

Name: MCQScore

Title: MCQScore is a STATA routine that scores the Monetary Choice Questionnaire, which is used as a measure of impulsivity.

MCQScore scores the Monetary Choice Questionnaire (questions in standard order), which uses a hyperbolic decay function to summarize the degree to which time discounts the value of a delayed reward. The scale parameter k is used as a measure of impulsivity. Conventional scoring requires a lot of hand labor, identifying an indifference point where a subject's behavior changes from preferring an immediate to a delayed reward. Instead, we use logistic regression to identify a contour where the probability of choosing either reward is 0.5, identifying in turn the corresponding hyperbolic function. Logistic regression is applied to raw binary choices from the survey, modeling the probability of choosing the delayed reward in response to time and a transformation of the reward ratio. The estimate of k is obtained as a ratio of the two betas. Output will include log- k estimates for small, medium, and large delayed reward sizes, a pooled log- k estimate and the component betas, and optionally, a jackknife estimate of standard error for the pooled log- k estimate and a bias-reduced estimate.

Two other ado files must be included for this routine to run. The first is mcqlik.ado, the penalized likelihood function that keeps the parameter estimates in bounds. The second is mcq2long.ado, which transforms the data to long format, and associates question numbers with reward values.

References

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Kirby, K.N., Petry, N.M., & Bickel, W.K. (1999) Heroin addicts have higher discount rates for delayed rewards than non-drug-using controls. *Journal of Experimental Psychology: General*, 128, 78-87.

Audrain-McGovern, J., Rodriguez, D., Tercyak, K.P., Epstein, L.H., Goldman, P., & Wileyto, E.P. (2004) Applying a behavioral economic framework to understanding adolescent smoking. *Psychology of Addictive Behaviors*, 18, 64-73.

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