of information and cost are important facets of a service. The mode of travel is decided before referring to a travel information source by 62% on a short journey, seven in ten on a long journey; usually assuming use of the car. But almost seven in ten would consult a multi-modal information source for an unfamiliar destination; largely to make comparisons across modes e.g. to find the cheapest or quickest mode. Local travel information services are considered to offer better local information whereas a national travel information service is considered to offer more comprehensive information. The modes of travel for which telephone based information services are consulted are train (63%) and bus (22%). For web based information services they are train (45%), car (44%) and aeroplane (38%). The main websites used for the different modes of travel are: • rail information - National Rail • coach – National Express (England and Wales)/Stagecoach (Scotland) • bus – local providers rather than a national provider • car – Automobile Association (AA) • air – BA and Easyjet. Four fifths of respondents said that Transport Direct was a service that they might use to plan journeys, for its ability to compare across modes (34%), its role as a one stop shop and hence comprehensive (29%) and its apparent convenience (18%). The main reason for not using for not using Transport Direct is use of a car (51%). 53% of respondents would use it for obtaining rail information (53%), 47% for car information (47%). A fifth of respondents had heard of Traveline, but interest in it was much less marked than for Transport Direct
Strengths/weaknesses:	The report provides a comprehensive view of public experience of using telephone and web information services, their views on Transport Direct and their reasons for their actions and views.

END

DOCUMENT DETAILS

Compendium ID: 1053 Date of Entry: 2007-03-30

Article title:	An Examination of the Public Transport Information Requirements of Users
Article reference details	Caulfield, B, O'Mahony, M, & Farrell, S (2005) An Examination of the Public Transport Information Requirements of Users. Proceedings of the 8th International IEEE Conference on Intelligent Transportation Systems
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RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:

To examine the provision of both existing and potential methods of accessing public transport information, with particular focus on Intelligent Transport Systems (ITS) applications. To understand the stages a passenger experiences when deciding to undertake a public transport trip, and examining in what form they require information at each stage, defined as 'pre-trip to destination', 'at-stop', 'on-board' and 'pre-trip to origin'.

Description/method:

The research first reviewed provision of public transport information services in Dublin. A web based survey was then carried out over a two week period using a form of non-probability convenience sampling called snowball sampling: the survey was initially sent to 10 individuals working in Dublin City Centre with computer access, the snowball affect resulted in 248 usable responses when the survey closed. In the survey respondents, public transport information was split into four stages: Pre-trip information from origin to destination; At-stop information; On-board vehicle information; Pre-trip information for return trip. At each of these four stages, survey respondents were offered different methods of acquiring passenger information.

Findings/conclusions:	Currently Dublin two operators provide passenger information via mobile phones, there are mode specific web services (but no integrated one), real time information on the rail, transit and quality bus services, and traditional paper based timetables and maps available from operators and at stops and stations. For survey respondents 35% of information comes from 'existing knowledge', 30% from the internet, 20% from mobile phones. Much existing information is good, but half of respondents want more; however, two-thirds perceive information and maps at stops as poor quality, though few feel deterred from using public transport by this. For internet services, the main priorities are speed of connection (95% of respondents rate as important), real time location of vehicle (90%) and a journey planner (73%). For call centres priorities are speed of access (93%), real time information (85%) and cost of calls (82%). For information by mobile phones the priorities are news of disruptions (89%), real time information (85%) and cost (84%). For real time displays at stops the priorities are news of disruptions (95%), estimated time of arrival (93%), a map displaying vehicles locations (83%) and information on connecting services (76%). The main preferences for information at the different stages of a trip were: Pre-trip information from origin to destination, paper based timetables (48% first choice) and the internet (30%); At-stop information, real time displays (RTPI) (74%) and paper based; On-board vehicle information, RTPI (69%) and paper based; Pre-trip information for return trip, internet (64%) and paper based. Overall the survey showed the value of the web based methodology used for quick assessments, the importance of RTPI systems and the concerns over cost of phone and internet systems.
Strengths/weaknesses:	The paper gives a clear picture of experiences and preferences for public transport information systems among users in Dublin. Its indicators of preferences offer some guidance for priorities in decision making. However, its findings are based principally on a non-random survey which may well have resulted in significant bias towards ITS literate people in central city (i.e. professional and administrative) jobs. Thus it probably does not reflect the overall population approach and thus the results need to be considered in this light.

END

DOCUMENT DETAILS

Compendium ID: 1055 Date of Entry: 2007-03-30

Article title:	Introduction: Habitual travel choice
Article reference details	Garling, T & Garling, K W (2003) Introduction: Habitual travel choice. Transportation 30: 1-11
Web Address:	
Source project (if applicable):	
Contact name:	Tommy Garling
Affiliation:	Department of Psychology, Göteborg University
EMail:	Tommy.Garling@psy.gu.se
Sponsor(s):	Swedish Transport and Communications Research Board
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	As an introduction to a special edition journal on habitual travel choice, to provide a brief account of the role of habit in travel behaviour, discuss more generally what habitual choice is, and briefly review several issues: how habitual travel behaviour should be measured, how to model the learning process that makes travel choice habitual, and how to break and replace car-use habits.
Description/method:	The paper discusses in turn the role of habit in travel behaviour and what habitual choice is. It then describes the issues raised by accompanying papers.
Findings/conclusions:	Planning for transport involves the development of models that can be used in transport planning to forecast how travellers choose between available alternatives under given circumstances. Normal behaviour reflects habit, which is based on previous learning experiences. In the face of changes, behaving from habit offers less uncertainty. The success of new transport (infrastructure or soft measures) depends on the ability of travellers to integrate new signals into their travel habits; modelling needs to address this. There remains a question over whether habitual behaviour involves basing decisions on past experiences or whether regular patterns of behaviour are based on using similar information each time and coming to the same decision. This is important for policy action: if travel choices are habitual, then changing travel behaviour is much more difficult than if they are regularly influenced by information. Research areas which are important to address this include measuring habitual travel behaviour; analysing how travel choice

	becomes habitual; and finding ways to break ‘bad’ travel habits, an area in which practical experiments (e.g. supplying free public transport tickets for a month and observing behaviour) are important.
Strengths/weaknesses:	The paper provides a valuable focus on the nature of habitual travel behaviour, its development and role in travel decisions and ways in which habitual behaviour might be altered. The basis is largely conceptual.

END

DOCUMENT DETAILS

Compendium ID: 1056 Date of Entry: 2007-05-25

Article title:	Stated preference evaluation of passenger information in Dublin.
Article reference details	Caulfield, B. and O'Mahony, M. (2005). Stated preference evaluation of passenger information in Dublin. Paper presented at the annual Universities Transport Study Group.
Web Address:	
Source project (if applicable):	
Contact name:	Brian Caulfield
Affiliation:	University of Dublin
EMail:	brian.caulfield@tcd.ie
Sponsor(s):	Department for Transport
Country/Region/City:	Ireland

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This paper discusses the methodology of a research aimed at examining what type of information passengers require and how much they might be willing to pay for it. Some first results are reported as well.
Description/method:	The survey was sent in March 2004 via Internet to ten respondents working in Dublin City Centre and having Internet access. Via snowball sampling, 248 responses were gathered in two weeks time. The majority of the respondents are female (62%) and aged 34 or under (78%). The study examines from which of the following information sources respondents prefer to receive information: Internet, mobile phone, passenger information display (PID), or from a call centre. The following stages of a passenger's journey have been identified: 1. pre-trip planning at origin, 2. at stop/station information, 3. pre-trip planning from destination. At each of these stages, respondents have been asked to evaluate possible methods on information provision.

Findings/conclusions:	The results indicate that 35% of the respondents use their existing knowledge, while 30% use the Internet to obtain information and 20% paper timetables. More than two thirds of the respondents found the quality of bus/rail time tables and maps at stops/stations poor. Although 42% thought good information is provided, nearly a quarter (73%) of the respondents indicated that they would like to see more information provided. The most popular information source for pre-trip information from origin to destination were paper-based time tables, while the Internet ranked second. The lower rankings for SMS and call centres may be due to their costs in usage. Regarding at-stop information, the majority of respondents have a preference for Real Time Passenger Information (RTPI) displays, while paper-based methods ranked second. For pre-trip information from destination to origin, the Internet was most popular, probably due to sample characteristics (office workers who have Internet access), followed by paper-based methods.
Strengths/weaknesses:	This paper gives some basic insight into the preferred travel information sources varying per trip stage. More interpretation of the findings would have been welcome. As the authors acknowledge, because a non-probability convenience sampling method was chosen, no generalisations for the population can be made.

END

DOCUMENT DETAILS

Compendium ID: 1057 Date of Entry: 2007-05-29

Article title:	Integrated multimodal travel information in public transport
Article reference details	Grotenhuis, J. (2005). Integrated multimodal travel information in public transport. Master dissertation, Utrecht University.
Web Address:	
Source project (if applicable):	
Contact name:	Jan-Willem Grotenhuis
Affiliation:	XTNT Experts in Traffic and Transport
EMail:	jw.grotenhuis@xtnt.nl
Sponsor(s):	Utrecht University
Country/Region/City:	The Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This master thesis explores what types of integrated multimodal travel information (IMTI) public transport users need and why, both pre-trip and en-route.
Description/method:	It is assumed that the type of information that public transport users need is determined by time and effort savings. Time savings are divided into searching time (of travel information) and travel time savings, whereas effort savings are composed of physical effort (e.g., walking, waiting, carrying) cognitive effort (mental effort to process travel information), and affective effort (the emotional energy expended on a journey, such as uncertainty). The desired travel information for the following three stages of a trip have been researched: pre-trip, way-side (e.g., at bus stops or stations), and on board. A literature review and eleven interviews with experts in the integration of travel information from different European countries have been conducted face-to-face or by phone to determine the types of needs public transport users might have. For each trip stage, a list of various needs was made and tested via stated preference in an internet survey that was conducted in October and November 2004. The survey was announced among students and staff of Utrecht University, and further spread by way of chain referral which resulted in 191 respondents. Nearly two-third of the sample (63%) is male and more than half (55%) is under 25 years old.

Findings/conclusions:	Most people prefer to collect and use IMTI in the pre-trip stage. Search time savings and travel time savings are most important during the pre-trip stage, whereas travel time savings and physical and affective effort savings seem most important wayside. On board, travel time savings and affective effort savings are desired most. Thus, in all trip stages travel time savings are considered to be important. Older people seem to have a greater need for IMTI than younger people (especially information that can reduce physical effort), throughout all trip stages. IMTI types needed by non-frequent travellers mostly serve to save search time, whereas IMTI needs of more frequent travellers (i.e. use public transport at least twelve days per month) mostly seem to save cognitive effort. Respondents who do not travel regularly by multiple modes stated more often that they need information on maps with major interchanges than travellers used to multimodal travel, which underlines their unfamiliarity with changing modes. Respondents who use public transport regularly for work and study purposes need less IMTI pre-trip, because of the familiarity of these journeys. However, wayside, they expressed a greater need for IMTI than non-frequent travellers or travellers with other purposes. This might be due to their familiarity with the public transport system: familiar travellers are better informed about the various route or mode options and in consequence about the value that IMTI can have if provided at the right place at the right moment. Unfamiliar travellers will probably stick to one route option and want to be informed about that particular route. Long distance travellers (travel distance more than 50 kilometres) expressed a need for pre-trip IMTI types that might save travel time. Short distance travellers probably consider it less valuable or attainable to save travel time.
Strengths/weaknesses:	This master thesis provides a detailed description of the different types of needs public transport users have at various stages of their journey. It shows how these needs vary per trip stage and type of person. However, the findings need to be interpreted carefully, since young males are over-represented in the sample.

END

DOCUMENT DETAILS

Compendium ID: 1058 Date of Entry: 2007-05-31

Article title:	Traveline and Transport Direct disabilities customer research.
Article reference details	TTR (2004). Traveline and Transport Direct disabilities customer research. Transport and Travel Research Ltd. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/prog-dcr.pdf
Source project (if applicable):	
Contact name:	David Blackledge
Affiliation:	TTR (Transport & Travel Research Ltd)
EMail:	enquiries@ttr-ltd.com
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This report assesses the travel information needs of disabled people.
Description/method:	Fourteen focus groups have been carried out (in Glasgow, Lincoln, Reading, and Liverpool) with the following types of disabled people: 1. blind and partially sighted people, 2. people who are deaf or hard of hearing, and 3. physically disabled people. There was also a single focus group (in Hove) involving people with learning disabilities. Within each focus group there was a mix of different ages, men and women, of pubic (and community) transport users and non-users, and of employed and unemployed persons. Telephone interviews were conducted with 18 Traveline regional call centre managers across the UK to ascertain the type of information that call centres provide for disabled travellers.
Findings/conclusions:	Regarding the current information sources that are used, most participants liked to obtain transport information through timetables and in person at travel information centres and train stations. Blind and partially sighted and physically disabled people preferred to use the telephone to obtain information, whereas deaf and hard of hearing people made more use of the Internet. People with learning disabilities found current sources difficult to use and tended to rely on word of mouth and help from other people when planning journeys. There was a wide variation in the level of information available to disabled callers depending on the location of their call centre. Fourteen of the 18 call centres contacted stated that enquiries about low floor buses were the most common information requirement concerning accessibility. Large print timetables, accessibility of stations and

	infrastructure, and staff assistance were also mentioned. Very few respondents had heard of Traveline prior to the focus group discussion and nobody had heard of Transport Direct. Nearly all respondents were enthusiastic about the Traveline services. In comparison, they were less enthusiastic about Transport Direct, probably because the majority (64%) of the respondents did not have Internet access. The type of public transport information required varied considerably according to people's mobility characteristics. Deaf and hard of hearing people tended to need no more than basic time table information, whilst less independent travellers stated that they would want as much information as possible about the accessibility of both vehicles and interchange facilities. Information that was regarded as being 'essential' was: times of services, route numbers of buses, and alternative services in the event of delays and cancellations. There was a general feeling among all groups that 'something going wrong during a journey' was the biggest concern. To counter such worries, there was a desire among many participants for receiving real-time information on changes to services by means of a text message to a mobile phone. It was noted in all groups that, although information on the accessibility of physical infrastructure is important, the availability and helpfulness of staff during a journey had the greatest impact on making journeys less stressful. For about one in three of the respondents a lack of confidence generally was the main deterrent to public transport use and no amount of information on accessibility and assistance could encourage them to use public transport. A recommendation of the research was to provide disability awareness training to call centre staff and to recognize the importance of the completeness of the information for disabled travellers. It was also recommended that Transport Direct should comply with guidelines relating to the accessibility of Internet-based information provision (e.g., make printed information from the Internet available in large print format) and that all transport operators and information providers should have some means to handle an enquiry from a deaf or hard hearing caller using assistive technology such as email, text messaging, or fax.
Strengths/weaknesses:	This is a valuable piece of research that contains a lot of detailed information about the specific public transport information needs of various types of disabled travellers, as well as their experiences with using public transport and public transport information.

END

DOCUMENT DETAILS

Compendium ID: 1060 Date of Entry: 2007-04-19

Article title:	Washington State Department of Transportation Electronic Information and Supporting Systems: Challenges to Effective Practice and Policy.
Article reference details	Haselkorn, M., Kolko, B., Rose, E., Krug, M.A. & Sauer, G. (2005).Washington State Department of Transportation Electronic Information and Supporting Systems: Challenges to Effective Practice and Policy. Washington State Transportation Center (TRAC) 57 pp
Web Address:	
Source project (if applicable):	
Contact name:	M.Hasselkorn
Affiliation:	University of Washington
EMail:	
Sponsor(s):	U.S. Department of Transportation, Federal Highway Administration.
Country/Region/City:	Washington, USA

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☑
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To consider WSDOT's ability to derive benefits from its extensive ICT investment, especially in traveller information services; and thus provide WSDOT with the groundwork and direction to better handle the complexity and interrelatedness of these and other, non-technological, electronic information and supporting systems (EISS). To (1) explore general issues of EISS practice and policy and (2) develop strategies for EISS practice and policy that will help both WSDOT and DOTs in general evolve.
Description/method:	The study comprised two main parts: a desk based review of EISS systems, looking in turn at various characteristics, approaches to EISS management and organisational challenges to effective EISS, and the role of the CIO; and a set of structured interviews with WSDOT internal EISS stakeholders, to determine people's EISS roles, how their work was affected by EISS, and to obtain their perspectives on EISS at WSDOT. From these assessments and interviews the study drew out eight specific recommendations for WSDOT.

Findings/conclusions:	In its introduction the report identifies how different parts of WSDOT have evolved different approaches and systems for EISS; it points out the contrast between traffic engineers, who see real-time information as an operational tool, and administrators, who see it as part of communication with the citizens. EISS is all pervading in modern society, it is interdependent in being an open system, it means different things to different people. A key problem is that confusion has arisen between communication, i.e. human inter-relations, and communications, the systems provided for interchange of information; thus knowledge management has evolved with a primarily systems rather than organisational focus; technical rather than strategic perspectives have guided the development of services. There are several challenges which EISS development must address, including the balance between central management and local execution, the scope for local autonomy, clarifying ownership and responsibility, overcoming funding disincentives, considering the evolution of issues over time, and tackling issues of organisational culture. The role of the Chief Information Officer (CIO) in management is crucial, especially in identifying and leading on organisation-wide aspects while supporting local autonomy elsewhere. The stakeholder survey interviews identified a number of issues. Responsibilities for systems were mainly local, with conflicts and differences over choices of methods and systems; this reflects WSDOT's decentralised approach. There is no clear leadership, or awareness of common organisational goals. The focus is on technology rather than organisation or clients.
Strengths/weaknesses:	The study focuses almost entirely on management and organisational aspects of providing ITS travel information systems; indeed, these are effectively the context for the research rather than central to it. It is also set specifically in the USA. Nonetheless, it is a valuable analysis of issues of organisational management in the public realm that are crucial to understanding the best way forward for ITS systems.

END

DOCUMENT DETAILS

Compendium ID: 1061 Date of Entry: 2007-04-05

Article title:	TrafficTV.
Article reference details	Dailey, D.J. and Bradbury, J. (2005) TrafficTV. Washington State Transportation Centre (TRAC), University of Washington.
Web Address:	http://depts.washington.edu/trac/bulkdisk/pdf/603.1.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	University of Washington
EMail:	dailey@ee.washington.edu
Sponsor(s):	Washington State Department of Transportation
Country/Region/City:	Puget Sound region, Seattle, US

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This report documents the developments and evaluations of TrafficTV; a traffic and traveller information source available on cable television.
Description/method:	The report describes the hardware and software for TrafficTV, discusses the selection process for programming features, describes the selected options that were implemented, and presents the conclusions and recommendations of two evaluations that were conducted after these changes had been made. The first is a customer satisfaction evaluation carried out in 1999, which sampled approximately 10,000 households in the Seattle area who had cable access to TrafficTV. The response rate was 17% (1,705 questionnaires returned). The second is a market penetration audit held in June and July 2004 in which 1,047 interviews were conducted.
Findings/conclusions:	TrafficTV receives traffic congestion information from the regional ITS backbone (in self-describing data format) and live traffic video. A computer program fuses the data, adds digital video effects, and supplies the resulting presentation to a cable television provider for cablecasting. The traffic congestion is displayed on a regional map; different colours on roadway segments indicate current travel speeds. Starting as Traffic Channel in 1998, improvements were made to this travel information service and it was renamed TrafficTV in 2001. Further changes were made and evaluated by a focus group in May 2004. This focus group concluded that TrafficTV is a useful travel information tool, but has not had sufficient public exposure to make it widely known to the travelling public. Nearly half a

	million households would have the ability to access TrafficTV. The results of the customer satisfaction evaluation show that 13% of the respondents said they had ever watched the traffic information broadcasts. Of those, the majority (62%) was male. Respondents over 66 years old are less likely to have ever watched TrafficTV, while higher income respondents are less likely to be frequent viewers. Nearly half (45%) of the viewers said they use the information for commuting. Route changes and trip timing changes occur most frequently after consulting traffic information for commute trips. Frequent viewers are more flexible in their commutes and may therefore feel they have more to gain from the broadcasts. The market penetration audit concluded that over 94,000 viewers had seen TrafficTV within the last week, based on 1,047 conducted interviews. This was deemed surprisingly high, given the lack of external exposure and that viewers would have found TrafficTV only by word of mouth or by "channel surfing". A conclusion of the audit was that additional exposure would make TrafficTV more valuable as a traveller information tool.
Strengths/weaknesses:	It is unclear how the audit concluded that 94,000 people watched TrafficTV in the last week based on 1,047 conducted interviews. This report provides basic information; the appendices contain relatively more information (especially appendix I, which contains the outcomes of the customer satisfaction evaluation).

END

DOCUMENT DETAILS

Compendium ID: 1062 Date of Entry: 2007-04-19

Article title:	A Comparison of Mobility Impacts on Urban Commuting Between Broadcast Advisories and Advanced Traveler Information Services.
Article reference details	Vasudevan, M., Wunderlich, K., Larkin, J. and Toppen, A. (2004). A Comparison of Mobility Impacts on Urban Commuting Between Broadcast Advisories and Advanced Traveler Information Services. Mitretek Systems, Virginia. 49 pp
Web Address:	
Source project (if applicable):	
Contact name:	M.Vasudevan
Affiliation:	Mitretek Systems, Virginia, USA
EMail:	
Sponsor(s):	USA Federal Highway Administration
Country/Region/City:	Washington DC, USA

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To explore the effectiveness of relying on commercial radio as a source of traveller information. To present an approach to quantify trip reliability and hence mobility benefits from radio traffic advisories.
Description/method:	Traffic broadcasts from radio station WMAL were recorded 47 days and manually coded to translate them to a suitable format for analysis. Travel time and incident data for these days were collated from the SmarTraveler web site. These were used in the analytical technique model Heuristic On-line Web-Linked Arrival Time Estimator (HOWLATE) which constructs synthetic trips of a pair of drivers, a habitual commuter who makes regular use of traveller information services (either broadcast advisories or ATIS) and a habitual commuter who ignores all traveller information sources, so that each pair has the same origin, destination and target time of arrival. The final analysis covered 37 weekdays consisting of 4410 radio advisories. It also involved comparison of a non-informed traveller with [a] a radio archetype and [b] an ATIS pre-trip user. The results were analysed to identify the effects of radio advisories on driver behaviour.

Findings/conclusions:	Two hypotheses were tested. Radio archetype v. pre-tip ATIS user. The radio archetype performed worse over both peak periods. Radio broadcasts cover only a small proportion of all road segments, whereas the ATIS user gets travel time estimates for his entire trip. Radio users assume free traffic flow when there is no broadcast, which is often not the case. In the AM peak, the radio archetype had greater late schedule delay of 3.9 minutes compared to 2.5 minutes for the pre-trip ATIS user, but in the PM peak both traveller information users had the same late schedule delays (3.4 minutes). The radio archetype suffered greater measured disutility. Radio archetype v. non-ATIS user. In the morning peak the non-ATIS user had higher trip Reliability, lower travel disutility, and smaller late schedule delays (2.8 minutes versus 3.9 minutes). Radio archetypes may not pick up all relevant broadcasts. In the afternoon peak the performances were the same.
Strengths/weaknesses:	The report provides a useful assessment of the impact of radio broadcasts on car travel, based on analysis of actual broadcasts. However, it is based solely on one analytical model and does not reflect actual behaviour or wider aspects of radio information.

END

DOCUMENT DETAILS

Compendium ID: 1063 Date of Entry: 2007-04-04

Article title:	Travellers' valuation of traffic information with respect to trips to work.
Article reference details	Killi, M. and Samstadt, H. (2002) Travellers' valuation of traffic information with respect to trips to work. TOI Report 620/2002, Institute of Transport Economics, Oslo, Norway.
Web Address:	http://www.toi.no/getfile.php/Publikasjoner/T%D8I%20rapporter/2002/620-2002/
Source project (if applicable):	
Contact name:	Marit Killi
Affiliation:	Institute of Transport Economics
EMail:	mki@toi.no
Sponsor(s):	
Country/Region/City:	Norway

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☑
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	The report (in Norwegian, only the summary is in English) describes the results of a survey carried out to investigate the use of and the need for information for commute trips made in morning rush hours.
Description/method:	Participants were recruited along the road in Oslo during morning rush hour at three different locations at the 24th of September 2002. In total, 1735 cards were handed out to car drivers which contained the web address and password that gave access to the survey. The response rate was 17.5% (314 participants). Three quarter of the sample consists of men, mostly between 30 and 60 years old.
Findings/conclusions:	The majority of respondents receive traffic information at home before leaving for work (70%) and on their way to work (87%). The main source of information is the radio. Participants used travel information mostly for choosing an alternative route. Asked whether they wanted more detailed information in the future, 68% of the respondents replied to be willing to receive such information before leaving for work, while 77% would like to get more information on their trip to work. In general, more men than women would prefer more detailed information. The preferred future sources of information would be the radio for both at home (86%) and on trip (92%). Only 7% mentioned the Internet as a preferred source of traffic information at home, compared to 39% for SMS on mobile phones, and 14% for text TV. Variable message signs were mentioned by 53% of the

	respondents as preferred information sources on trip, followed by SMS on mobile phones (27%) and a navigation system in the car (26%).
Strengths/weaknesses:	It is difficult to gain a full understanding of the results based on the summary only.

END

DOCUMENT DETAILS

Compendium ID: 1064A Date of Entry: 2007-05-31

Article title:	Transport Direct Research Project MR08. Focus Group Report.
Article reference details	TTR (2004). Transport Direct Research Project MR08. Focus Group Report. Transport & Travel Research Ltd. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr08.pdf
Source project (if applicable):	
Contact name:	Rachel Brooks
Affiliation:	TTR (Transport & Travel Research Ltd)
EMail:	enquiries@ttr-ltd.com
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report forms the first part of a research that aims to provide more insight into the issues travellers face when using and printing traveller information obtained from the Internet.
Description/method:	Eight focus groups have been conducted in greater Nottingham, each with 6-10 participants. Respondents fell into one of the following five categories: 1. long distance car travellers, 2. rail travellers, 3. local trip makers, 4. people with difficulties in understanding printed information, 5. football supporters (representing travellers who regularly travel long distances to events). A questionnaire about printing and using information from the Internet was handed out to each participant at the beginning of the focus group and was collected before the focus group began.
Findings/conclusions:	The type of information that is required for public transport journeys is the cost of the trip and general timetable information including duration and change details, whereas for car journeys route information (map / text directions or both) and the duration of the journey were the main pieces of information that travellers required. Long distance car travellers currently consider maps on journey printouts to be of poor quality and they tend to print a suitable map from another website. They also use map books to accompany the journey. Long distance rail travellers print the information as it appears on screen, take it with them, and use it throughout the journey. Particularly females verify their information with static information sources at the station and with other Internet journey planners. Local travellers

	tend to print or write down the journey planner information, but are less inclined to print information for short or local journeys. Travellers with dyslexia find the current information that is provided very confusing and they often alter the screen and printer settings before viewing or printing a page. Football supporters find journey planners straightforward to use, but dislike journey planner maps due to lack of detail. The majority of travellers (60%) print out the information a day before the trip, while the rest would look up the information at least a week before the trip. Nearly all travellers (92%) took a form of travel information with them on their journey to assist them whilst making their trip. The key points that travellers wanted their journey planner print out to provide are: 1. simple, straightforward information that is easy to understand, 2. all the information they needed on one printout, 3. maps that are clear and detailed enough to read whilst travelling, 4. more imagery and key symbols to illustrate key directions, 5. a font size and colour to meet the needs of all users, 6. limited amount of 'white' space on the printout to reduce excess use of paper. Users of journey planner websites have indicated that they want a wide range of information to be available on screen to use, but they want to be able to select the specific information that they require. The inclusion of additional information on screen (e.g., landmarks, maps, symbols) on request, coupled with options to select the amount of detail required prior to printing will result in personalised printouts which will be of greater assistance to users than the information which is available today.
Strengths/weaknesses:	This report provides more insight into travellers' needs for printing and using information from the Internet and how these needs differ per type of traveller.

END

DOCUMENT DETAILS

Compendium ID: 1064B Date of Entry: 2007-05-31

Article title:	Transport Direct Research Project MR08. Workshop 2 Report.
Article reference details	TTR (2005). Transport Direct Research Project MR08. Workshop 2 Report. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr082.pdf
Source project (if applicable):	
Contact name:	Rachel Brooks
Affiliation:	TTR (Transport & Travel Research Ltd)
EMail:	enquiries@ttr-ltd.com
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report forms the second part of a research that aims to provide more insight into the issues travellers face when using and printing traveller information obtained from the Internet. It reports the results of a design workshop where prototypes of printed travel information were compared with the existing printed output from the Transport Direct portal.
Description/method:	Mostly the same respondents that had participated in the first part of the research also participated in the second part (although some new respondents were recruited as well). In the workshop, respondents compared mock up printouts with a printout from the Transport Direct portal.
Findings/conclusions:	Most respondents disliked the current maps used for the print outs and would like to see clear, bright, and easy to read localised maps covering a wider area around unfamiliar locations and for journey routes to be highlighted. They also need to contain additional information wherever possible, such as local landmarks. It is recommended that two common print outs be designed for the Transport Direct portal, one for car users and one for public transport users.
Strengths/weaknesses:	This report contains a lot of practical recommendations for improving printed output from the Transport Direct portal.

END

DOCUMENT DETAILS

Compendium ID: 1065 Date of Entry: 2007-04-19

Article title:	Traveler Information Systems in Europe.
Article reference details	Rupert, B., J.Wright & Colleagues (2003). Traveler Information Systems in Europe. Federal Highway Administration. 80 pp
Web Address:	
Source project (if applicable):	
Contact name:	Bob Rupert
Affiliation:	USA Federal Highway Administration
EMail:	
Sponsor(s):	Federal Highway Administration, American Association of State Highways Officials
Country/Region/City:	Europe

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	To review traveller information systems in major European cities which aim to provide services that reflect all transportation modes, especially beyond the personal automobile. To draw recommendations from these for application in the USA.
Description/method:	A study tour was made of eight cities in Europe with established multi modal traveller information services. The study team of eleven from principal USA transport bodies reviewed and documented the practices, policies, strategies, and technological innovations used in those cities, held meetings with national, regional, and local units of government and, where appropriate, private-sector organizations, and evaluated systems and services for potential application in the United States.
Findings/conclusions:	The findings were summarised under a number of headings: - Information content: Automated parking information systems were operated in every city and seen as an integral part of the traveller information environment. Short-term traveller information prediction (“next bus” and “next train”) are pursued in several areas. Significant emphasis is put on collecting and providing quality data; though the “data gap” also exists in Europe. - Business/cost recovery models for information systems: Various public-led, public-private and private sector models exist. National departments of transport usually lead on provision of a national traveller information database. The need to integrate information

	means that multimodal and multiagency cooperation are critical for successful deployment of an ATIS. Operator-based call centres are far more extensive than in the USA, especially in the UK, as is delivery of in-vehicle information. Small-scale, innovative business models are tested in a discreet way before being considered for larger deployment. - Quality measures: There is a generally strong commitment to measuring and improving the quality of traveller information collection and delivery; especially in Sweden. In most cases, the sites start with quantitative measures and then move to qualitative measures. - Technology applications: The application of multiple colours and symbols on dynamic message signs (DMS) appears to improve message transfer and understanding among commuters. Advanced detection techniques are pursued and tested at most sites, including the use of vehicles as probes or of video technologies to match vehicles. Automated parking information systems are operating in every city visited. Real-time information delivery mechanisms are used extensively. - International / national consistency issues and standards: This was not a major discussion point at any of the places visited but there was acknowledgment of the need for and use of standards and of the work of various standards groups. - Policy/institutional/legal aspects: Traveller information policies varied by country, depending on the government. National policies exist as a model where the state department of transportation will provide guidance, through a top-down approach. National traveller information databases are generally being pursued and are under development. Establishing a sustainable traveller information system requires integration of information.
Strengths/weaknesses:	The review provides a valuable overview of commonalities and differences in approach across Europe and between Europe and the USA. It largely focuses on the types of systems provided and how they are implemented in the context of the particular cities visited. There is little information about transport policy and the main focus appears to remain on car travel systems rather than public transport. It is written from the USA perspective.

END

DOCUMENT DETAILS

Compendium ID: 1066 Date of Entry: 2007-03-12

Article title:	Strategies for Improved Traveler Information
Article reference details	Schweiger, C. L. and Shammout, K. (2003). Strategies for Improved Traveler Information. The National Academies. 112 pp
Web Address:	http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_92.pdf
Source project (if applicable):	TCRP Project A-20A(2)
Contact name:	Carole L Schweiger
Affiliation:	Multisystems, USA
EMail:	
Sponsor(s):	Federal Transit Administration
Country/Region/City:	USA

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☑
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:

To provide a useful summary of the state of the practice in the area of improved transit traveller information (TTI). To provide information on the demand for TTI; the state of the art in providing TTI, examples of providing customer information in related industries, TTI as part of community information systems, and new directions for TTI.

Description/method:

The study involved four main tasks, which were based on wide ranging use of research and other literature, Internet based information, focused discussions with contacts in the transit and other transport and logistics industries. The tasks were:
- Update state-of-the-art information from literature.
- Summarise the experience of other (related) industries in providing information, through telephone interviews with key personnel.
- Summarise transit's role in community information systems.
- Identify potential new directions in TTI.

Findings/conclusions:

Four key strategies for improved TTI were identified which are being deployed by transport agencies outside the United States or by non-transit industries, and issues and opportunities within each were drawn out. These main issues were:
- Quality of data is fundamental to the quality of information provided. Data should be of appropriate detail for the mode (e.g. far more detailed for pedestrian information). They should be comprehensive for the area, including covering potential journeys beyond. They should be regularly maintained; this might be aided if each set (e.g. bus stop locations) is

	managed by one agency. - TTI should be fully integrated with other traveller information, particularly traffic information for “one-stop” regional information shopping; Transit agencies could sell their data if completely sound, since it is based on a unique operational basis. TTTI should include travel times by transit journeys; this is essential for comparable multi-modal systems. - More customer-focused and personalized information is important. These might include: clear stop specific timetables, with maps / diagrams (as e.g. London Buses); and IVR technology, which enables passengers to obtain information on specific services by mobile phone. - Provision of real-time information using a variety of dissemination media is valuable; experience suggests that it needs to be developed on a step by step basis so that the public have confidence in it and become accustomed to using it.
Strengths/weaknesses:	The report offers a comprehensive review of transit (public transport) information provision across the USA and in some European centres and draws together aspects of best practice. It is heavily oriented towards issues around provision rather than matters of customer preference or behaviour. It is written from the USA perspective.

END

DOCUMENT DETAILS

Compendium ID: 1067 Date of Entry: 2007-04-04

Article title:	The value of advanced traveler information systems for route choice.
Article reference details	Levinson, D. (2002). The value of advanced traveler information systems for route choice. Transportation Research C, 11, 75-87.
Web Address:	
Source project (if applicable):	
Contact name:	David Levinson
Affiliation:	University of Minnesota
EMail:	levin031@umn.edu
Sponsor(s):	
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	The paper analyses systems that provide the driver the fastest path between his or her current location and final destination, updated in real-time to consider recurring and non-recurring congestion.
Description/method:	This paper considers microeconomic theory of traveller information. A model is developed that enables the calculation of the time saved and the change in trip variance associated with ATIS as market share and congestion levels vary. This model is applied to some stylized cases with incidents of various degrees of severity and without incidents.
Findings/conclusions:	The amount of time saved under recurring congestion using ATIS is greatest when traffic is at the precipice of capacity, when small changes in traffic flow can make large differences in travel times. When traffic is much lower than capacity and in the absence of incidents, dynamic route guidance has few opportunities to save time, while for super-saturated conditions, uncongested alternatives may not be available either. The greatest time savings for ATIS is with non-recurring congestion, incidents that cannot be easily anticipated. ATIS reduces the variance in the travel time, making private vehicle transportation more reliable. The author concludes that ATIS provides travel time benefits to users and society overall, although it may increase the time for select non-informed travellers.

Strengths/weaknesses:	This paper draws attention to the fact that sometimes, car users are better off if they are the only ones who use travel information compared to other car drivers.

END

DOCUMENT DETAILS

Compendium ID: 1068 Date of Entry: 2007-04-05

Article title:	Perspectives and expectations of drivers: a literature and best practices scan.
Article reference details	Weisser, K., I. and Horowitz, A. (2002) Perspectives and expectations of drivers: a literature and best practices scan. Project #SPR-0092-02-12, University of Wisconsin.
Web Address:	http://www.topslab.wisc.edu/workgroups/sketchplanning/driver_expectations.pdf
Source project (if applicable):	
Contact name:	Alan J Horowitz
Affiliation:	University of Wisconsin, Milwaukee
EMail:	horowitz@uwm.edu
Sponsor(s):	Wisconsin Department of Transportation, Federal Highway Administration
Country/Region/City:	Mainly US, some international coverage

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	The Wisconsin Department of Transportation initiated this study in order to determine missing research elements that are critical to its mission. The report reviews the literature on drivers perspectives and expectations of Intelligent Transportation Systems (ITS).
Description/method:	The literature scan yielded 158 articles of which 84 have been included in an annotated bibliography.
Findings/conclusions:	The authors conclude that improving existing media may be a powerful tool at modest cost. The general public is likely to use radio or Changeable Message Sign (CMS) or other "low-hassle" media. Also, they are less likely to seek out information compared to "technophiles". The latter group of people are likely to use new technology, to be young, male, wealthy, and "control seekers". Trip types have different information needs; no single format is useful for all trips. The highest demand for information is by commuter trips and special trips (such as airport, stadium, appointments). Radio and television are the dominant media for consulting pre-trip information. Very few travellers use telephone, Internet, or other technologies where these services are available. Radio and CMS are the dominant media for consulting en-route information. The willingness to pay for on-board technologies is low, and very few travellers use such technologies or the telephone for en-route information. Thus, though their current usefulness is limited, existing media (radio, television, CMS) are very popular. Drivers generally want to receive information as they

	listen to or watch other programming or observe their environment. Independent of media or technology, drivers generally want to know if there is a problem, what the problem is, the delay, a prescribed remedy or alternate route, and how the alternate delay compares with the highway delay. They like to have more information at the right time and enough information so they can weigh their priorities and make a decision. The use of ATIS is very low and ATIS users had moderate rates of changing route or time (averaging about 50%) around a delay. Given the gaps existing research, future studies could be undertaken in the following areas: 1. The improvement of radio, television, and CMS information; 2. General guidance for implementation of ITS for work zones; 3. Special trip and special event driver needs; 4. Intercity or rural driver needs; 5. Truck driver needs; 6. Public safety/homeland security needs.
Strengths/weaknesses:	This is a rather rudimentary report that only highlights the main findings without much discussion of the literature.

END

DOCUMENT DETAILS

Compendium ID: 1069 Date of Entry: 2007-04-10

Article title:	Traveler response to information: who responds and how?
Article reference details	Bottom, J., Masroor, H., and Lappin, J. (2002). Traveler response to information: who responds and how? TR News, 218, 25-30.
Web Address:	
Source project (if applicable):	
Contact name:	Jane Lappin
Affiliation:	Volpe National Transportation Systems Center
EMail:	lappin@volpe.dot.gov
Sponsor(s):	
Country/Region/City:	International coverage, but mainly US

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This article aims to provide more insight into who uses travel information and how it is used.
Description/method:	This article reviews 25 (mostly academic) papers regarding travel information use and summarises the main outcomes.
Findings/conclusions:	Potential users of travel information can be divided into three groups: 1. control seekers who travel frequently, are comfortable with technology, and like to plan ahead; 2. value-added service buyers who are uncomfortable with maps and computers but appreciate things that make life easier; and 3. wired with children, who have high incomes and long commutes but value convenience. Travel information reduces the anxiety of not knowing the travel conditions. Also, in the case of an unexpected event, activities can be organized at trip end points by calling ahead and rearranging the schedule. Various trip making responses have been observed to travel information, e.g.: destination choice, mode choice, route choice, departure time choice, and parking choice. Travel information users indicated that the following information was the most valuable: 1. incident location, type, and delays; 2. queue lengths; and 3. recommendations and directions for alternative routes. It is as yet unclear to what extent users are willing to pay for information.

Strengths/weaknesses:	This is a succinct overview of the benefits of travel information and user responses to such information. However, in presenting the findings, it often draws heavily on one source in the literature only for each finding.

END

DOCUMENT DETAILS

Compendium ID: 1070 Date of Entry: 2007-05-31

Article title:	Research into the use of the Transport Direct portal by BME groups.
Article reference details	SRA (2004). Research into the use of the Transport Direct portal by BME groups. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr12.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	Social Research Associates
EMail:	office@sraltd.co.uk
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:

This report presents results of research carried out among black and minority ethnic (BME) groups to assess their opinions and level of understanding of the Transport Direct website.

Description/method:

Practical trials of the Transport Direct website were carried out with small family groups in July and August 2004.The following eight communities were researched: Afro-Caribbean, Bangladeshi, Black African, Chinese, Eastern European, Indian, Jewish, and Pakistani). In each community, three families took part in an hour-long session in which they were first asked about their travel behaviour and then invited to test the Transport Direct website by finding out how to travel to two or three destinations. The testing was done in the offices of Social Research Associates in Leicester and in two cases in community centres in London. In total 66 adults attended the research sessions (56% female) from a broad age range. Ten families did have Internet access at home and 14 families did not.

Findings/conclusions:

Public transport is the main mode of transport for most of the participants. When in need of travel information, most respondents go to the train or coach station where they can receive personal attention and be sure of the correct information. The main finding of the research is that most of the problems people have with using the Transport Direct website are general technical or comprehending difficulties which are typical of the entire population and not therefore ethnically related. Some respondents required information about group travel and destinations worth visiting as a day trip. More detail was needed of the facilities at train and tube stations, especially in families with young children. Because

	BME groups tend to have lower incomes and larger families information about the cost of public transport journeys is crucial. The information on the portal is as yet not designed for identifying the cheapest options for group travel. Most difficulties were encountered when trying to input details of the test journeys, with many respondents finding the array of options to select overwhelming. It is recommended to place a welcome note on the home page in different languages and to include a tutorial page in different languages, demonstrating how to use the site.
Strengths/weaknesses:	Although this research fills a gap in the knowledge about the travel information needs of BME groups, overall , relatively few new insights have been provided and few specific recommendations have been made. This is probably due to the main finding that most of the problems encountered in using the Transport Direct website were not ethnically related.

END

DOCUMENT DETAILS

Compendium ID: 1071A Date of Entry: 2007-06-01

Article title:	Traveline – Standard of Trunk Journey Solutions. A report to: Department for Transport.
Article reference details	TAS (2003). Traveline – Standard of Trunk Journey Solutions. A report to: Department for Transport. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/trunkp1.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	TAS
EMail:	
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report presents the results of the first part of a research aimed to assess the quality and accuracy of information provided by Traveline involving a trunk journey element.
Description/method:	A total of 748 'mystery shopper' calls were made in June and July 2003 to Traveline call centres requesting a solution for a journey involving both a local and a trunk element. Where a solution was provided, a call was then made to the relevant operator of the trunk journey to check the information received. Each call centre received 34 calls, a maximum of two per day, with the majority of calls between 0800 and 1800. Five callers were used to make detection of the test calls more unlikely. The trunk journeys were designed to start in a location within the area of the Traveline call centre being telephoned. When the Traveline operator asked for a choice between rail and coach, the mystery shopper stated that they had no preference and asked for the mode that would provide the most convenient journey. A 'right' answer was: 1. the information provided by Traveline exactly matched that provided by the trunk operator, and 2. the journey started and ended at the same time but used different interchange points.

Findings/conclusions:	Two thirds (67%) of calls to Traveline were answered correctly. 14 % of all calls were scored as incorrect, because the mystery shopper was transferred to one of the trunk operators for all or part of the requested journey. The report states that this is a low score, indicating that for nearly every two in five calls to obtain a combined local and trunk journey to Traveline, the customer will receive no information, inaccurate information, or a slower journey. The length of time allowed by the Traveline journey planner for interchange between modes differs from that of the trunk operator. This leads to different journey solutions being offered. It is recommended that the interchange parameters used by all journey planners should be checked. Where possible the NRES and National Express interchange times should be sought and used in Traveline journey planners. The parameters must not be set below those used by the trunk operators. In general, the accuracy of information must be improved so that information supplied by Traveline is comparable to that provided by the trunk operator. The frequency with which information is uploaded onto journey planners should be checked. The number of instances where a caller is transferred to the trunk operator must be reduced. Feedback from the call centres showed that they think the mystery shoppers should have stated a preference for rail or coach, as this is what a member of the general public would do. Also, they pointed out that there are various journey outcomes possible according to different journey planners (e.g., Qjump and NRES), which makes it difficult to assess which outcome Traveline is expected to match.
Strengths/weaknesses:	This is a factual report about the performance of the Traveline phone service.

END

DOCUMENT DETAILS

Compendium ID: 1071B Date of Entry: 2007-06-01

Article title:	Traveline – Standard of Trunk Journey Solutions. Phase 2. Final report to: Department for Transport.
Article reference details	TAS (2005). Traveline – Standard of Trunk Journey Solutions. Phase 2. Final report to: Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/trunkp2.pdf
Source project (if applicable):	
Contact name:	
Affiliation:	TAS
EMail:	
Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This report presents the results of the second part of a research aimed to assess the quality and accuracy of information provided by Traveline involving a trunk journey element.
Description/method:	Between April and May 2004, 748 'mystery shopper' calls were made to Traveline call centres requesting a solution for a journey involving both a local and a trunk element. This time, the mystery shopper stated whether he or she wanted to travel by rail or coach. Otherwise, the same methodology has been applied as in the first part of the research.
Findings/conclusions:	More than three quarters (78%) of the calls to Traveline were answered correctly, which is an improvement compared to the results of the first part of the research (67% of the calls answered correctly). Still, this falls considerably short of the Traveline target of 95% accuracy. Therefore, it is vital that measures are taken to improve the accuracy of information that is being provided. In 4% of the calls, the mystery shopper was transferred to one of the trunk operators for all or part of the requested journey (previously 14%). In 10% of calls the information provided by Traveline was not consistent with the information provided by the trunk operator. Traveline has not breached the minimum interchange times in any of the calls. The report identifies two key sources that have reduced the accuracy of trunk information: the call centre staff and the journey planner. Staff should be properly trained (e.g., in their knowledge of the rail network and of facilities at stations), whereas problems with the journey planner such as lack of data or inaccurate data need

	to be resolved.
Strengths/weaknesses:	Similar to the first report, this is a factual account of the performance of the Traveline phone service.

END

DOCUMENT DETAILS

Compendium ID: 1072 Date of Entry: 2007-04-10

Article title:	Modeling the impact of travel information on activity-travel rescheduling decisions under conditions of travel time uncertainty.
Article reference details	Sun, T., Arentze, T., and Timmermans, H.J.P. (2005). Modeling the impact of travel information on activity-travel rescheduling decisions under conditions of travel time uncertainty. Transportation Research Record, 1926, 79-87.
Web Address:	
Source project (if applicable):	
Contact name:	Zhongwei Sun
Affiliation:	Eindhoven University of Technology
EMail:	Z.Sun@bwk.tue.nl
Sponsor(s):	
Country/Region/City:	The Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This paper elaborates a framework developed in earlier studies to model the use and value of travel information in the context of scheduling and rescheduling decisions of individuals. A second purpose of this paper is to derive theoretical implications from the model.
Description/method:	The model system is implemented in a microsimulation system. The system simulates the perceptions, cognitive processes, and choice behaviour of an individual in an uncertain traffic environment. A Bayesian belief updating mechanism is incorporated in the model so that beliefs about travel times or any other uncertain event are updated each time information is received and real outcomes are experienced. Hence, in the model the perception of credibility of the information source as well as the existing uncertainties change through learning over time. In the simulation, a simple four-activity schedule, home-work-shopping-home, was used and the uncertain event is the travel time from work to the shopping location.

Findings/conclusions:	The value of travel information is conceptualized as the extent to which information about travel time (or any other relevant state of the system) improves activity-travel scheduling decisions at the beginning of the day and during execution of a schedule. Learning a traffic environment based on experience does not necessarily mean the value of information decreases over time. Instead, the value of information is a function of the degree of uncertainty and only if uncertainty decreases with learning will the value show a decreasing trend. The (perceived) credibility of information tends to have a strong impact on the value of information. At the same time, the impact of the uncertain outcomes on perceived utility determines the value of information and, hence, the inclination of using information. The authors conclude that the nature of the transport system, the schedule context, and the individual's perceptions and ability to learn all should be taken into account in generating valid estimates of the value of information.
Strengths/weaknesses:	This paper clearly describes an approach to model the value of travel information that takes into account learning mechanisms of individuals and their activity scheduling context. Nevertheless, the assumptions that are made in the model raise the question how realistic the results are. For example, it is assumed that individuals use a scenario-based approach (an individual generates a schedule for each possible scenario and will take all other possible outcomes into account when evaluating the schedule alternative), which might not resemble reality.

END

DOCUMENT DETAILS

Compendium ID: 1073 Date of Entry: 2007-04-09

Article title:	A methodology for sustainable traveler information services.
Article reference details	Lo, H. K., and Szeto, W. Y. (2002). A methodology for sustainable traveler information services. Transportation Research B, 36, 113-130.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	Hong Kong University of Science and Technology
Country/Region/City:	Hong Kong

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This study develops a mixed-equilibrium model to consider the implementation of RPG (Route Planning and Guidance) services.
Description/method:	The market penetration of RPG services is modelled in an elastic manner. The perspectives of the following three parties are considered: 1. Service providers (whose objective is profit driven); 2. Traffic management agencies (whose objective is to reduce congestion), and 3. Users (whose objective is to save travel time at an affordable service charge). A methodology is introduced that studies the relationships between these conflicting objectives and their tradeoffs. Numerical results of a small existing network located in the western suburb of Hong Kong are provided to illustrate the behaviour of the model.
Findings/conclusions:	In most of the numerical experiments conducted, the information service providers hold back on improving the information quality, which results in quite a different optimum compared to the traffic management agency's optimum. The government can do better by introducing policy elements to shift the equilibrium, such as regulating the service charge and improving the information quality for the service providers. Specifically, the government could subsidise the data acquisition costs for the service providers or subsidise the service charge for users. Both types of subsidies benefit all parties, though the extra reduction in total travel time is modest. An unexpected outcome was that subsidising the service charge actually doubles the profit of the service provider, due to an

	increase in the market penetration and an increase of the collected service charge. Overall, the results show that it may not be possible to determine a unique set of decisions to optimize for all objectives. The outcomes are sensitive to the total demand, the network, and various cost parameters, rendering the outcomes difficult to be anticipated. The trade-off is likely to be case specific and network dependent.
Strengths/weaknesses:	This article gives a well-balanced view on the modelling possibilities of the various actors that are involved in the provision of travel information. It could have expanded a little more on the role the government might play to influence the quality of information provision, even though this is not its focus.

END

DOCUMENT DETAILS

Compendium ID: 1074 Date of Entry: 2007-04-09

Article title:	Motorway/Trunk Road Users Survey 9th Wave (November 2006).
Article reference details	FDS International Ltd (2007). Motorway/Trunk Road Users Survey – 9th Wave (November 2006). Draft report prepared for SERCO.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	SERCO
Country/Region/City:	UK, England

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:

This report describes how motorists obtain pre-trip and en route travel information, how they use this information, and how they value the information received.

Description/method:

Face-to-face interviews were conducted with 562 motorway and trunk road users at service stations in England in November 2006. Quotas were set to reflect the range of drivers in terms of age, gender, and vehicle type. Quarterly surveys have been conducted since October 2004.

Findings/conclusions:

The proportion of road users ever checking road conditions before travelling has declined from 46% in 2005 to 38% in 2006. Seven in ten (69%) of all drivers had, in the last three months, received reports of accidents, heavy traffic delays, or road works while travelling, which is in line with previous waves. Of those who learned of congestion ahead while driving, 57% took action. Over the nine waves of the survey, there has been a marginally significant increase (from 64% to 70%) in the proportion of drivers with an in-car entertainment system using a Traffic News facility. Looking at the share of motorway screens as an information source, a decline can be observed (63% received information via motorway screens) after a peak between October 2005 and April 2006. The proportion of respondents who rated the credibility of VMS as high or very high has increased from 51% in October 2004 to 61% in November 2006. Women, those under 35 years of age, and people who travel less than once a week on the motorway are less likely to check road conditions before travelling. Of those respondents ever seeking advance information,

45% do so every time they travel, while 34% do so if they are making a long journey and 22% do so if they are making an unfamiliar journey. Radio is the most popular source of pre-trip information, followed by the AA website. Typically, drivers want to learn about delays, roadworks, and accidents and incidents. The majority (88%) of the 137 respondents who received advance warning of congestion on their intended route in the last three months undertook action: 83% travelled on a different road, 14% travelled at a different time of day, and 2% travelled on a different day. 88% of drivers who took action as a result of pre-trip information claimed the information was accurate. The most important reasons for not seeking any pre-trip information are: use radio while en route (30%) and can't be bothered (29%). One in five of those who currently do not seek pre-trip information state that they do not know where to find this information. Nearly half (47%) of the respondents would use the radio and 15% would use the AA website when asked where they would obtain travel information from. Respondents travelling more than 100 miles are more likely to use a traffic news facility compared with those making shorter journeys of less than 50 miles. In the nine waves of the survey to date the proportion of drivers who take action has fluctuated between 51% and 64% with no discernable pattern. Those listening to the radio have been consistently more likely to take action (61% in the latest wave) than those reading motorway messages (47% in the latest wave). Regardless of undertaking action or not, the majority of the drivers (80%) felt they made the right decision. 38% of those who received warnings of congestion while driving said they wanted further information about: alternative routes, estimates of how long delays will continue, earlier notifications of delay, and more accurate and up-to-date information.

Strengths/weaknesses:

This report provides empirical data about actual pre-trip and en route traffic information use of car drivers over a two-year period of time. Only descriptions are offered, however, no multivariate analysis techniques have been applied that could explain the level and type of information use.

END

DOCUMENT DETAILS

Compendium ID: 1075 Date of Entry: 2007-04-09

Article title:	Valuation of travel time and traveller information in multimodal personal travel under uncertainty.
Article reference details	Rietveld, P. (2003). Valuation of travel time and traveller information in multimodal personal travel under uncertainty. Tinbergen Institute Discussion Paper No. 2003-036/3.
Web Address:	http://papers.ssrn.com/sol3/papers.cfm?abstract_id=407880
Source project (if applicable):	
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Country/Region/City:	The Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	The aim of this paper is twofold: 1. to discuss the implications of ignoring reliability issues in value of time studies, and 2. to consider the impacts of information provision on value of time in transport.
Description/method:	Conceptual issues on reliability are discussed, as well as uncertainty implications for the valuation of travel time savings in multimodal trips under various settings.
Findings/conclusions:	Transport modes with scheduled services will systematically benefit from information provision. The lower the frequency, the higher the benefit of information provision. Easier access to information sources will stimulate demand of public transport services, especially when frequencies are low. Better access to pre-trip information will help to overcome an overestimate of the value of time in public transport, reducing biases in estimates of values of time. Traveller information systems should inform the traveller on the day-to-day reliability of actual services (e.g., the traveller needs information about the probability that the interchange at B for his trip from A to C will run smoothly, or that he will miss the connecting bus or train). Providing travellers with information at a trip specific level, instead of at a network level, will enable them to better assess the risks of late arrival and will also prevent them from overestimating the delays involved. The author concludes that three reasons exist why information provision leads to lower generalised

	costs of travellers: 1. Better information enables travellers to adjust their choices so that generalised costs are lower compared with the situation without this information; 2. Availability of en route traveller information and mobile communication technology could lead to lower costs of arriving late by their ability to warn other people about the late arrival; 3. Travellers may appreciate information on the projected travel time. As long as uncertainties are not well specified in value of time studies, one may expect that they will lead to overestimates of the value of time.
Strengths/weaknesses:	This paper clearly outlines the potential benefits of travel information in the public transport sector. However, its conclusion that information provision on public transport will lead to higher public transport use is not well supported. The paper fails to describe how public transport could become an alternative for travellers who do not use public transport at all. Additionally, it does not elaborate on how time table information of public transport services will have a downward effect on waiting times and scheduling costs, which makes public transport more attractive. Moreover, it is assumed that when information provision leads to lower generalised costs of travellers this implies a certain willingness to pay for information. However, this assumption is not well explained.

END

DOCUMENT DETAILS

Compendium ID: 1076 Date of Entry: 2007-06-01

Article title:	Focus Group Research. Future Transport Direct Channels & Services.
Article reference details	Systems Concepts Ltd (2004). Focus Group Research. Future Transport Direct Channels & Services. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/mr11.pdf
Source project (if applicable):	
Contact name:	Sarah Durham
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Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☑
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This report presents the results of focus groups that were conducted to assess the feasibility of delivering Transport Direct via new channels and services, such as SMS, PDA, and a kiosk.
Description/method:	Four different traveller types attended the focus group sessions and two channels were presented at each group :1. business traveller (PDA, WAP), 2. student (SMS, Smart phone), 3. local public transport traveller (kiosk, WAP), and 4. leisure/casual labour (kiosk, SMS). The sessions were held in the offices of System Concepts in London.
Findings/conclusions:	Overall, reactions differed between the channels/services. Participants generally felt that PDA, kiosk, and Smart phone would be better channels to provide the travel information that they needed. Ordinary mobile phones (SMS and WAP) were thought to have screens that were too small to read features such as maps. Also, people were concerned about receiving too many text messages and the costs involved. Participants were less concerned with the cost of accessing the Internet via PDA and Smart phone and some indicated that they would be willing to pay a little to use kiosks (provided they got a print-out). Also, the participants' preferences appeared to suggest that they are attracted to 'higher bandwidth' channels/services. The business traveller group showed a preference for the PDA, the students for Smart phone, while both the local public transport traveller group and the casual labour group showed a preference for the kiosk.

Strengths/weaknesses:	The results in this report are tabulated with a high level of detail, which makes them difficult to process in forming an overview of the main findings. More description/interpretation and less tables/lists would have enhanced the accessibility of the report.

END

DOCUMENT DETAILS

Compendium ID: 1077 Date of Entry: 2007-06-01

Article title:	Traveline Research Project Executive Summary
Article reference details	TTR (2003). Traveline Research Project Executive Summary. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/traveline_futures.pdf
Source project (if applicable):	
Contact name:	Phil Barham
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Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:

This executive summary presents the main findings of a research conducted to establish the effectiveness of the Traveline information service.

Description/method:

The attitudes and requirements of existing users of Traveline were investigated using focus groups, in-depth telephone interviews, and a quantitative telephone survey amongst a random sample of 1008 callers to four call centres. These surveys were supplemented by analysis of call record data from the Plymouth call centre. Evidence as to the types of information people look for when planning and making a journey by public transport was gathered by means of qualitative and quantitative research using focus groups and a nationwide on-street survey of 1000 members of the general public.

Findings/conclusions:

The public in general know little or nothing about Traveline, although the majority of people would use a telephone enquiry service to obtain information about public transport journeys. The majority of Traveline callers surveyed were women making short distance bus journeys. More than half of the respondents had some access to a car. Two-third of the sample had already made the journey that their enquiry was based on before calling Traveline. The main reason for using Traveline is the reassurance of a human voice, although 15% of those questioned feel the information to be more trustworthy and 14% like to double check information they already have. Most respondents were occasional callers or called Traveline for the first time. Two-thirds of enquiries are about bus journeys, 17% are about train journeys, and 13% about both bus and train. Most people call either

	on the same day or the day before their journey, and enquire most often about short distance journeys, although 23% of the enquiries were about long distance journeys. Asked about what they would do if they had not been able to call Traveline, 3% indicated they would have travelled by car and another 3% said they would not have travelled at all, whereas the majority of travellers indicated they would have found the information from somewhere else. There is a particular demand to have information on special offers and discounts, especially from bus operators. The results show that existing Traveline users think that the service should extend its opening hours beyond from 0800 to 2000 hours. It is recommended that Traveline needs greater promotion.
Strengths/weaknesses:	Since this is an executive summary, not much information is available about the methodology, nor exact percentages for the results.

END

DOCUMENT DETAILS

Compendium ID: 1078 Date of Entry: 2007-05-21

Article title:	The impact of advanced traveller information services on travel time and schedule delay costs.
Article reference details	Szeto, W. Y. and Lo, H. K. (2005). The impact of advanced traveller information services on travel time and schedule delay costs. Journal of Intelligent Transportation Systems, 9, 47-55.
Web Address:	
Source project (if applicable):	
Contact name:	W. Y. Szeto
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Sponsor(s):	Hong Kong Research Grant Council
Country/Region/City:	Hong Kong

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This study develops an analytical dynamic mixed-equilibrium model to describe the transportation system performance with Route Planning and Guidance (RPG) services. The model considers travellers' propensity to subscribe to the service at different charge levels. The effect of the service charge is investigated on three parties: 1. equipped drivers (concerned with their reductions in travel costs), 2. society in general (concerned with reductions in the total generalized travel costs), and 3. the transportation management agency (concerned with reducing network congestion).
Description/method:	An analytical dynamic mixed-equilibrium model was developed which considers both travellers' departure time and route choices in a stochastic framework for two types of travellers: users and non-users of RPG services. The route and departure time choices of travellers are assumed to follow a nested logit formulation: first departure time is decided, followed by the route. A general transportation network with multiple origin-destination flows is considered. The effect of RPG service pricing is studied on the following five performance measures: total travel time cost, total schedule delay cost, total generalized travel cost, user benefit, and market penetration. A numerical study was conducted.

Findings/conclusions:	The results show that under certain network conditions, the objectives of the three parties studied may conflict with each other. Even if the RPG service is beneficial in the eyes of the subscribers and society in general, it may be perceived as detrimental in the eyes of the transportation management agency. All travellers, regardless whether they subscribe to the RPG service or not, enjoy the service because they all are better off in terms of total generalized travel cost (i.e. travel time cost plus schedule delay cost). The surprising result , however, is that the network faces more severe congestion. This seemingly paradoxical phenomenon is due to the much lower schedule delay cost incurred on travellers with RPG services, which more than compensates the higher travel time cost of the more congested network. This finding indicates the importance of considering RPG services from a more comprehensive perspective. When schedule delay cost is included as part of the benefit assessment, the system can still benefit substantially in terms of total generalized travel costs, despite the occurrence of a more congested network (or a higher travel time cost).
Strengths/weaknesses:	This article points out potential unforeseen consequences of travel information use on the level of the transport system.

END

DOCUMENT DETAILS

Compendium ID: 1079 Date of Entry: 2007-04-19

Article title:	Research Project MR13: Challenges in monitoring and evaluating the public's feedback concerning the travel information marketplace. Work-Package One - Literature Review.
Article reference details	Vipre, (2006). Research Project MR13: Challenges in monitoring and evaluating the public's feedback concerning the travel information marketplace. Work-Package One - Literature Review. Report to the Department of Transport.
Web Address:	http://www.dft.gov.uk/transportdirect/research/evaluation
Source project (if applicable):	
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Sponsor(s):	Department for Transport
Country/Region/City:	International coverage

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☑
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	The report presents the findings of a literature review that was conducted for two reasons: 1. to examine the current approaches evaluating public feedback within the Transport Direct Programme, and 2. to identify and critically review examples in academic and industry literature of attempts to obtain and evaluate public feedback concerning travel information.
Description/method:	This report constitutes the first of three Work Packages and is designed to lay the foundations for the subsequent two reports. It deals with the following topics: the evaluation of similar transport information portals and public information portals, measurements of behavioural responses to transport information, measurements of customer satisfaction, and a review of the current evaluation of Transport Direct.

Findings/conclusions:	Transport Direct is recommended to revise the goals and objectives of the current evaluation framework. The AIDA (Awareness, Interest, Desire, Action) advertising process model is a cornerstone of the current framework, but critics suggest that consumers will not always go through each step at all, or in the order of the model. Evaluation of the delivery of public transport information via Internet pose challenges related to sample selection and size, contact strategies, and response rates. One way of tackling the challenges of sampling Transport Direct users would be to set up a public reference group (or panel of people) who are willing to participate in a number of evaluation processes. The reviewed literature indicates that well designed stated and revealed preference techniques could provide valuable insight into the intended behavioural changes resulting from use of the Transport Direct portal. Triangulation is recommended, since a comparison of different research approaches to the same study could provide insight into the reliability and validity of the results. The current evaluation of Transport Direct has only limited capacity to triangulate results. A set of key performance indicators are suggested, such as: number of abandoned visits, number of site errors experienced, average site speed, barriers to accessing the site, number of complaints, and accuracy of information provided.
Strengths/weaknesses:	This report gives a thorough overview of the methodological issues regarding the evaluation of a multimodal travel information service such as Transport Direct.

END

DOCUMENT DETAILS

Compendium ID: 1080 Date of Entry: 2007-04-24

Article title:	Research Project MR13: Challenges in monitoring and evaluating the public's feedback concerning the travel information marketplace. Work-Package Two - Report.
Article reference details	Vipre, (2006). Research Project MR13: Challenges in monitoring and evaluating the public's feedback concerning the travel information marketplace. Work-Package Two - Report. Report to the Department of Transport.
Web Address:	http://www.dft.gov.uk/transportdirect/research/evaluation
Source project (if applicable):	
Contact name:	John Pinkard
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Sponsor(s):	Department of Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	The document reports the findings of work undertaken to meet the following objectives: 1. to examine the current approaches to evaluating public feedback within the Transport Direct programme; 2. to determine what ambiguities and gaps potentially exist in the feedback considered; 3. to explore research methodology options and approaches that could remedy such ambiguities and gaps; 4. to determine what information needs to be collected to identify the key features on the portal which drive overall perception of the portal's reputation.
Description/method:	This report constitutes the second of three Work Packages. In order to understand the underlying ambiguities relating to satisfaction with Transport Information Services (TIS) 30 cognitive interviews were carried out in 'hall test' type sessions in Edinburgh and Crawley. During the course of the interview respondents were asked whether and what they understood by particular questions. The sample consisted of adults who had used TIS. Furthermore, 15 in-depth telephone interviews were conducted with users of Transport Direct who had completed a pop-up survey. This survey was only shown to those who had printed information from the portal. Prior to conducting the interviews, respondents who had not visited the Transport Direct portal recently were asked to do so in order to refresh their memory of the site. Finally, in order to receive feedback on an early draft of a new evaluation framework for the Transport Direct portal, 5 interviews were held with key

	players in the Department for Transport and Transport Direct.
Findings/conclusions:	The most common types of journeys for which respondents used TIS were non-local and atypical journeys, which could be holidays, day trips, trips to friends or family, business trips, or trips to concerts or sporting events. Respondents used both online and telephone services. Often two websites were used to meet a person's information needs. One person out of the 30 interviewed was aware of, and had used, Transport Direct. The minority of respondents indicated they were not likely to use Transport Direct, giving reasons such as not liking the Internet, and only using the car and going on journeys they know well. Most often they cited that they already used a travel information service which suits their needs. When asked about their satisfaction with TIS, some respondents were referring to the helpfulness of staff in a telephone-based TIS they had used rather than the helpfulness of the information itself when they rated this aspect. When scoring their satisfaction with TIS, most respondents did not consciously consider a specific timeframe. The authors conclude that current information services do meet the needs of travellers. Little real demand for comparison between different modes of transport for a single journey was found. Also, no evidence was found that respondents were looking for information on door-to-door journeys involving multi-modal travel. The authors rightly draw attention to the potentially biased sample of telephone interviews (only people who have used the print function of the portal were included in this study). They found that users appear to be relatively highly satisfied with the Transport Direct Portal. Satisfaction was closely linked to expectations (those with lower expectations reported higher satisfaction levels) and on comparisons made with other web sites. Key drivers of satisfaction are: ease of use and satisfying a particular information need (often related to the multi-modal integrated nature of the information that allowed people to plan complicated journeys or give an overview of different options).
Strengths/weaknesses:	This report provides valuable insight into how respondents interpret questions about their attitudes towards travel information services and their use of such services. It shows what discrepancies could occur between how researchers intend their questions and how they are actually understood. However, very few suggestions are made about how to overcome such problems.

END

DOCUMENT DETAILS

Compendium ID: 1081 Date of Entry: 2007-05-21

Article title:	Transport Direct Evaluation: Final Report.
Article reference details	AEA Technology, (2007). Transport Direct Evaluation: Final Report. AEAT/ED50207/R3.. Department for Transport.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This is the final report of the interim evaluation of the Transport Direct (TD) programme carried out by AEA technology and TTR Ltd for the Department of Transport during 2006.
Description/method:	The Office of National Statistics (ONS) Omnibus survey was used to monitor awareness and use of Transport Direct and other travel information services. A pop-up questionnaire on the Transport Direct portal was used to understand who is using the portal, what they do as a result of information provided, and the level of user satisfaction. Both before and after the launch of the portal, face-to-face interviews with DfT staff and other stakeholders were held.
Findings/conclusions:	The number of portal user sessions has increased and the programme's target of 10 million cumulative user sessions by 2006 was achieved on 1st December 2006. However, public awareness and use of the Transport Direct portal remained low: only 5-9% of the ONS survey respondents had heard of Transport Direct and only 1-4% had used the service over the preceding six months. It seems that the limited marketing efforts undertaken by the programme have not been successful in raising awareness. Nevertheless, although the number of users has not increased much, a core user base of satisfied users is likely to exist who now use the site more regularly than they did. There are no discernible seasonal trends in the data on awareness and use, with the exception of small increases in usage associated with the holiday season (perhaps due to unfamiliar leisure journeys and/or more checking of public transport timetables). The ONS data

	shows that a greater proportion of men than women claim to have heard of TD, however, there is no discernable difference in their usage of the site. Results from the online survey show that slightly more men (53%) than women (47%) responded. ONS data show that the 16-24 age group seems to be most aware of TD, while the online data suggest that most current users are aged between 25-54. The majority of users would use TD to plan a journey for themselves that is unfamiliar and long distance (50% said they were planning a journey between 10 and 100 miles and 34% over 100 miles). Use of the Transport Direct service seems to lead to a modest amount of modal shift from car to public transport of about 5% (and also 5% from public transport to car). Less than half of the users (43%) use TD to plan door-to-door journeys; 46% looked only at trains using short-cut buttons, while 4% viewed only car journeys and 3% looked at coach journeys only. Portal user satisfaction levels appear to be high (especially regarding ease of use and comprehensiveness) , but may be biased positively by the positioning of the pop-up questionnaire on the website. There were lower levels of satisfaction with the speed of the site and the mapping functions. The majority of stakeholders have a very positive view on the TD programme and portal, although there is less consensus on the efficiency and value for money on the portal development.
Strengths/weaknesses:	The results about modal shift need to be interpreted very carefully, due to the small sample size and the fact that intended rather than actual travel behaviour was measured. Otherwise, this report provides valuable insight into the awareness and use of a multimodal online journey planner, supported by empirical data.

END

DOCUMENT DETAILS

Compendium ID: 1082 Date of Entry: 2007-05-25

Article title:	Travel and traffic information – moving from vision to reality.
Article reference details	Umpleby, G. and Glen, J. (2004) Travel and traffic information – moving from vision to reality. Traffic Engineering & Control, 45, 244-246.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This three-page article discusses how Common Data Management Facility can assist the development of travel and traffic information systems by enabling effective integration of new and legacy systems.
Description/method:	The first half of the article sketches an ideal situation (the Vision) of integrated travel information systems, while the second half (the Reality) illustrates how this integration can be achieved.
Findings/conclusions:	Access to fully integrated traffic and travel information systems will become a necessity. Common Data Management Facility assists by bringing together data from several systems so that a complete 'travel information picture' can be determined and delivered. The data management application accesses data from a number of discrete sub-systems, holding re-usable data in a common repository - known as the 'common database'. Standards such as Urban Traffic Management and Control (UTMC), the Travel Information Highway (TIH), and the Real Time Information Group (RITG) can be used to deliver low risk, simple, and cheap interfaces between systems. Other applications such as the Internet, mobile phone, and digital radio broadcasting handle the distribution and dissemination of the information. Together these databases and applications constitute a Common Data Management Facility. Delivered projects have shown that data from discrete sub-systems can be held centrally and an integrated Display application can access both data sets to provide a consolidated picture. As the data changes, a

	mechanism has been established to rapidly update this integrated picture without the necessity to continually access several systems independently. Also, a third party application (the Strategy Management Function) can be developed to access and harness this data to provide operators with decision making support. An example of Common Data Management Facility is the employment of a web-based Car Park Guidance and Information System that has been extended to include on-street Variable Message Signing by the Norfolk City Council. A second example is the data integration from various discrete sources by Lancashire County Council as part of their Urban Traffic Management and Control programme. The Strategy Management Function enables Lancashire County Council operators to assess the loading on their City road network in the event of incidents on the nearby M6 motorway. Thus, a comprehensive view of traffic conditions is provided in and around Preston. The authors conclude that the advent of Common Data Management Facilities is opening up new horizons and possibilities in the provision of truly integrated travel information based on data from several hitherto discrete data sources.
Strengths/weaknesses:	A short, but clear article that argues the case for Common Data Management Facility.

END

DOCUMENT DETAILS

Compendium ID: 1083 Date of Entry: 2007-06-02

Article title:	Responses to Transit Information among Car Drivers: Regret-based Models and Simulations
Article reference details	Chorus et al. (2006), Transportation Planning and Technology 29(4), 249-271
Web Address:	
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Sponsor(s):	
Country/Region/City:	General

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	This paper reviews and develops a regret-based approach to model travellers' choices under uncertainty (see entry 1001 in this compendium for more explanation). The paper try to answer the following: 1) what would be the potential of transit information for mode choice adaptation among those travellers that do not have one or more transit options in their choice set, but generally favour private car? 2) what are the determinants beyond non-habitual car drivers' choices whether or not to acquire available information and consider changing travel mode?
Description/method:	The authors provide a large set of assumptions on travellers' mode choice, inspired from non-transport research and general literature, as well assumptions that are not supported by literature. They develop a theoretical model of travel choice behaviour, and test it by simulation.
Findings/conclusions:	1) Perceived value of acquiring transit information is limited; 2) Even in the case where transit information is acquired, and the message is favourable to transit, its impact on mode choice is limited; 3) conservative estimates regarding the impact of transit information provision on modal shift would be realistic; 4) need for dynamic, rather than static, travel information on transit options

Strengths/weaknesses:	This is a theoretic paper which develops some interesting concepts. The method, based on an abstract model based on a set of unvalidated assumptions, with no laboratory or field study, lead the reviewer to believe that the finding/conclusions should be questioned. [entry #1001 in this compendium provides some empirical evidence to support some of the arguments made in this paper - but due to research limitations concerns have been made on the validity of this paper as well). Moreover, some of them (such as #4 above) are in conflict with the findings of other works. The regret-based model is not compared with other models and its added value is not clear.

END

DOCUMENT DETAILS

Compendium ID: 1084 Date of Entry: 2007-05-30

Article title:	Next generation of advanced traveller information services: from the motorist's perspective.
Article reference details	Karl, C. A. and Trayford, R. S. (2001). Next generation of advanced traveller information services: from the motorist's perspective. Paper presented at the 8th World Congress on ITS.
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Country/Region/City:	Australia

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☑
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This paper discusses the information needs of motorists and the development of traffic models and content data bases covering entire metropolitan areas. The results of trials in Melbourne and Sydney providing customised content by SMS messages and more detailed traffic maps via a website are discussed as well.
Description/method:	In October 1999, an ongoing traveller information trial started in Melbourne with 70 participants using pre-trip and en-route text (SMS) messages and voice. In September 2000, a test Internet website with travel time maps and current incidents was established for Sydney and operated during the morning commute. A test WAP site was also established in March 2001.
Findings/conclusions:	The authors suggest that as motorists' knowledge about traffic conditions and patterns increases, they also become more capable of processing different types of traveller information. Looking at the nature of information, the authors argue that information resides not in artifacts (as an object that needs to be acquired and processed), but in the minds of individuals where it is subjectively constructed. The main challenges for the next generation of traveller information systems will be the efficacy as well as the efficiency of the information provided, taking into consideration the safety aspects and the human computer interface. The content of such information systems will be customised and

	personalised, point to point (enabling the selection of millions of origin and destination pairs, covering a metropolitan area), providing predictive, real-time, and historical travel times. Content will be integrated with routing, location, and navigation systems already being introduced into the market. Such content needs to be deliverable (audio based or visual based) across a range of display devices, generically comprising of out-of-vehicle devices, in-vehicle devices, and personal portable devices. Not only the content but also the requirements of the user requires attention. It will be a challenge to interpret these requirements, since each motorist's knowledge of both traffic and routes is different. The trial participants had never received customised, predicative traveller information before. Initially the majority of participants found the information to be of little value, as they had no previous experience in acting upon information of this type. As the trial progressed, the participating motorists found that they were able to derive value from the daily information they received as they began to interpret this information against a growing history or knowledge of previous traveller information. The most valued information for motorists is dynamic information. The authors conclude that to decide what to tell the motorist (or 'pushing' out the information) or working out how the motorist can select the precise content required (or 'pulling' the information) is the challenge for the content provider.
Strengths/weaknesses:	Overall, this paper provides some interesting insights about the potential evolution of travel information services for motorists and their use.

END

DOCUMENT DETAILS

Compendium ID: 1085 Date of Entry: 2007-06-01

Article title:	Travel Information Services. Wave 8 - 14th to 19th September 2006
Article reference details	GfK NOP (2006). Travel Information Services. Wave 8 - 14th to 19th September 2006. Department for Transport.
Web Address:	http://www.transportdirect.gov.uk/research/pdf/0610wave8.pdf
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Sponsor(s):	Department for Transport
Country/Region/City:	UK

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	This document is part of on-going research that aims to provide more insight into the awareness and behaviour in relation to transport information services in general and Transport Direct in particular.
Description/method:	Since November 2004, every 3 months a representative sample of the national population of approximately 2,000 adults is interviewed face-to-face (using an Omnibus survey) about their awareness and use of various travel information services in general, and Transport Direct in particular.
Findings/conclusions:	Overall, the findings show that little has changed since 2004, except that the actual usage of travel information services continues its trend towards the Internet at the expense of the telephone. More than 80% of the sample was unaware of Traveline, Transport for London, Trainline and Transport Direct, while only half was aware of the telephone service of National Rail and the website of National Express. Nearly half (46%) of the sample had never used any travel information service before, while 28% indicated to have used a phone based service. Amongst Internet users, 40% stated to have ever used a web based service. The National Rail Enquiries phone service is relatively most often used with 22% of the respondents indicating to have ever used it, followed by the AA website with 16%. Only 1% of the sample indicated to have ever used Transport Direct. Travel information services are mostly used for day trips, visiting non-local friends, and holidays. The most useful service from Transport Direct remains unchanged: "Quickest way from A to B" is

	still leading the field by a long way, followed by "Cheapest way from A to B". Although online advertising and web search are important sources of advertising for Transport Direct (after television being the most important source), two-thirds of those saying they had seen an advertisement of Transport Direct online were unable to identify on which website they had seen it. Three-quarters of those who saw the online advertisement were not motivated by it to use the Transport Direct website.
Strengths/weaknesses:	This longitudinal research is valuable, because it enables a comparison over time of the awareness and use of various travel information services in the UK.

END

DOCUMENT DETAILS

Compendium ID: 1086 Date of Entry: 2007-05-11

Article title:	Analysis of Users' Needs for Provision of Multi-Modal Transport Information Based On Social Experiment
Article reference details	Sato, K., Nakamura, F., Fujiwara, A., Makimura, K. (2001). Analysis of Users' Needs for Provision of Multi-Modal Transport Information Based On Social Experiment. 8th World Congress on ITS
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RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To examine the user's attitudes toward multi-modal information provided in home or office prior to trip making.
Description/method:	A social experiment was carried out for four weeks, in winter 2000, providing real time travel on cable TV for a residential area of Hiroshima. This covered travel conditions by road (car) and the semi-automated guided transit (SAGT) to the city centre. Two questionnaire surveys and workshops were carried out before and after the experiment. The first survey two months before the experiment was to grasp the distribution of the potential users in the residential area; it also aimed to predict the number of users changing travel behaviour. The "before-the-experiment" workshop was held for interested potential users. The experiment for providing the information was designed to reflect the user's requests and attitudes obtained from the survey and workshop. Another questionnaire survey was conducted just after the experiment, seeking respondents' actual travel behaviour from provision of the information. This was followed by an "after-the-experiment" workshop. The number of valid respondents was 335 for the first survey and 312 for the second. Respondents' travel modes were shared roughly equally between cars and the SAGT.

Findings/conclusions:	The surveys showed that the percentages of SAGT and car users requiring various types of information rose substantially after the experiment; but levels of interest remained relatively low overall. SAGT users showed interest in highway information and car users in SAGT information. Car users and SAGT commuters who used the information during the experiment changed their travel modes more than those who did not, for both commuting and personal travel, indicating that multi-modal travel information can change travel modes. This reflected views on possible changes expressed at the workshops. Users wanted further information about in-vehicle congestion and transfer time to other transit modes on SAGT and about frozen road sections. Users considered that insufficient promotion of the experiment has occurred to offer full benefits.
Strengths/weaknesses:	The technique of 'social experiment' was valuable in combining research with practical promotion of a service. However the service and the consequential research were limited to one corridor. The participants were not necessarily reflective of the population as a whole, and no assessment was made of this.

END

DOCUMENT DETAILS

Compendium ID: 1087 Date of Entry: 2007-05-29

Article title:	Survey of travel information use in Southeast Pennsylvania.
Article reference details	Hallinan, M.P., Patten, M. L., and Goulias, K.G. (2002). Survey of travel information use in Southeast Pennsylvania. ITS America 13th Annual Meeting, Minneapolis.
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Country/Region/City:	US, Pennsylvania

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	The objective of this study is to understand how residents of Southeast Pennsylvania (the Philadelphia metropolitan area) obtain and use travel information.
Description/method:	A mail-back survey of licensed drivers in the Philadelphia metropolitan area was conducted in April 2002. The survey asked questions about travel information in general and about the SmarTraveler service in particular that provides real time traffic information both online and via telephone. 1,124 usable questionnaires were returned yielding a net response rate of 31%. The median age of the respondents was 50 years old, and higher incomes were over-represented. Slightly more females (54%) than males participated.
Findings/conclusions:	The authors conclude that there is a demand for travel information in the region. Nearly 80% of the sample sought a map of their route before beginning a typical trip outside of their local area. The majority of respondents also sought some type of route information (64%) and turn-by-turn driving directions (54%) before a trip to an unfamiliar area. The current weather and traffic conditions were sought by almost half of the sample as well. Regarding the importance of en-route travel information, the results show that drivers found it very important to find out the location and duration of congestion, as well as alternate routes for road closures and roadway construction information. The most highly rated information is information that decreases travel time by avoiding congested locations. Concerning the importance of travel information in different situations, the

	results show that the most important situation is when arrival time is critical. Respondents found it also important to receive traffic information during bad weather, when stopped in a jam or driving in heavy traffic, and when there is construction en-route. Commercial radio is by far the most useful source of travel information according to the respondents. Variable message signs and television were also reported to be useful in providing roadway information. Only 13% of the sample was aware of the SmarTraveler service, with 81% not knowing that the service existed. Of those aware of SmarTraveler, 24% accessed the web page and 9% accessed the telephone service (which is in terms of the entire sample only 3% and 1% respectively). Those respondents who had used SmarTraveler had a favourable opinion of the information provided.
Strengths/weaknesses:	This study mainly provides descriptive data, rather than giving explanations for travel information use. Its findings should be carefully interpreted, since the sample's median age is relatively high (50 years) and high incomes are over-represented.

END

DOCUMENT DETAILS

Compendium ID: 1088 Date of Entry: 2007-05-11

Article title:	Determining the Current and Future Benefits of Itinerary Planning Systems
Article reference details	Laine, T., & Aaldijk, A. (2003). Determining the Current and Future Benefits of Itinerary Planning Systems. 10th World Congress and Exhibition on Intelligent Transport Systems and Services. Madrid
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RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☑
Context	☑	Evolution	☑
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:

To describe and assess the web-based door-to-door trip itinerary planning system launched by Helsinki Metropolitan Area Council in November 2001.

To evaluate the system's use and effect after one year of usage, as a basis for further development.

Description/method:

The assessment of the Helsinki system comprises a full description of the overall system, itemising the aims, function and coverage of the various elements: database and database loader, routeing engine, user interface, map server and administration tools. The application of this system to other cities' transit networks is then briefly set out.

To evaluate the system, a number of methods were used in combination. Data were obtained from statistics and system log files; user opinions and impact were obtained by Internet surveys (100), Internet feedback files (900) and telephone interviews (300); benchmarking was used for system performance. To estimate socio-economical profitability a calculation model was developed, using statistics and various study results as an input from which to calculate cost-benefit ratio. Benefit calculation was based on users' own experience, covering time saving from better route choice, faster route planning and decreased external cost as some people switch from car to public transport.

Findings/conclusions:	Use of the system grew steadily from the start. 28 % of citizens over 14 years old have used the service at least once, the most active users being 25–34 years old, students and upper officials, and in the highest income group. It is most often used on random trips related to work or free time, but 26 % of the users use it mostly on home-to-work trips. Usage is more popular for areas that often require interchange for travel. With the growing complexity of travel within the metropolitan area, trip information makes public transport travel easier for diverse journeys. 73% of system users now use more information for pre-trip planning, but overall users find they are taking less time to plan trips. Growing use of the system has had little effect on printed information, while telephone enquiry use has dropped by only 10%; both appear to be needed as well. The system cost 220,000 euros to develop, first year marketing cost 60,000 euros, and operating costs are about 110,000 euros per year at present. Investment plus one year's operation amounts to 1.4 euros per user. Annual benefits are estimated at 5–13 million euros, mostly from more efficient route choice; shifts to public transport and faster route planning provide some benefits. Even allowing for over-estimation of gains by users in surveys, there are very high benefits to society. Related to government policy, these are particularly important for public transport efficiency, but there are benefits too for social sustainability, land use development, the environment, and growth of the information society.
Strengths/weaknesses:	This is a clear description and a comprehensive evaluation of an actual system in a major city, reflecting a combination of professional assessments, user surveys and cost benefit analysis. It offers a defined valuation of the system in terms of impact on the transport system, its users and the wider aims of public policy. The work was done after only one year, and the user surveys were non-random; although the report allows for this. Practical lessons are drawn for system development.

END

DOCUMENT DETAILS

Compendium ID: 1089 Date of Entry: 2007-05-29

Article title:	How to keep your traffic information customers satisfied.
Article reference details	Bogenberger, K., Henkel, N., and Göbel, E. (2003). How to keep your traffic information customers satisfied. 10th World Congress and Exhibition on Intelligent Transport Systems and Services, Madrid.
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RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This paper reports the results of a field test designed to probe customer preferences for tradeoffs that occur between timely notification of delays and avoidance of superfluous advice.
Description/method:	Stationary detector data and floating car data (FCD) were used to reconstruct the traffic state on three freeways near Munich where drivers experienced intermittent traffic congestion and received information from several traffic information systems. During 32 days 1,541 trips and 482 congestion events were measured. The tests were scheduled to include congestion due to commuter traffic, weekend and leisure traffic, and (public) holiday traffic. Traffic messages and key intermediate message data were recorded. Ten respondents who had participated in the field tests were recruited randomly from a group of frequent/professional drivers thought to be representative of business customers. Each of the drivers was presented with a reconstructed traffic report and the information they actually received. Then they were asked to describe and quantify traffic information patterns that they would have considered 'very satisfactory' by 'sketching a synthetic report boundary region'.

Findings/conclusions:	Based on the sample, the results show that these drivers would prefer that the system should err on the side of reporting too much rather than too little. Despite the existence of considerable individual variation, it seems that most users would be willing to tolerate a rather high percentage of false alarms (about 4/5) in order to obtain nearly complete coverage. This implies that dynamic traffic information and route guidance systems should be designed for timely notifications of delays, even at the cost of some superfluous warnings. Drivers will not always necessarily decide to change their route even on a positive jam message. Since the driver performs a certain level of 'filtering' by himself, the preference is for more rather than less information. The authors conclude that route guidance is a decision support system, rather than a decision-making system.
Strengths/weaknesses:	The methodology section in this paper is not very clearly described, which makes it difficult to assess the results properly. Also, the described tolerance of false alarms seems to be very high (4/5). Nevertheless, the paper deals with the interesting topic of providing the 'right' amount of information to drivers.

END

DOCUMENT DETAILS

Compendium ID: 1090 Date of Entry: 2007-05-11

Article title:	Multimodal Information Systems of Travel Centres - All That Matters is the Passenger
Article reference details	Bäckström, J. & Öörni, S. (2003). Multimodal Information Systems of Travel Centres - All That Matters is the Passenger.10th World Congress and Exhibition on Intelligent Transport Systems and Services. Madrid
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Sponsor(s):	Ministry of Transport & Communications
Country/Region/City:	Finland

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☐
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	To describe the Finnish Travel Centre project, aimed at creating a high level nationwide network of 22 Travel Centres. To review the findings from research into the experiences of the four already realised.
Description/method:	The paper first describes the concept of Travel Centres, a combined station for all modes, ensuring easy interchange. It identifies the importance of cohesive information and how this is compiled for a range of transport providers. It then considers findings from studies at the first four Travel centres established. A survey into customer satisfaction was carried out at Seinäjoki, the findings of which are available, and one has been carried out at Jyväskylä but not yet published. For Lappeenranta and Seinäjoki stakeholders' views have been obtained on the effectiveness of the Travel Centre in serving customers.
Findings/conclusions:	The survey at Seinäjoki showed that - Nearly 50% of participants considered that the information system is the most important service in the Travel Centre. - The information system was graded as "excellent" by 32% of respondents and "good" by 53%. - The adequacy of information supplied was graded as "excellent" by 24% of respondents and "good" by 57%.

	The stakeholder surveys at Lappeenranta and Seinäjoki showed that the local authority and most public transport providers saw positive benefits from the Travel Centres. The Centres were also assessed as proving positive in improving social sustainability, development of communities, and the market share and trip chains carried by public transport. Their impact on the environment and on car traffic was judged neutral.
Strengths/weaknesses:	The report describes the provision of information within the development if integrated interchanges and identifies the initial effects of providing integrated information. It is limited and descriptive in scope.

END

DOCUMENT DETAILS

Compendium ID: 1091 Date of Entry: 2007-05-11

Article title:	Enhancing the Danish nation-wide travel information system with real-time information
Article reference details	Sommerfeld, W. (2003). Enhancing the Danish nation-wide travel information system with real-time information. 10th World Congress and Exhibition on Intelligent Transport Systems and Services. Madrid
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Sponsor(s):	
Country/Region/City:	Denmark

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To consider the principles and methods for incorporating information reflecting disruption on the Danish real time multimodal timetable information system www.rejseplanen.dk.
Description/method:	www.rejseplan.dk carries real time information for the Danish trains (DSB) and Copenhagen public transport (HT), based on the HAFAS system. Analysis is made of how to effectively present useful information and guidance on the impact of service disruptions.
Findings/conclusions:	Advice of a disruption event is not in itself useful. The traveller needs to know what incidents might affect his journey, how they will affect it, and what options might be open. The HAFAS system enables ‘unsharp’ information to be used in presenting a journey plan to an enquirer. ‘Sharp’ information can be presented when the operator can input data on current movements of trains / buses into the system; such data exist in various formats. Real time data may be presented in two ways. One is merely to present the results (e.g. 15 minute delays on route X). The other is for the system to calculate the best combination of journeys and interchanges so as to provide a good alternative to the journey planned. This is now possible with the HAFAS system. Results can be presented on the Internet or through various mobile devices.

Strengths/weaknesses:	The paper provides useful guidance on the scope for providing pro-active information to travellers on which buses / trains to take in the event of service disruptions and the data processing required. It focuses on the urban network situation.

END

DOCUMENT DETAILS

Compendium ID: 1092 Date of Entry: 2007-05-12

Article title:	The Print2Web project: Individual and mobile timetable information
Article reference details	Frankenberg, M. (2003). The Print2Web project: Individual and mobile timetable information. 10th World Congress and Exhibition on Intelligent Transport Systems and Services. Madrid
Web Address:	
Source project (if applicable):	
Contact name:	Michael Frakenburg
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Sponsor(s):	
Country/Region/City:	-

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To review the Print2Web project, which aims to combine modern multimodal individual travel planners with the advantages of print media.
Description/method:	The paper reviews the role of printed individual timetables drawn from multimodal individual travel planners and describes how the Print2Web system allows information to be processed and output on various devices.
Findings/conclusions:	Many regular travellers wish to have a printed timetable, often multimodal, for their journey, which may take place at various times of the day or week or at varying frequencies. Different forms of presentation are possible, following current timetable layouts. These can be provided on paper or on current mobile devices (palm, mobile phone, etc). To cope with peak pressures on the system, the raw data are drawn from the timetables and then processed into the desired presentation format outside the travel planner.
Strengths/weaknesses:	The paper illustrates the complementary roles of (personal) printed timetables and Internet based travel planners and how these can be combined through the project. It is however largely a description of one system.

END

DOCUMENT DETAILS

Compendium ID: 1094 Date of Entry: 2007-03-12

Article title:	Evaluation of Real Time Traffic Information for Public Transport Users
Article reference details	Lillestol, P.J., Skjetne, E., Myhre, E. (2003). Evaluation of Real Time Traffic Information for Public Transport Users. 10th World Congress and Exhibition on Intelligent Transport Systems and Services. Madrid
Web Address:	
Source project (if applicable):	IBIS (Integrated Payment and Information Systems), Trondheim
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Sponsor(s):	Norwegian Research Council, Public Roads Administration in Trondheim.
Country/Region/City:	Trondheim, Norway

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☑
Context	☑	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To describe an experimental real time information system on buses in Trondheim. To present the findings from surveys of users.
Description/method:	The system was set up on one bus route in Trondheim, with 'next bus' time panels at the six most important stops, and information also available on SMS mobile phones. The demonstration period was for five months. User reactions were evaluated through three different surveys: a user survey by postcards distributed on the bus; an SMS-survey, WEB based questionnaire to all SMS-users; a workplace survey, WEB based questionnaire to employees at major workplaces along the route. A comprehensive marketing campaign was carried out beforehand. The responses were good compared to common response rates in Norway: 45% for the postcard interviews, 90% for SMS users (who had to agree to take part in the survey when they joined the service); 40% for the workplace survey (even though it was addressed to all employees, including those who never used public transport).

Findings/conclusions:	The main points to emerge from the user evaluation were: - 86 % of users consider real time information helpful. - 61 % of regular line 4 users do want information about service delays. 82% of workplace survey respondents want this information, this includes car users. - Waiting time is perceived as less inconvenient when the correct arrival time is known - Displays at stops is regarded as the best channel for real time information. Pre booked SMS-warnings or Internet are regarded as less helpful. The SMS-warning service seems to be most helpful to those travelling regularly. - The surveys showed that users are willing to pay for dynamic travel information but they could not be used to calculate an exact charging rate. But most users object to raising bus fares to meet system costs. - The new information services complement paper based timetables and other traditional information, they do not replace them.
Strengths/weaknesses:	The system provided was an experimental one. The surveys sought to be comprehensive across the main users and potential users but were non-random; they were not checked for their validity against the general population of the city. Nonetheless this was a well focused experiment and study.

END

DOCUMENT DETAILS

Compendium ID: 1095 Date of Entry: 2007-05-29

Article title:	A new mobility service concept: an individual, real-time, integral, and multi-modal travel assistant.
Article reference details	Vonk, T. and van den Broeke, A. (2003). A new mobility service concept: an individual, real-time, integral, and multi-modal travel assistant. 10th World Congress and Exhibition on Intelligent Transport Systems and Services, Madrid.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	The Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This paper discusses the viability of a new Individual Mobility Service, defined as an information service providing the traveller with individual travel assistance from origin to destination, before, during, and after the trip.
Description/method:	First, the new Individual Mobility Service concept is described by deducing user needs and placing the service in the existing traffic and transport system. Next, existing mobility services are confronted with the defined user needs. Conclusions are then drawn.
Findings/conclusions:	The authors argue that a new mobility service is only viable if it can offer added value to the traveller compared to existing mobility services. The new mobility service should use the available information as much as possible and fill existing voids by creating new services. Rather than being just a portal to other services, the added value of the new service should be found in personalization and in a multi-modal integration of the transport supply. This means that the new service has to be: 1. individual (geared towards personal preferences of the traveller), 2. integral (covering informing, booking, navigating, monitoring, guiding, and paying), and 3. multi-modal (all travel modes are considered). The new service also has to be user-friendly, which means the traveller should be able to get advice before and during the trip, and should be able to evaluate the trip afterwards. The service should memorize personal preferences based on the selected alternatives

	and the interface should enable even occasional travellers to plan a trip. Furthermore, reliable information should be given, travel alternatives should be presented in an orderly, personalised way, and reducible advices should be given (so the traveller will understand which of his or her preferences led to the presented advice). Finally, for the traveller it is important to know how real-time traffic is affecting his or her travel plans. Therefore, the new mobility service should provide real-time information, in addition to an up-to-date travel advice. In order to do so, information is needed about the current position of the traveller (or his vehicle) and the real-time traffic situation. This information is collected, processed, and provided by traffic centres. Currently, if any real-time information on traffic jams is given during the trip, most services are not yet able to recalculate the travel plan and adjust the time of arrival or durance of the trip. Also, although several mobility services can provide personal, door-to-door information, this information is predominantly static and not adjusted to the real-time situation. Slow private transport (e.g., walking, cycling) is underrepresented in contemporary mobility services. Only a small portion of the mobility services also offers reservation and payment options in addition to informing and advising the traveller. Most existing services are focused on only one modality, and offer static information that can only be used pre-trip. The authors conclude that the current mobility services only partly meet the needs of the traveller.
Strengths/weaknesses:	The list of researched mobility services is rather outdated, which shows the dynamic developments in the field of travel information provision. Although the approach seems at some points simplistic compared to reality ("fill existing voids by creating new services"), it nevertheless provides some clear criteria that personalized travel information services could try to meet.

END

DOCUMENT DETAILS

Compendium ID: 1096 Date of Entry: 2007-05-12

Article title:	The Toolkit Approach to Publishing and Receiving Travel Information
Article reference details	Wells, I., Paulo, D., Cox, G., Bettles, D., Cornwell, I. (2003). The Toolkit Approach to Publishing and Receiving Travel Information. 10th World Congress and Exhibition on Intelligent Transport Systems and Services. Madrid
Web Address:	www.tih.org.uk
Source project (if applicable):	Traveller Information Highway
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Sponsor(s):	Highways Agency
Country/Region/City:	Great Britain

RESEARCH AREAS COVERED

Awareness	☐	Providers	☑
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☐

KEY INFORMATION

Objectives:	To provide a description of the Travel Information Highway, focusing on the toolkit approach to provision of information.
Description/method:	The article identifies the importance of a system to link data sets made available by service providers with various consumer channels using a range of media to supply customers. It outlines the role of the Travel Information Highway (TIH) for this, describes the QMISS TIH Toolkit as a pilot example, and then briefly describes a number of applications.
Findings/conclusions:	Comprehensive travel information contributes to optimal use of the transport infrastructure through enabling travellers to make more informed decisions about journeys. The toolkit approach, as recommended by the TIH Forum, encourages the uptake of data consumption on an integrated basis, supporting an increased user base, standardisation of maintenance issues and implementation support. Information consumers benefit from the reduced resource investment required to obtain information. Re-use of a single toolkit by many organisations removes the redundancy of developing individual solutions.
Strengths/weaknesses:	While setting out useful principles and identifying practical developments, the article is essentially a descriptive review from the providers' viewpoint.

END

DOCUMENT DETAILS

Compendium ID: 1097 Date of Entry: 2007-05-29

Article title:	The learning driver: issues for provision of traveller information services.
Article reference details	Karl, C. A. and Bechervaise, N. E. (2003). The learning driver: issues for provision of traveller information services. 10th World Congress and Exhibition on Intelligent Transport Systems and Services, Madrid.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Australia

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☐	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This papers seeks to understand how drivers learn to use available information and, as a result, determine what information is useful to them.
Description/method:	Semi structured interviews were conducted with drivers who had recently completed a traveller information trial in Melbourne, Australia, over a six week period during winter 2001. The objective of the trial was to test the accuracy of the traveller information service in providing customised information to subscribers. Thirty employees of a single Melbourne company received traveller information comprising estimated journey time from home to work and from work to home, incidents, and weather via SMS. Participants compared the information they received with the actual journey times they experienced over a six week trial period. The respondents that were interviewed for this study were volunteers drawn from the larger study of drivers.
Findings/conclusions:	The results show that most drivers want information of a predictive/analytical nature rather than merely an announcement that there has been an accident at a particular location. Less experienced drivers wanted more descriptive situational information, while more experienced drivers, although also wanting situational information, required less detail. Probably, this is because they already had a clear idea (a mental map of the situation) in their minds. It seems that the extent to which drivers are capable of fusing data is closely related to their knowledge of spatial and traffic conditions. Driver demand for, and hence

	valuing of, information appears to depend on the trip purpose, the driver's experience with processing information, and with his or her experience driving a given route. The knowledge and expertise of an individual driver is not uniform across all journeys undertaken and therefore the driver's requirements of traveller information also vary. Respondents supplemented their own experiences and knowledge by asking for ideas and seeking advice from friends, relatives, or workplace colleagues. Drivers learn within the context of their journeys as well as between contexts. They learn through trial and error and they learn in social settings from other people including other drivers. Experienced drivers utilise traveller information quite critically: they reflect on the new information and integrate it into their existing framework with a personalised meaning attached. Commuter drivers presented with dynamic, customised traveller information enter a learning curve affected by previous experience and immediate need where learning to access and utilise appropriate travel data is a dynamic process. The progression of drivers along a new learning curve in response to the provision of traveller information results in their subsequently wanting slightly different information. Design of an effective traveller information system necessitates the targeted provision of information, sensitive to evolving driver capacity. The authors conclude that customised traveller information will become effective when it meets the current understanding and needs of the driver as an active learner whose information requirements change over time and from time to time.
Strengths/weaknesses:	This is one of the few qualitative approaches towards understanding travel information provision. Although it provides some interesting insights, it is not always clear to what extent these can be attributed to the interview data. Also, the number of interviews that have been conducted is not stated in the paper. However, many quotes of what the respondents said are given in the paper.

END

DOCUMENT DETAILS

Compendium ID: 1098 Date of Entry: 2007-05-29

Article title:	Journey Time on VMS - Final Report
Article reference details	Faber Maunsell (2006). Journey Time on VMS - Final Report. Highways Agency
Web Address:	http://www.fabermaunsell.com
Source project (if applicable):	
Contact name:	Thomasina Edwards
Affiliation:	Faber Maunsell
EMail:	
Sponsor(s):	
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☐	Media	☑
Context	☐	Evolution	☐
Content	☑	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:

To explore public perceptions of the trial service of displaying journey time information on Variable Message Signs on the M6 and M5 between J15 Stoke and J16 Bristol and the M6/M1 junction (J19).

Description/method:

Face to face interviews were undertaken with drivers at five Motorway Service Areas (MSAs) along the route where the signs are being tested. Interviews were carried out at five motorway service areas (MSAs) situated along the VMS trial route: Stafford (M6), Hilton Park (M6), Corley (M6), Strensham (M5), Michaelwood (M5). Interviewers were placed at each MSA and approached all drivers for interview. A minimum of 110 interviews were completed at each service station and 600 were completed in total. Questions covered journey purpose, awareness of the VMSs, action taken and preferences for information. 74% of respondents were male, 48% aged 35-54, 87% were driving a car / van. 33% of respondents were making holiday trips, 21% business trips, only 6% commuting, the rest on other leisure travel. (A self-completion questionnaire was also handed out, but the results were not analysed as most drivers interviewed had already experienced the VMSs.)

Findings/conclusions:	89% of respondents thought showing Travel Time and Delay Time messages on VMS on motorways across England was a good idea. Travel Time messages were seen as a good idea because they keep drivers informed (56%), help avoid delays (15%), give advanced warning drivers to problem (10%), and allow more accurate journey planning (7%). Both Travel Time and Delay Time messages were thought to be easy to read (95% and 97% respectively), easy to understand (96%) and useful (82% and 91% respectively). 67% of drivers (especially 17-34 age group and business travellers) welcomed Delay Time messages as indicating congestion, 51% thought the same of Travel Time message (suggesting that they do not appreciate the purpose of these signs). 72% of respondents had seen a Travel Time message and/or 29% had seen a Delay Time message on the journey they were making. 12% said they were going to take action as a result of the information shown: taking an alternative route or making a longer stop at the MSA. The main reason for not taking any action was because there was no disruption to their chosen route at the time (78%). 44% of respondents thought the time displayed on the VMS was accurate, 39% did not know. Only 9% of those that had seen the Travel Time and Delay Time message thought the time given was inaccurate. Respondents showed a clear preference for Travel Time and Delay Time messages being shown on VMS
Strengths/weaknesses:	The research provides a sound picture of attitudes and experiences of drivers related to the provision of VMS information, including scope for improving their effectiveness for users.

END

DOCUMENT DETAILS

Compendium ID: 1099 Date of Entry: 2007-05-30

Article title:	The impacts of multimodal traveller information: a study with the development of an Intelligent Traffic Simulation Model (INSIM).
Article reference details	Lam, S. H. and Memon, A. (2003). The impacts of multimodal traveller information: a study with the development of an Intelligent Traffic Simulation Model (INSIM). 10th World Congress and Exhibition on Intelligent Transport Systems and Services, Madrid.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Singapore

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☑ Route choice ☑ Itinerary plannin ☑ Real-time ☑

KEY INFORMATION

Objectives:	This paper presents a traffic simulation model to analyse the impacts of travel information in a multimodal transportation network.
Description/method:	The model captures commuters' mode choice behaviour under the influence of travel information in a congested environment. A set of simulation experiments was carried out to illustrate the capabilities of the developed model. These experiments provide insight into the mode switching propensity of commuters with different levels of travel information updates in a congested environment. In the first simulation session (which is the base case) existing travel conditions are simulated without any provision of travel information. In the second session the same travel demand of the base case is considered and travel information after every 5th minute is provided to commuters. Similarly, in the third session travel information is updated after every 10th minute.

Findings/conclusions:	The results show that with the provision of real-time travel information the overall travel environment can be improved. With decreasing the update time interval the traffic volume decreases as compared to traffic volume for the base case (no provision of travel information). The mode switching from car to transit escalates when the travel time via car increases. Such a switching phenomenon decreases the travel demand and reduces the number of cars in the transportation network. At a certain stage, the travel time via car reduces to a level where its utility increases and the commuters again switch from transit to car. This scenario once again increases the travel time on different routes. According to the authors, such a cyclic behaviour keeps on toggling the mode switching propensity between car and transit modes of transport and improves the overall network performance. If travel updates are provided more frequently the performance of the transportation system can be further improved.
Strengths/weaknesses:	The underlying utility maximization principle of the model raises the question to what extent people really will consider changing transport modes as the model predicts they will.

END

DOCUMENT DETAILS

Compendium ID: 1100 Date of Entry: 2007-05-12

Article title:	The Need for Advanced Public Transport Information Services When Making Transfers
Article reference details	Molin,E., Chorus, C., van Sloten, R. (2007). The Need for Advanced Public Transport Information Services When Making Transfers. Transportation Research Board 86th Annual Meeting, Washington D.C.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	
Country/Region/City:	Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☐	Media	☐
Context	☑	Evolution	☐
Content	☑	Research methods	☑
Behaviour	☐	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To establish the need and willingness to pay for Personal Intelligent Traveler Information (PITA) type services by travellers on public transport, especially when making interchanges.
Description/method:	A choice experiment was carried out through a stated preference survey of passengers on intercity trains. This defined a hypothetical PITA service with variations in four different attributes: type of information; supply on initiative of (passenger or system); maximum deviation time; price per message. Three different journey contexts were set: no change, change to infrequent connection, change to frequent connection. Interviewees were selected on two lines: one with frequent intercity and stopping trains, one with low frequency services; in all 239 people agreed to take part, about 40% of all asked, 204 forms were fully completed and analysed. 57% were women; 44% were infrequent travellers; work and education were the main journey purposes. Each respondent was asked to complete a questionnaire form; these carried full explanations and took 10 minutes to complete. Three different forms were used, each containing a different set of attribute variable. Assuming that travellers in each choice set choose the alternative from which they derive the highest utility, the straightforward Multi Nomial Logit (MNL) model could be applied to estimate the coefficients for different attributes. However, to observe the full sequence of choices made by the same individual, a Mixed Logit (ML) model was

	preferable. Therefore an MNL model was estimated to serve as a base reference model, and the resulting coefficients were compared to those for an ML model.
Findings/conclusions:	The main findings were that: - travellers are indifferent as to whether information is supplied at their initiative or that of the provider - travellers do value information, but the utility is low when they have no interchange, higher when they are interchanging to a frequent service, and very high when interchanging to an infrequent service - a service offering both times and advice is preferred to one offering times only, especially when interchanging to a low frequency connection - a high utility is ascribed to a service providing more precise information The results also showed that utility to travellers decreases rapidly as the price of information provision rises, which poses a serious question over who might provide the information and why; it may not have commercial value but it could still prove valuable as part of a process to bring about modal change to public transport.
Strengths/weaknesses:	The survey and the analysis of results generate some useful but not unexpected results for the most part. However, they are based on a relatively small non-random sample.

END

DOCUMENT DETAILS

Compendium ID: 1101 Date of Entry: 2007-05-30

Article title:	Quantifying reductions in commute disutility from traveler information services (ATIS).
Article reference details	Vasudevan, M. and Wunderlich, K. E. (2007). Quantifying reductions in commute disutility from traveler information services (ATIS). TRB 2007 Annual Meeting CD-ROM.
Web Address:	
Source project (if applicable):	
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Sponsor(s):	Federal Highway Administration
Country/Region/City:	US, Washington D.C.

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☑ Public transport ☐ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	This paper presents an approach for quantifying commute disutility measures, which was demonstrated through a case study conducted for the Washington DC metropolitan area using an analysis technique called HOWLATE (Heuristic Online Web-Linked Arrival Time Estimation).
Description/method:	Commute disutility is defined as having pre-trip, en route, and post-trip components based on the assumption that there is a disutility associated with a commuter's expectation of the trip prior to trip start, the en route trip experience, and the actual outcome of the trip. Three types of regular commuters were modelled: the non-user (who does not use any travel information), the radio listener (who listens to commercial broadcast traffic advisories, and the ATIS user (who uses a notification-based service that provides route-specific travel time estimates. All commuters have an on-time arrival requirement. HOWLATE applied dynamic programming to archived observed roadway travel-time data from the SmarTraveler website and radio advisory content from Westwood One (a regional radio station). The study was conducted for a total of 37 weekdays from June 2001 to January 2002.

Findings/conclusions:	Compared to non-users, traveller information users had lower commute disutility. They had fewer late arrivals at their destinations, and had fewer instances when their trip expectation prior to trip start did not match their actual trip experience. Also, they had fewer instances when at intermediate waypoints along a trip they felt they were falling behind schedule. On more than 65% of the trips, they modified their trip start times or took alternate routes. This may have resulted in some disutility due to changes to the regular commute behaviour, but they are more informed and therefore, more confident of the potential trip outcome than a non-user. Non-users had more than twice the number of late or (very) early arrivals than the other two commuters. Overall, ATIS users had lower commute disutility than radio listeners. Due to imprecise, qualitative advisory information, the radio listener was five times more likely to be late than the ATIS user during the AM peak and twice as likely to be late in the PM peak. Radio traffic advisories were less effective in reducing commute disutility than a service offering precise information, such as route-specific travel time estimates. According to the authors, their study demonstrates that the critical benefit of traveller information is to allow users the ability to adapt to variability in traffic, which in turn reduces the number of instances when commuters are uncertain of their trip outcome.
Strengths/weaknesses:	This is a thorough study, but the question remains how accurately the obtained results of this simulation would reflect reality.

END

DOCUMENT DETAILS

Compendium ID: 1102 Date of Entry: 2007-05-29

Article title:	Real-Time Information Displays - Psychological Effects of and Design Preferences for Real-Time Information Displays Introduction
Article reference details	Dziekan, K, Vermeulen, A (2006). Real-Time Information Displays - Psychological Effects of and Design Preferences for Real-Time Information Displays. Journal of Public Transportation, Vol. 9, No. 1, 71-89
Web Address:	
Source project (if applicable):	Behavioural Response to IT-Based Traveller Information in Public Transport.
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Sponsor(s):	Vägverket (Swedish Road Administration) and Banverket (Swedish Rail Administration)
Country/Region/City:	The Hague, Netherlands

RESEARCH AREAS COVERED

Awareness	☐	Providers	☐
Demand, access and use	☑	Media	☑
Context	☐	Evolution	☐
Content	☐	Research methods	☐
Behaviour	☑	Other	☐
Delivery	☑		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To investigate the effects on users of real-time information provision on HTM (The Hague) tram route 15, primarily through displays located at stops and stations, complemented by SMS messaging; especially looking at issues of perceived wait time, feelings of security, and ease of use.
Description/method:	Questionnaire surveys were carried out before and after installation in January 2004 of realtime displays at stops along tram line 15 in The Hague (operator HTM). 840 questionnaires were distributed to passengers aged 15+ in December 2003, seeking information on journey characteristics and views on waiting time, security, and convenience. 370 (44%) were returned. 175 persons who indicated their addresses in this questionnaire for participation in an after test received a new questionnaire via mail in March 2004, repeating the questions on perceived security, wait time, and ease of use but adding further questions on level of education, car availability, use of the displays, evaluation of the line's reliability, and preferred placement types for the information stand. Analysis showed that the two survey populations' characteristics were comparable. Respondents came from all age ranges; 66% had a car available; over one-third had a university degree; most were frequent users of the line. A further questionnaire was sent to the 175 thirteen months later, 81 being returned.

Findings/conclusions:	Average perceived wait time was 6.3 minutes in the before survey, 5.0 minutes in the after survey: actual schedules for the period varied 10% around a 10 minute headway, giving actual average wait time of 4.5-5.5 minutes. The at-stop displays, complemented by SMS messaging, appear to have users more scope to adjust their arrival time at the stop; they may also have felt more in control. The perceived time saving, 1.3 minutes per trip, could have material benefits in terms of (small) increases in passengers and also accountable cost-benefit gains. The average score for security (out of 1-10) was 7.9 before and 7.6 after; i.e. perceived security fell slightly. The scores for ease of use of the line did not change between the two surveys. (These may have been affected by the format of the questions.) There was a strong preference for the real time information displays being placed at right angles to the tracks; and for such displays being outside the shelter rather than inside. 79% looked at the stop displays (but 21% did not). 57% considered the information accurate, but 27% said that the tram was often later than shown. The results of the second after test generally confirmed the findings of the first after test. The experience of security and ease of use remained constant over time. However, the perceived waiting time decreased, while more people looked at the displays.
Strengths/weaknesses:	The research assessed the experiences and views of travellers by a specific tram line against aspects of behaviour identified in previous research and draws conclusions for future provision based on users' behaviour and perceptions. It also relates these to wider aspects, such as the value in cost benefit terms. It is not clear how far all its findings would be fully applicable to other routes in The Hague or elsewhere.

END

DOCUMENT DETAILS

Compendium ID: 1103 Date of Entry: 2007-05-29

Article title:	Dynamic at-stop real-time information displays for public transport: effects on customers
Article reference details	Dziekan, K, Kottenhoff, K (2007). Dynamic at-stop real-time information displays for public transport: effects on customers. Transportation Research Part A 41 (2007) 489-501
Web Address:	
Source project (if applicable):	Behavioural Response to IT-Based Traveller Information in Public Transport.
Contact name:	Katrin Dziekan
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Sponsor(s):	Vägverket (Swedish Road Administration) and Banverket (Swedish Rail Administration)
Country/Region/City:	

RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☐
Context	☐	Evolution	☑
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☐ Itinerary plannin ☐ Real-time ☑

KEY INFORMATION

Objectives:	To review the effects of providing real time information for public transport at stops and stations, in terms of its impact on travellers using the services and in turn on agencies providing public transport and information about it.
Description/method:	The paper sets out a review of the issues and experiences, pulling together the findings of research findings in the field over the last twenty years, drawn from various cities and networks. It identifies seven main effects which such systems might achieve: reduced wait time; positive psychological factors, such as reduced uncertainty, increased ease-of-use and a greater feeling of security; increased willingness-to-pay; adjusted travel behaviour, such as better use of wait time or more efficient travelling; mode choice effects; higher customer satisfaction; better image. It discusses each of these, and sets out a framework for assessment, looking at two studies of specific projects in this light.

Findings/conclusions:	Real time information provision has grown steadily from early days in the 1970s. Most people (between 70% and 100%) look at displays. A number of beneficial effects have been identified: - Perceived waiting times are reduced, sometime by a significant margin. - Positive psychological effects are engendered, including an increased feeling of security, reduced uncertainty and stress, and increased ease of use of the system. - There is an increased willingness to pay for information, or at least to accept a ticket pricing element for it, equal to about 5%-20% of the journey ticket price. - Travel behaviour is adjusted to match advised running times (e.g. people use a wait interval to shop) or to alter the intended route (where possible), reducing disutility from the journey. - Some travellers, especially younger more mobile people, switch to public transport as it is seen to be more convenient. The scale is perhaps small but significant. - High levels of satisfaction with public transport are generated. - Public transport has a much better image, leading to widespread public satisfaction. Applying the framework to two studies into provision of real time information showed how clear values of effects could be established. On a tram line in The Hague the effects demonstrated higher benefits for the investment than would have been gained by putting it into operating more trams. On the Stockholm subway it reduced the number of people running. Information provision forms a valuable component of passenger travel quality; quality is vital in any service industry, and customers will expect continual improvements. Provision will need to vary according to scale and nature of the transport system. The effects depend on passenger behaviour and thus well focused research and development of systems are essential.
Strengths/weaknesses:	The paper provides a valuable review of the topic, moving through historical development to identify the key benefits and establish an assessment framework. It pulls together results from a range of research studies, including specific values for some effects.

END

DOCUMENT DETAILS

Compendium ID: 1104 Date of Entry: 2007-05-29

Article title:	Learning an unfamiliar public transport system: An in-depth study from the user perspective in Stockholm
Article reference details	Dziekan, K (2007). Learning an unfamiliar public transport system: An in-depth study from the user perspective in Stockholm. Royal Institute of Technology School of Architecture and the Built Environment, Stockholm (57pp)
Web Address:	www.kth.se
Source project (if applicable):	
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RESEARCH AREAS COVERED

Awareness	☑	Providers	☐
Demand, access and use	☑	Media	☑
Context	☑	Evolution	☐
Content	☐	Research methods	☑
Behaviour	☑	Other	☐
Delivery	☐		

TRAVEL MODE(S)

Car ☐ Public transport ☑ Walk/cycle ☐

INFORMATION USE

Mode choice ☐ Route choice ☑ Itinerary plannin ☑ Real-time ☐

KEY INFORMATION

Objectives:	To investigate the learning process associated with using an unfamiliar PT system. Published material suggested that it took about two months for intelligent strangers to become familiar with a city's public transport but they had little understanding of how they acquired their knowledge. The research focussed on considering information and orientation and including the development of the cognitive map.
Description/method:	This research was conducted over a ten-week period with an exchange student who had never previously been to Stockholm; a 23 year old post-graduate student from Germany who was studying in a related field. The methodology included three main components: -A questionnaire completed by the subject one week before arrival, one week after and ten weeks after. This included background questions and questions exploring knowledge of Stockholm's public transport. -34 specific tasks with mind protocol; defined trips by public transport for which the subject was asked to record her thoughts and feelings before and during the trip and to rate the ease of the trip. -Eight semi-structured interviews with the subject, lasting 25-40 minutes, conducted by the author in German. These sought to draw out in more depth the subject's approach, feelings and knowledge on use of Stockholm public transport. The final one covered the process of travelling by public transport.

Findings/conclusions:	A mental representation of an unknown public transport system developed very fast in the first days. The picture became more detailed over time but also better developed on a larger scale beyond the well-known corridor used by the subject every day. The metro (T-bana) formed the backbone, an aid to orientation. Route and line numbers were less important, the main factor was the ability to make connections. Key interchange nodes were very important: the subject knew much about travel options to and from frequently used nodes. The geographical background is probably less important as more is learnt about the urban area and the transport system. During the first week the subject gathered various maps – metro and bus route plans, city maps with public transport on and used them carefully. By three weeks she was starting to memorize the main nodes and metro lines. By seven weeks she was becoming quite confident and no longer planned her trips so carefully, relying more on posted timetables at key nodes through which she travelled. But even by the end she still followed the same basic process: first, look in the map to ascertain where she was and where the destination was located; second, decide how to get there. From the start the subject tried to focus on two aspects: the final destination and the name of the stop to get off at. The metro lines were easier but with bus routes it was often difficult to identify where she was; the large number of bus routes added to problems, especially when interchanging. After four weeks her daily trip between residence and university had become habit and by seven weeks she was more comfortable travelling round the system. By then she sought to arrive as close to the destination as possible, often by using a bus. However, bus travel remained stressful even after ten weeks. At first travel by public transport was very challenging but by three weeks the subject felt very happy about her growing ability to get around. Once she had a good understanding of the metro and bus services, her knowledge of the city's geography continued to develop. By the end of ten weeks she felt that she had a sound grasp of the whole city in spatial terms. Overall the greatest learning occurred in the first week or so. Between the second and sixth weeks knowledge and experience was built up, although there was still some uncertainty and errors. By the tenth week the subject felt competent and confident, and each new trip added to understanding and ability. The subject's detailed experiences also showed up where key weaknesses exist in provision of Stockholm's public transport services, facilities and information related to the needs of passengers for convenient travel.
Strengths/weaknesses:	The research provides a valuable in-depth exploration and explanation of the process of acquiring information on a public transport system. It links these to other research findings and to practical aspects of public transport provision. However, it is based on only one intelligent and suitably educated subject, within an integrated high density city system; abilities and even processes for such learning might vary widely across the population by person type and also by type of public transport provision.

END