

Drive for Safety

Research Summary

The ESRC and the Technology Strategy Board co sponsored this nine year Knowledge Transfer Partnership (KTP) between Arriva Passenger Services Limited – one of Europe's largest providers of passenger services – and Cranfield University.

The research programme aimed to improve bus driver training and safety awareness, and to create a safety culture throughout the Arriva organisation.

Three researchers worked on three separate but interrelated projects. The first project developed a prototype bus driving simulator for training novice drivers. The second project involved the design of an online psychometrically based assessment to measure driver attitudes that underpin decision making behaviours. The third project investigated Arriva's safety culture and provided a series of recommendations regarding management and driver supervisor training.



Safety in recognition of their efforts to improve safety and driving standards. In 2008 the research programme was awarded with the Knowledge Transfer Partnership award for Best Application of Management and Social Science.

Arriva believes adopting the project's outcomes (the simulator, driver risk assessment, safety guidelines and courses) have helped the company to improve its safety record. In the three years following the completion of the programme, the number of fault accidents involving Arriva bus drivers reduced by 6.5 per cent, and non fault accidents reduced by 3.5 per cent. The number of fatal accidents fell by 31 per cent.

The project has also demonstrated the commercial benefits of improving bus driver training and creating a company culture of safety. In the three years following the project, Arriva's accident claims decreased by over £1 million. Staff turnover reduced from 24 per cent to 20 per cent, and absenteeism decreased from 6.1 per cent to 4.5 per cent.

Impact

The KTP project enabled Cranfield University to undertake specialised and unique research in a field that was previously little understood, and led to the development of a bus driving simulator – the first of its kind in the UK.

The project has paved the way to greater levels of safety across the passenger services industry. In November 2004 Arriva and Cranfield received the International Prince Michael Award for Road

Other major commercial projects benefiting Cranfield University have used an approach similar to that refined during the KTP programme. These include a three year research contract with Astra Zeneca and a three year contract with Unilever to manage fleet driver risk by providing educational solutions. The university also worked for Transport for London to assess the effectiveness of a bus driving simulator in reducing the number of bus collisions in London.

The KTP programme enabled Cranfield University to launch a highly successful continuing professional development short course called Managing Human Factors in Driving. The university also used the KTP research to help develop the world's first MSc in Driver Behaviour and Education, which started in 2008 within the Department of Systems Engineering and Human Factors.

DriverMetrics, a company wholly owned by Cranfield University, is exploiting the commercial potential of the psychometrically based Bus Driver Risk Index (BDRI) developed during one of the KTP projects. Over fifty organisations and thousands of drivers in the UK and several other countries currently use DriverMetrics to risk assess several different types of driver groups, including bus drivers, police drivers and fleet drivers. DriverMetrics provides an income stream to support the ongoing research activities of the university's Driving Research Group.



The fact that other bus operators are using the BDRI demonstrates that the passenger services industry recognises the value of the KTP project and Arriva's efforts to improve driver training and safety awareness.

Key Findings

- The simulator enhanced training programmes by realistically portraying dangerous road conditions.
- The psychometric assessment influenced recruitment decisions.
- It also influenced training by providing an early indication of each driver's specific training needs.
- Bus drivers exhibited a more positive attitude towards safety.
- Absenteeism decreased.
- Staff turnover decreased.
- Management communication strategies and behaviours improved safety throughout the organisation.
- Focus groups revealed different ways of thinking about safety across different tiers of the organisation and the development of sub cultures of employee groups within Arriva.

Further Information

KTP Research Project

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DriverMetrics

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Cranfield University Systems Engineering and Human Factors Department

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