



How much are People willing to pay to reduce Noise Pollution?

Spanish researchers have recently studied the dose-effect relationship between measured road traffic noise and reported disturbance, and the social and economical valuation of noise in a medium-sized city in Spain. The researchers found that up to 50% of the population would be willing to pay money in order to reduce noise pollution. The results may be useful when deciding what solutions should be adopted to reduce noise levels.

Environmental noise can negatively affect people's health and quality of life as it interferes with basic activities such as sleeping, resting, studying, and communicating. Noise has an important cost for society. Some European countries estimate that the social cost of road noise pollution is about 1% of their GDP. The possible effects of noise depend not only on the physical characteristics of the noise itself (sound pressure level, temporal evolution, frequency spectrum, etc.), but also on subjective parameters inherent to each person. The European Directive on Environmental Noise, adopted in June 2002, indicates that future noise maps should include action plans with financial information concerning cost-effectiveness assessments. In Spain, as in other Member States, very few studies focus on the valuation of noise, despite its increasing importance in the decision-making process in fields such as transport, health care, urbanism or education.

A recent Spanish study compared objective noise measurements to the annoyance reported by the public in order to evaluate the dose-effect relationship in a medium-sized city in Spain. The researchers also analysed how the population evaluates noise reduction from an economic and social point of view. To this end, the authors distributed a survey to a sample of people living near locations where in situ measurements for a city noise map had been performed and data was available.

The results showed that:

- Of the different possible sources of noise, "general traffic noise" was identified as the source that causes the greatest annoyance. Forty-one per cent of the people interviewed were said to be "highly disturbed" by traffic noise.
- People prefer to live in quiet environments, even if this means living in a property of lower economic value (54% of the surveyed population), further from their workplace (80% of the surveyed population), or even paying a higher price for the house (52% of the surveyed population).
- Fifty per cent of the population would be willing to pay to reduce noise contamination. The average quantity considered is 7.22 € per person per year. This amount is higher, 9.81 € per person per year, when only those people highly disturbed by noise were taken into account.
- Citizens believe that the local authorities (town halls) should spend up to 9.54 € per person and per year to decrease noise pollution. This amount would represent 12.66% of the environmental budget of the city where the survey was conducted and 1.38% of the total city budget.
- Regarding the actions suggested by the citizens to reduce noise pollution, the majority suggested diverting road traffic, while people living in the centre preferred building more pedestrian streets, and those living near a railway line chose building acoustic barriers as their preferred solution.
- People highly disturbed by noise have already started to react actively in order to improve their noise problem, either by complaining to the authorities, reporting it to the police, or by modifying their homes. For example, 29% of the people interviewed have improved the sound insulation in their homes and 30% have lodged a complaint against the source of the disturbance.

The findings of this study in terms of the amount of money that people are willing to pay is in line with previous studies in other countries. For example, in a similar study in France, 38% of the population surveyed were in favour of paying higher taxes to reduce noise pollution, and the amount they were willing to pay was 73€ per family per year.

This study provides useful insights into the social and economical valuation of noise that could be valuable when considering noise reduction measures.

Source: M.A. Martín et al. (2006) "Exposure-effect relationships between road traffic noise annoyance and noise cost valuations in Valladolid, Spain", *Applied Acoustics* 67: 945-958.

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Additional information: The EC's LIFE-Environment programme has funded several projects to support noise reduction and management in Europe. These include the GOAL project (LIFE00 ENV/A/000240) which set up a mobile 'noise-awareness laboratory' and trained more than 550 bus and taxi drivers in Graz, Austria, in 'low-noise' driving styles (see [project summary](#), [website](#) and [layman's report](#)). By combining clean vehicle technologies and advanced transport telematics as well as management technologies, the Greek IMMACULATE project (LIFE02 ENV/GR/000359) successfully demonstrated ways of improving air quality and reducing noise levels in Thessalonica. (see [project summary](#), [website](#) and [layman's report](#)). The French project DIAPASON (LIFE97 ENV/F/000193) developed a prototype software tool which provides global indicators for describing the noise environment related to each specific urban zone (see [project summary](#)). The Sylvie project (LIFE99 ENV/A/000394) demonstrated a consultative noise reduction process in inner city residential areas. Selected sites were analysed and solutions were worked out in co-operation with the noise polluter and the affected population (see [project summary](#) and [layman's report](#)).

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