

Paving of Local Urban Roadways, 1992

Summary:

CIAPEP was commissioned to conduct a study to improve the methodology for assessing road-paving projects for secondary urban roadways. The study identified the benefits and beneficiaries resulting from the implementation of a paving project.

The different benefits – corresponding to improved livability of dwellings, reduced overall trip costs, and reduced air pollution – would be enjoyed by different beneficiaries, including the residents of homes along the street to be paved, the residents of other nearby streets, pedestrians and car drivers using the street (even if they do not live nearby), the users of nearby unpaved roads, the users of other paved roads nearby with traffic congestion, and, lastly, other residents of the city.

After analyzing different methodologies, the team used the hedonic pricing method, in which prices are determined by characteristics inherent to the good being sold, to determine the increase in house prices resulting from paving. A simplified urban roadway methodology was used to determine the decrease in the general trip cost (GTC) of the vehicles using the roadways linked to the projects, and the EPA coefficients methodology quantified the physical decrease in dust particle emissions on the streets targeted by the projects. Once the “with project” and “without project” scenarios and the methodologies that would be used to estimate the benefits were defined, the team proceeded to assess the paving projects for certain streets – both separately and together – according to specific criteria, in order to formulate investment programs for the Granjas Antiguas neighborhood of the Puente Alto municipality.

The decision-making criteria used was the social net present value (NPV). The application of the hedonic pricing methodology in the chosen sector involved using intensive fieldwork, namely surveys and direct observation, to investigate the market prices of houses (on paved and unpaved streets) as well as their features and surroundings, such as the level of vehicle traffic along the neighborhood's streets.

Later, an econometric analysis was performed to estimate the increase in house prices resulting from paving. The results indicated that paving is very desirable for homeowners living on the streets that are paved, as they receive most of the benefits of paving. The study also found that the benefits obtained in terms of decreasing overall trip costs were also significant.