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Denoised least squares estimators: An application to estimating advertising effectiveness.

(English) [Zbl 0960.62134](#)

Stat. Sin. 10, No. 4, 1231-1241 (2000).

Summary: It is known in marketing science that an advertiser under- or overspends millions of dollars on advertising because the estimation of advertising effectiveness is biased. This bias is induced by measurement noise in advertising variables, such as awareness and television rating points, which are provided by commercial market research firms based on small-sample surveys of consumers.

We propose a denoised regression approach to deal with the problem of noisy variables. We show that denoised least squares estimators are consistent. Simulation results indicate that the denoised regression approach outperforms the classical regression approach. A marketing example is presented to illustrate the use of denoised least squares estimators.

MSC:

62P99 Applications of statistics
90B60 Marketing, advertising
62J99 Linear inference, regression

Cited in **3** Reviews
Cited in **13** Documents

Keywords:

linear smoother; noisy data; threshold; wavelets; multiple regression models; denoised least squares estimators; advertising