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Research Brief



Evaluating measures to improve personal security and the value of their benefits

T954 - August 2012

Background

Recent national passenger surveys have shown that satisfaction associated with personal security on the railways in Great Britain has been consistently lower than the overall satisfaction level of rail passengers. To address these concerns, and to improve personal security on the railways, the industry has implemented various security measures and schemes. However, in the absence of a value or a set of values to robustly quantify such measures, making a case for investment becomes very difficult. The Rail Personal Security Group asked RSSB to address this knowledge gap through this research project.

The purpose of this study was to evaluate two specific interventions designed to reduce personal security risk at railway stations and railway station car parks, namely the Secure Stations and Safer Parking schemes. Secure Stations is a scheme for rewarding station operators, through accreditation by the British Transport Police (BTP), for managing security and demonstrating to customers their desire to reduce crime. The scheme was launched in 1998 and by March 2011 there were 1245 stations accredited under the scheme of which 345 were first time accredited stations, 893 were re-accreditations and 7 were working towards accreditation. Safer Parking is a similar scheme, managed by the British Parking Association on behalf of the Association of Chief Police Officers (ACPO).

In undertaking the research, the evaluation of the two schemes consisted of two principal strands, one concerned with a crime-based evaluation, and a second concerned with an economic-based evaluation.

Aims

The objectives of the study were to:

- Evaluate the Secure Stations and Safer Parking schemes, ensuring that part of the evaluation includes a quantification of the costs and the benefits (actual and perceived) accrued by the public, passengers, industry and the wider society through their implementation.

- Through the evaluation of the two schemes, and using other techniques/methods as necessary, develop a methodology (and framework) and use it to provide a quantifiable assessment of the Secure Stations and Safer Parking schemes/measures to improve personal security.

Findings

The key drivers of the reduction of crime at railway stations/ railway station car parks include the following:

- Guardianship: ie the presence of station/car park staff.
- Surveillance: ie the presence of CCTV or informal surveillance.
- Defensible space and access control: ie the presence of ticket barriers, and the ability to secure station property and spaces therein.
- Activity support: ie the extent of routine activity associated with the presence of shops and cafes etc.

Secure Stations and Safer Parking were found to have the following effects on crime rate:

- Secure Station accreditation is associated with lower levels of theft from a person by 24%, criminal damage by 35%, and vehicle crime by 36%.
- In the absence of Secure Station accreditation, Safer Parking accreditation has no discernible influence upon vehicle crime, but does bring additional benefit when combined with Secure Station with a combined effect of 48% reduction.

Secure Stations/Safer Parking generates benefits to existing rail users in the following ways:

- Benefits arise from reductions in the frequency of actual crime incidents.
- Quite aside from the effects of Secure Stations/Safer Parking on actual crime, station/car park users place significant value upon specific personal security interventions at stations/car parks (eg CCTV), since these contribute to improvements in perceptions of crime risk more generally.
- Whilst placing significant value upon such interventions, existing rail users are however reluctant to pay for them through the fare box/car park charges.

Secure Stations/Safer Parking generates benefits to new rail users (and/or existing users making additional trips) in the following ways:

- Secure Stations and Safer Parking have a significant effect on rail demand (7% for seasons, 1% for non-seasons).
- This increase in demand implies the existence of benefits to 'new' users, and increased revenue to train operating companies from increased patronage.

It is worth noting that the demand impact reported is largely driven by the Secure Station scheme. The specific contribution of Safer Parking was difficult to discern statistically.

Deliverables

In addition to the final report and research brief, the study has developed a Planning Tool, which features the following key elements:

- It records background data for a user-defined personal security intervention (Secure Stations, Safer Parking, specific physical interventions, or some combination thereof) at a railway station/railway station car park.
- It incorporates a crime model, to provide a first estimate of the crime reduction impact of the intervention.
- It estimates the rail demand impact, based on a patronage model.
- It values the social benefits of the intervention.
- It aggregates the benefits and costs to a Net Present Value (NPV) and Benefit: Cost Ratio (BCR) using methods and parameters consistent with industry and DfT practice.
- It conducts sensitivity analysis for key parameters.

Method

In undertaking this evaluation, the study developed, and integrated, analyses at two distinct levels of detail; aggregate and detailed. The role of the aggregate analysis was to elicit general trends in the crime-reducing effects (and the consequent net social benefits) of Secure Stations/Safer Parking from a large sample of stations/car parks. The role of the detailed analysis was to develop a deeper understanding of the relationships between the interventions and the effects, with reference to a small number of specific station/car park sites. The specific research methods included the following:

Aggregate sample

For a representative sample of 322 stations (and station car parks where applicable) for period 2006/7 to 2011/12, the study developed:

- Crime model: this is a statistical model, based on BTP Crime data and an online survey of station/car park managers/operators that seeks to draw relationships between the incidence of crime by crime type and drivers of crime.
- Patronage model: this is a statistical model, based on LENNON, GJT and socio-economic-demographic data, that seeks to draw relationships between the incidence of crime by crime type and rail patronage, defined in terms of sales of rail tickets.

Detailed sample

For a selective sample of seven stations and four station car parks, the study carried out:

- Visual audits: site visits to inspect and document features of the station environment that may be associated with facilitating or preventing crime.
- Valuation surveys: willingness-to-pay (WTP) passenger surveys based on some 1140 individuals, to value reductions in crime risk that might be associated with Secure Stations/Safer Parking.

Next Steps

The recommendations from the study have been presented to RPSG and CSSG who have decided:

- 1 That there is a good case for formalising the evaluation of Secure Stations/Safer Parking interventions in line with the evaluation of other comparative interventions such as station/service quality and railway safety improvements. Lead action - future scheme administrators.
- 2 To promote the findings of this study, and the existence of the Planning Tool, to relevant industry stakeholders. Lead action - RPSG.
- 3 There is a good case for the inclusion of the findings in Passenger Demand Forecasting Handbook. DfT may also wish to consider the case for commissioning associated WebTAG guidance. Lead action - ATOC / DfT.
- 4 In order to encourage take-up of the Planning Tool, the design and implementation of a 'front end' interface should

be commissioned. Lead action - RPSG to make a research proposal to RSSB.

- 5 With the clear crime reduction benefit attributable to the schemes and associated security measures, the rail industry should consider mechanisms for better communicating not only accreditation, but also security enhancements more generally. This would help to motivate staff, deter criminals, and improve customer perceptions. Lead action - RPSG / CSSG / station operators.
- 6 It is recommended that RSSB continues to reinforce guidance provided to the industry on the nature of workplace assaults which are being inconsistently recorded, with high levels of under-reporting. Lead action - RSSB.
- 7 It is recommended that the future administration of the Secure Stations scheme identifies a mechanism whereby station intervention and management data can be systematically updated on a regular basis, perhaps through the use of online reporting forms, and to explore options to ensure that such data are audited at regular intervals (eg each financial year). Lead action - future scheme administrators.
- 8 The secure stations accreditation criteria of crime ratio, needs to be reviewed as it may be too stringent for low throughput stations. It is recommended that the development of tiered scheme to adjust for different levels of throughput be given consideration in this review. It is also recommended that another accreditation criteria of audit scores based on the station environment, should consider giving a greater weighting to items which have a greater influence on crime. Lead action - future scheme administrators.

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