

**Department of Commerce
United States Census Bureau
OMB Information Collection Request
Business R&D and Innovation Survey
(Form BRDI-M)
OMB Control Number: 0607-0912**

Supporting Statement Part B. Collection of Information Employing Statistical Methods

1. Description of the Universe and Respondent Selection

The sample frame consists of a list of approximately 2.5 million company records that are created by aggregating data from establishment records contained on the Census Bureau's Business Register. The companies represented on the sample frame are located in the United States, are primarily composed of for-profit entities, are within the scope of the survey based on the North American Industry Classification System (NAICS), and are in business at the end of the year prior to the survey year. Each company record on the sample frame is assigned a 6-digit NAICS code, regardless of the number of business activities the company conducts.

A probability sample of approximately 200,000 companies will be selected to represent the approximately 2.5 million companies on the sample frame. Companies selected to receive Form BRDI-M will not receive Forms BRDI-1 or BRDI-1(S) in the survey year. Similarly, companies selected to receive Forms BRDI-1 or BRDI-1(S) will not receive Form BRDI-M in the survey year.

2. Procedures for Collection of Information

Statistical Methodology for Stratification and Sample Selection

The sample frame of approximately 2.5 million companies is stratified by industry group and company size (1-4 employees and 5-9 employees) for each company. The companies with 1-4 employees will be further stratified by state. Payroll is used as a proxy for number of employees when information on number of employees is not available. An independent simple random sample without replacement is then selected within each employee and industry stratum, using constraints on the coefficient of variation achieved on estimated totals to allocate the target sample size of about 200,000 companies to the strata. In addition to using constraints on the coefficient of variation, companies in determined strata will be sampled at a higher rate because the industry groups in those strata may be more likely to have companies with R&D.

Estimation Procedure

For a majority of the estimates, an adjusted Horvitz-Thompson (H-T) estimator and variance is computed. For the adjusted H-T estimator, an individual company's data are

weighted, and the weights are typically based on the product of two component weights. The first component weight is the sample weight, which is the reciprocal of the given company's probability of being selected in the sample. The second component weight is the unit nonresponse adjustment factor, which is applied to reported data for the given company. Then, the weighted company data are aggregated to produce estimated totals. Some companies may have a third component weight, which accounts for the potential overlap between the companies that were eligible to be selected to receive Form BRDI-M and Forms BRDI-1 or BRDI-1(S).

3. Methods to Maximize Response and Account for Nonresponse

Use of Multiple Modes – Sampled companies have the option to respond either via the web or mail.

Mandatory Reporting Requirement – Title 13, USC, requires businesses and other organizations that receive the questionnaire to answer the questions and return the report to the Census Bureau, which protects the confidentiality of the survey responses.

Follow-up procedures - Form BRDI-M companies will have approximately 40 days to report. Follow-up letters will be sent in May and July. The initial follow up letter sent in May will be mailed first class USPS and the second follow-up letter sent in July will be certified. Response will be evaluated throughout the process and, in August, a decision will be made as to whether a third follow-up mailing (including a form) and/or additional telephone follow-up support will be utilized. In addition, Census Bureau staff will telephone companies in targeted industries that have not returned a survey form or requested a filing time extension by August 1.

Estimating for missing data – Unit nonresponse is handled by adjusting weighted reported data. Some item nonresponse is handled using imputation methods already in use for the Business R&D and Innovation Survey.

4. Tests of Procedures or Methods

The Census Bureau and NCSSES annually conduct debriefings with survey respondents to assess the effectiveness of current question wording, instructions, and tools. In the event that these debriefings or other respondent feedback suggest the need for substantive changes to survey questions, any such changes will be cognitively tested with respondents prior to implementation.

5. Contacts for Statistical Aspects and Data Collection

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Attachments

- A. BRDI-M Questionnaire
- B. BRDI-1 Questionnaire
- C. BRDI-1 (S) Questionnaire
- D. BRDI-M Cover Letter
- E. Selected Screenshots from Electronic Instrument