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Deal or no deal: Can incentives encourage widespread adoption of intelligent speed adaptation devices?

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ABSTRACT

Given the burden of injury, economic, environmental and social consequences associated with speeding, reducing road traffic speed remains a major priority. Intelligent speed adaptation (ISA) is a promising but controversial new in-vehicle system that provides drivers with support on the speed-control task. In order to model potential system uptake, this paper explores drivers' preferences for two different types of ISA given a number of alternative fiscal incentives and non-fiscal measures, using a stated preference approach. As would be expected with such a contentious issue, the analysis revealed the presence of significant variations in sensitivities and preferences in the sample. While a non-negligible part of the sample population has such strong opposition to ISA that no reasonable discounts or incentives would lead to them buying or accepting such a system, there is also a large part of the population that, if given the right incentives, would be willing or even keen to equip their vehicle with an ISA device.

1. Introduction

Intelligent speed adaptation (ISA) is a system that provides information on the local speed limit to the driver, demonstrated to produce substantial savings in accidents and small reductions in fuel consumption and subsequent CO_2 emissions (Carsten et al., 2008). As such, this new technology offers one of the most promising strategies for combating the major economic, environmental, societal and public health impacts of road traffic speed. Since the safety effects of ISA are directly dependent on the number of equipped vehicles on the road (Carsten et al., 2008) the benefits of ISA will not be realised without widespread adoption and use by members of the public and fleets. In the absence of fiscal incentives, the market penetration of ISA amongst private drivers will depend on the extent to which consumer buying behaviour relates to the benefits associated with ISA (increased safety, lower emissions). But while these benefits are known to influence drivers' purchasing decision, attributes such as price, styling and reliability remain drivers' primary considerations when buying a new vehicle (see Koppel et al., 2005). A recent survey of European drivers also noted that while drivers recognise some active safety systems as indispensable, those that monitor driving behaviour are clearly rejected (European Commission, 2006). In the case of ISA, this rejection is a likely consequence of private good characteristics of speed outweighing the public good characteristic of safety. Given the positive beliefs associated with speeding, such as reduced journey time (Warner and Aberg, 2008), promoting ISA with less obvious private benefits presents a difficult problem. Beyond this, the deployment of many Intelligent Vehicle Safety (IVS) systems, such as ISA, is often limited by the publics' poor understanding, and lack of experience with the technology. Borrowing from cognitive psychology and advertising and marketing research, Zwijnenberg et al. (2007) therefore propose that the key to enhancing market penetration of any IVS lies in promotional activities and deployment initiatives. Promotional activities such as demonstrations, campaigns and field operational tests serve to enhance consumers' awareness and understanding of systems, whereas deployment initiatives are designed to increase a consumer's willingness to buy. Together, successful promotion and deployment activities should lead to increased sales of ISA equipped vehicles.

To date, the U.K. has achieved considerable success in raising awareness amongst stakeholders through research, but little attention has been paid to deployment initiatives. Zwijnenberg et al. (2007) report, however, that over half of drivers' reasons for *not* buying an IVS system relate to willingness to buy (e.g. too expensive to buy/service, undermines freedom). Thus while drivers state reasons related to willingness-to-buy for not purchasing IVS systems, stakeholders are engaging in very few activities to address this. Since only a strategic approach, where activities are aimed at increasing awareness, understanding and willingness to buy, will guarantee accelerated market penetration, ensuring that the appropriate deployment initiatives are in place may be the key to encouraging take-up of ISA. The research reported here explored

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