UNIVERSITY OF CAMBRIDGE
Department of Engineering

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

The role of digital technology in creating a new 'smart' road user charging system that is publicly acceptable

The use and operation of our roads is an emotive and controversial issue, with issues of concern over funding and investment, taxation, traffic congestion, air pollution and how our roads are managed. The problem explored, is the current road infrastructure provision is not fit for purpose because it does not address a lack of funding, unfair charging, traffic congestion, poor maintenance, air pollution and carbon emissions – this raises concerns with the public. The specific research question posed is; *what is the potential contribution of digital technology in creating public acceptability for a new road user charging system?*

Whilst there is much literature in respect of road pricing, the consideration of public perception is a relative gap in research. Therefore, with the advances in technology over the last decade, this paper looks at the concept of a new 'smart' road user charging (RUC) system and specifically the public opinion of this in relation to the identified problems.

Using a mixed methods approach, questionnaire surveys were carried out with a cross section of the general public in the UK and industry stakeholders, (mainly around the Cambridge area). In total 281 responses were received and whilst not statistically representative, this gave a sample sufficient to provide well informed findings.

A review of the literature on this topic was carried out, along with the appropriate assessment of results and critical findings show that whilst the public were generally split on whether the current system was fair or unfair, when presented with the option of a new 'smart' system, the majority supported this idea and agreed that it could help solve the wider problems presented. There is also a clear public preference that any such system should be self-financing and sufficient to contribute to the maintenance of our roads, in addition there were comments raised, in respect of any system that is introduced needing to be fair for low income families and address privacy concerns. The study also identified the need for education around RUC in general, as there is some misunderstanding. Finally, the research highlighted the problem of behaviour change, lack of alternative modes and sets out recommendations in this respect.

The findings add some valuable insights to this field – they provide an indication of public perceptions as to how new digital technology can enable the creation of a 'smart' RUC system that is fair and could provide benefits for the environment. This can help inform future decisions by Government representatives, policy makers and industry stakeholders alike.

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