

Science for Environment Policy

Using revenues from congestion charging to expand green spaces increases public acceptance

Congestion charges are an effective means of reducing road traffic, but are often strongly opposed by the public. This study combined quantitative and qualitative methods to explore attitudes towards congestion charging in Spain, finding that opposition is reduced when revenues are spent on environmental improvements.

The construction of [roads](#), and the traffic that runs through them, has several negative environmental impacts, including habitat destruction, noise and [air pollution](#), and a significant contribution to [climate change](#).

Charging drivers to use roads is one way of [reducing traffic](#) and thus addressing these negative impacts. Congestion charges deter drivers from using the roads at the busiest times and are also a way of raising money to fund improvements to public services.

As a result, congestion charges are becoming important parts of public policy in an increasing number of European cities. Durham, a city in northern England, introduced a scheme in 2002, soon followed by London in 2003. In 2006, Sweden introduced an official congestion tax for vehicles entering and exiting central Stockholm.

This study was conducted in Spain, where the [Ministry of Public Works and Transport](#) recently proposed road pricing to reduce congestion and CO₂ emissions. The authors analysed the factors that affect acceptability of congestion charges in Las Palmas de Gran Canaria, a medium-sized Spanish city that receives many tourists and is a commercial centre.

The researchers used a combined approach including qualitative and quantitative data collection. They first carried out a series of focus groups, with a total of 81 participants, involving open-ended discussions of road pricing. The reactions showed a strong objection to the idea, largely based on a lack of transparency on how the collected money is spent. A significant proportion of the sample said they would only approve a scheme if they agreed with how the revenues were spent.

Focus group participants were then asked to fill in a questionnaire to measure their attitudes, beliefs and perceptions about transport, the environment, and pricing schemes. They were asked to rate their agreement (on a five-point scale) with a series of 19 statements, such as 'Transport problems are very serious in this city', 'Congestion pricing will solve the problem' and 'I would accept a road pricing scheme if implemented'. Analysis of the data revealed key elements to acceptability, including social responsibility and environmental sensitivity (e.g. concern about air pollution).

Finally, the researchers used a 'stated choice' experiment, in which a further 206 respondents were asked about their preferences regarding a hypothetical congestion scheme.

The experiment considered three different uses for the revenues collected by the scheme: improving the current bus transport system, creating an underground line, or increasing the number of green areas in the city.

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Interviewees were asked to indicate their preference to nine pairs of choices. For example, "Assuming that your current journey requires 20 minutes driving plus 35 minutes of parking time, would you prefer a charge of €1.50 and a 5 minute ride plus 10 minutes parking time? Revenues will be devoted to increasing green areas in the city." Suggested congestion charges ranged from €0.75 to €2.50.

Based on the results, the researchers could create a model to predict a modal split, the percentages of different behaviours in front of such a measure. They could also predict the charge the public would be most willing to pay. In the hypothetical scheme, vehicles entering the busiest part of town would be charged a daily fare of €2.22 to enter the cordon during weekdays.

The results showed that, although respondents were strongly opposed to congestion charges, over a third would be willing to pay this daily fare if the revenues were used to invest in green spaces, as well as public transport. The authors therefore recommend that congestion charging schemes emphasise the environmental benefits in order to gain public acceptance.

