

Statistical matching is a technique of integrating two or more data sets when information available for matching records for individual participants across data sets is incomplete. Statistical matching can be viewed as a missing data problem where a researcher wants to perform a joint analysis of variables that are never jointly observed. A conditional independence assumption is often used to create imputed data for statistical matching.

We consider an alternative approach to statistical matching based on an instrumental variable assumption. Parametric fractional imputation of Kim (2011) is applied to create imputed data under the instrumental variable assumption. Variance estimation is also discussed. The proposed method is directly applicable to the analysis of data from split questionnaire designs and measurement error models.