

In recent years the cube method (Deville & Tillé (2004) *Biometrika* 91 893-912) has made the selection of approximately balanced samples more practical. Exact balanced sampling solutions do not, however exist in all cases, and then the algorithm must choose between satisfying the given selection probabilities and satisfying the balancing equations. Current implementations of the cube method prefer the selection probabilities. We present an alternative approach to the selection of samples which minimises the deviation from balance, and test its application to the selection of samples from business surveys. We also review the practical challenges in using balanced samples arising from non-response, and mechanisms to overcome these.