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A Multi-Constraint Sample Allocation for Detailed National Estimates Made Trickier by Provincial Buy-Ins

For the Survey of Innovation and Business Strategies (SIBS), the 2009 sample allocation was designed to satisfy precision requirements for three modules of questions, each of which targeted different industry and employment size group combinations at the national level. For the 2012 iteration of the survey, this already complex system of constraints was made more complicated when provincial specifications were added to the equation. A non-linear programming method was proposed to solve this complex problem. This paper will go over the methods used to ensure that all precision requirements were satisfied, while minimizing sample size and avoiding small stratum sizes.