

Goodness-of-fit test for a logistic regression model fitted using survey sample data

Kellie J. Archer
Department of Biostatistics
Virginia Commonwealth University
Richmond, VA
kjarcher@vcu.edu

Stanley Lemeshow
School of Public Health
Ohio State University
Columbus, OH

Abstract. After a logistic regression model has been fitted, a global test of goodness of fit of the resulting model should be performed. A test that is commonly used to assess model fit is the Hosmer–Lemeshow test, which is available in Stata and most other statistical software programs. However, it is often of interest to fit a logistic regression model to sample survey data, such as data from the National Health Interview Survey or the National Health and Nutrition Examination Survey. Unfortunately, for such situations no goodness-of-fit testing procedures have been developed or implemented in available software. To address this problem, a Stata ado-command, `svylogitgof`, for estimating the F -adjusted mean residual test after `svy: logit` or `svy: logistic` estimation has been developed, and this paper describes its implementation.

Keywords: st0099, svylogitgof, goodness of fit, survey design, svy, logistic regression, logit