Measuring the Economic Value of Exercise in Labor-Intensive Urban Transportation Systems

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Recent studies show that labor-intensive transportation modes such as bicycling and walking play an essential role in providing needed exercise in an otherwise sedentary society. Transportation planners have not incorporated the value of exercise in benefit-cost analyses partly because of the measurement difficulties. The present analysis attacks these problems by

1. Ranging the value of the health benefits of threshold exercise by a 0 to 80 percent reduction in premature coronary heart disease (CHD), mortality, and morbidity (1); and
2. Ranging the economic benefits of reducing CHD based on the following methods: (a) the present value per 1-h exercise session of $0 to $2.30 (about 14 cents/km (23 cents/mile) for bicycling) and (b) the consumer surplus value of bicycling exercise, which ranged from 35 to 78 cents/km (56 cents to $1.25/mile) for a sample of university students.

These data show that the exercise benefits compose one of the major sources of benefits for bicycle and pedestrian systems. Computer simulated techniques for decision making (or benefit-cost analysis) under uncertainty can compare these (plus other) ranges of benefits with ranges of costs for bicycling facilities to generate distributions of probable benefit-cost ratios (2).

REFERENCES


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