



Public attitudes to and perceptions of high speed rail in the UK



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ABSTRACT

With the planned expansion of high speed rail (HSR) in the UK, demand for longer-distance travel is expected to increase significantly over the coming decades. This paper presents a study into attitudes and perceptions of long distance travel in the UK, particularly in relation to HSR. A questionnaire was developed to investigate attitudes to travelling long distances and to HSR, importance of journey characteristics and current travel behaviours. A factor analysis of 46 attitude items yielded six factors: travel security, improvement to road and air, prestige of HSR, comfort, negative aspects of HSR and the usefulness of travel time. Analyses showed significant demographic and travel characteristic differences across the factors. There was also evidence of a more negative impact and lower prestige for people living closer to proposed HSR routes. Willingness to pay for travel time saved was related to a number of journey characteristics but the utility of time was also important. The findings are considered in light of theories of attitude change, attitudes to travel and sustainability and the implications for the future development of HSR policy, particularly in terms of balancing increased fares with utility of travel time.

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1. Background

The total number of journeys by rail in Great Britain has more than doubled between 1994/95 and 2009/10 leading to capacity concerns on key sections of the network (Department for Transport, 2011a). Also, forecasts suggest that the average person will make 61% more long distance rail trips by 2043 compared with today (High Speed Two, 2011). However these predicted demands must be considered in terms of what rail travel might look like in decades to come, what other travel modes may compete with rail and whether new forms of rail travel are attractive to potential passengers. There are also potential development options being considered for reducing travel times by rail, as has happened in other countries such as the high speed magnetic levitation train (Maglev) using Transrapid technology already in service in Shanghai, China.

There have been two proposals for reducing travel times by rail in the UK. One is the Ultraspeed project, which proposed a Maglev (UK Ultraspeed, 2006). The second, and current choice of the UK Government, is HS2, an HSR line initially between London and Birmingham, and later to Manchester and Leeds. Following much debate in Government about the costs and benefits, and media

attention covering issues such as being good for business outside of London, convenience of and work time savings from reduced travel time, the HS2 Bill eventually passed the Commons on 28 April 2014. HS2 will differ from existing rail services primarily in terms of travel time and potentially in terms of image and has been predicted to impact substantially on travel behaviour in terms of decision-making about long distance travel (Department for Transport, 2011a, 2011b). Given the recent media debates and apparent reduced emphasis by the UK Government on the 'value' to business of travel time saved, this matter warrants further attention. Indeed, the Independent Transport Commission (2010) identified a need for further research for greater understanding of why travellers make certain choices for long distance journeys.

Therefore the main aim of this paper is to ascertain how people perceive HSR and whether they are prepared to pay more to use it. Thus, the study investigates as its objectives the following: attitudes towards long distance travel and HSR in particular, including personal safety and security; the perceived status and/or negative perceptions of HSR; the importance of comfort, convenience and sustainability and the need for transport improvements; and the willingness to pay (WTP) for travel time reductions. All of these are considered in terms of demographic differences, travel behaviour and geographic variables. An evaluation of these issues can make a major contribution in understanding whether potential passengers would use HSR relative to existing services and how much pricing strategies for HSR relate to its likely use.

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2. Attitudes, travel behaviour and situational influences

2.1. The role of attitudes in travel behaviour

HSR will increase travel speeds on intercity transport corridors and, due to the relatively high speeds and infrequency of stations, users of the line will almost entirely be making long distance trips (a single long distance trip is defined as > 50 mile, 80.5 km by the Department of Transport (Rofique et al., 2011)). Attitudes are of considerable importance in decisions about travel behaviour. For example, they are a determinant of behavioural intention in the Theory of Planned Behaviour (TPB). The components of the theory include the attitude towards the behaviour, subjective norms and perceived behavioural control (Ajzen, 1991). Attitudes reflect beliefs about the intended behaviour, and are evaluative. It is therefore important to recognise the extent to which these attitudes will determine the likely users of any new HSR route in Britain, as well as what experiential parts of travelling are important.

Four major groupings of attitudes in relation to long distance travel and HSR were identified by Caygill (2012). These are security, cost, quality of service and convenience. Environment was particularly notable here by how little it was mentioned unless prompted. This is consistent with Cafferkey and Caulfield (2011) who found a lack of consideration for the environment when making decisions about long distance travel by 22.5% of respondents whereas only 7.9% considered it to be a major concern. There is also the issue that egoistic values appear to be linked to negative environmental behaviours (Collins and Chambers, 2005; Yusuf et al., 2014). There is evidence of gender differences in relation to the environment, including in relation to travel. For example, Arnocky and Stroink (2010) found that women expressed greater altruistic concern and willingness to cooperate for the sake of the ecosystem, while men were more resource competitive and Hess et al. (2013) found women to have stronger pro-environmental attitudes in relation to transport. The implications of this are that women may be more likely than men to choose rail travel, including HSR, for environmental reasons.

In terms of attitudes to security and safety, Lynch and Atkins (1988) suggest that the elderly are generally less able to counter physical attacks, and that young women have high levels of anxiety about sexual assault and apprehension when travelling by train (15% felt unsafe during daylight, while 25% felt unsafe during darkness). The elderly are making more use of travel cards and are thus travelling more frequently, which may have implications for attitudes to safety and security (Coronini-Cronberg et al., 2012).

Dargay and Clark (2012) found demographic differences in travel behaviour decisions about long distance travel in Great Britain. Income was found to be a major determinant in making decisions about long distance travel, while other factors included gender, age, employment status and household composition. This tallies with Hess et al. (2013) who found that women, older respondents and those who are better educated have stronger pro-environmental attitudes in relation to transport and rail travel in particular. Studies cited in Ajzen (1991) in relation to the TPB have shown that behaviour is influenced strongly by confidence in the ability to perform it (perceived behavioural control), for example by being able to afford it. Low income groups would therefore be expected to have lower perceived behavioural control, which may be reflected in their attitudes to long distance travel and HSR. Similarly, greater wealth is associated with higher levels of mobility (Lleras et al., 2002); thus the perceptions of new transport infrastructure such as HSR may be more likely to be favoured by those in higher income professions. Understanding what affects attitudes to long distance travel and HSR in terms of demographics is therefore important and it is hypothesised here that attitudes will differ by age, gender and occupation (Hypothesis H1).

As the determinants of planned behaviour include attitudes partly based on cognitive evaluation, empirical knowledge of long distance travel based on experience is likely to be greater for those who have travelled more recently or more frequently and may therefore relate to attitudes to travel security and the importance of comfort. Further, Lyons et al. (2007) indicate that commuters are more likely to consider their time use wasted than compared with business or leisure travellers and thus it is reasonable to predict that they will differ in attitude and perceived utility of HSR. Therefore it is hypothesised that previous travel behaviour will relate to attitudes to HSR (H2) and that attitudes to long distance travel and HSR will differ by regularity of travel, e.g. commuting (H3).

Users making many trips will generally choose a discounted travel pass, while those that make few trips generally choose an ordinary ticket (Carbajo, 1988). Once a travel pass is purchased, it influences the marginal cost of travel and thus the number of trips made depends on that choice (ibid.). Thus, the fourth hypothesis (H4) is that possession of a travel discount will be related to attitudes to long distance travel and a more positive perception of HSR. H4 links to both demographics and previous travel behaviour as determinants of planned behaviour as a result of effects on attitudes and perceived behavioural control. Demographics also link to possession of certain travel discounts through exclusivity, for example, in the UK a young person's railcard is for students and those aged 16–25 years and the senior railcard is only available to those over 60 years of age.

2.2. Situational influences on the determinants of travel behaviour

Dargay and Clark (2012) found geographic and regional differences in long distance travel behaviour. For example Londoners travel long distances the least, while those in the South West of the UK travel the most. This may be partially explained by differences in transport provision, for instance Londoners being the least likely to travel by car. It is also likely that the introduction of HSR will have implications for regional variations in long distance travel. Dargay and Clark also found that long distance travel increases as the population of the municipality of residence decreases and conclude that those in rural areas travel longer distances. However, this was only the case for car travel, as this has no impact on travel by other modes such as rail.

Martínez Sánchez-Mateos and Givoni (2012) suggest the presence of a 'tunnel' effect for HSR, whereby those living in between stations perceive little or no benefit in terms of accessibility. Significant accessibility benefits in terms of journey time reductions were limited to a small number of cities, with intermediate locations relatively less accessible. Therefore H5 predicts distance to an HS2 station is negatively associated with benefits from HSR. It is also reasonable to conclude from the above research that some communities will see a dis-benefit from HS2. Most communities along the route of HS2 are unlikely to see accessibility benefits due to the infrequency of stations, but are more likely to be impacted upon by the line when operating (such as by noise). A considerable opposition has emerged in affected areas, with some pressure from campaigners opposed to HS2 (Channel 4 News, 2012), and previous experience suggests that local opposition due to perceived negative impacts is possible (Schaap, 1996). Subjective norms from the TPB (Ajzen, 1991) may act here in that respondents living close to the proposed HS2 line may feel social pressures to adhere to local convention (which is most likely to be opposition). Thus it is hypothesised that negative attitudes about HSR will be greater for those living along the proposed route of HS2 (H6).

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