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Payments for Ecosystem Services Programs: Predicting Landowner Enrollment and Opportunity Cost Using a Beta-Binomial Model

Abstract

This paper concerns predicting enrollment in payment for ecosystem services (PES) programs to promote habitat preservation on private lands. We develop a beta-binomial model to address both program participation and the amount of land enrolled by each potential enrollee. We apply the estimation approach to stated preference data from non-industrial private forest owners in Finland. As an alternative econometric model, we also develop a multivariate censored regression model of enrollments. Using cross-validation, we find that the beta-binomial model predicts at least as well as the multivariate censored model yet has fewer parameters. Using our estimation results, we demonstrate policy predictions regarding program enrollment and landowner opportunity cost.

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