National Center for Science and Engineering Statistics

Survey

Federal Facilities Research and Development (FFRD) Survey | 2022

The Federal Facilities Research and Development Survey collects information on R&D performed by facilities owned and operated by the federal government.

Survey Description

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Survey Overview (FY 2022 Survey Cycle)

Purpose

The Federal Facilities Research and Development (FFRD) Survey collects information on research and experimental development (R&D) expenditures, funding, and personnel for all federally owned and operated facilities in the United States. This new survey is the unique source of federal performer-reported data on R&D expenditures and R&D personnel. In conjunction with performer-reported data for the remaining sectors of the economy, FFRD Survey data can be used to estimate total national R&D performance and other critical statistics that are increasingly important in the analysis of global R&D competitiveness.

Data collection authority

The information is solicited under the authority of the National Science Foundation Act of 1950, as amended, and the America COMPETES Reauthorization Act of 2010. The survey is sponsored by the National Center for Science and Engineering Statistics within the U.S. National Science Foundation. The disclosure review number is NCSES-DRN24-064.

Major changes to recent survey cycle

Not applicable. The administration of the FY 2022 FFRD Survey is the first cycle of the survey.

Key Survey Information

Frequency	Annual.
Initial survey year	FY 2022.
Reference period	The federal fiscal year ending in 2022.
Response unit	Establishment.
Sample or census	Census.
Population size	The population consists of 470 research-performing federal facilities within 39 federal agencies.
Sample size	Not applicable.
Key variables	Key variables of interest are listed below. • R&D expenditures by type of R&D (basic research, applied research, and experimental development) • R&D expenditures by source of funds (federal government, state and local governments, businesses, nonprofits, and other) • Federally funded R&D expenditures by funding agency • Funding provided through public-private partnerships (yes or no) • R&D expenditures by field of R&D

- Total headcounts of facility R&D personnel by job category (federal employees and military personnel, contract employees, and all other personnel) and function (researchers, technicians, and support staff)
- Full-time equivalent counts of federal R&D personnel by function

Survey Design

Target population

The population for the FY 2022 FFRD Survey consisted of federally owned and operated facilities in the United States that performed R&D in FY 2022, excluding facilities of the Central Intelligence Agency (due to the classified nature of their work), federally funded research and development centers (surveyed separately in the Federally Funded Research and Development Centers R&D Survey), and University Affiliated Research Centers or facilities associated with universities, both of which may be surveyed as part of the Higher Education Research and Development Survey.

Sampling frame

The facilities for the FY 2022 FFRD Survey were identified from the list of federal agencies with R&D obligations based on the Survey of Federal Funds for R&D and the Federal Laboratory Consortium list of laboratories. A facility is defined as a unit within the agency that is responsible for performing R&D, generally with its own distinct budget and leadership.

Sample design

Not applicable.

Data Collection and Processing

Data collection

The FY 2022 survey was conducted by ICF under contract to NCSES. Surveys were distributed to designated reporting units. Since each agency has a different organizational structure, this reporting unit may be a division, branch, center, lab, or other entity and may span multiple locations. Because of this, the total number of reporting units for the FY 2022 FFRD Survey is 320, which represents the 470 research-performing federal facilities.

The data collection period was from September 2023 through March 2024. Respondents submitted their data using a questionnaire downloaded from the Web or sent via e-mail (i.e., PDF or Excel format) or use a Web-based data collection system. Telephone and e-mail were used for follow-up contacts with respondents.

Data processing

Completed questionnaires were carefully examined by survey staff upon receipt. Reviews focused on unexplained missing data, expenditures that significantly differed from the Federal Funds for R&D Survey intramural obligations, expenditures for performing research and funding research that matched, and other data anomalies. If additional explanations or data revisions were needed, respondents were sent personalized e-mail messages asking them to provide any necessary revisions before the final processing and tabulation of data.

Estimation techniques

Missing values were imputed based on multivariate imputation by chained equations (MICE).

Survey Quality Measures

Sampling error

Because the FY 2022 survey was distributed to all eligible agencies performing R&D, there was no sampling error.

Coverage error

Under the total survey error framework, coverage error describes the difference between reporting units and units in the target population that the frame was developed to reach. The subset of agencies is based on those reporting non-zero intramural R&D obligations on the Federal Funds for R&D Survey. There is a small risk of coverage bias if an agency had federal R&D expenditures but did not have reported obligations.

Nonresponse error

Of the 319 eligible reporting units, 299 responded for a response rate of 93.7%. For unit nonresponse, multiple follow-ups were conducted with nonresponding facilities, and multiple contact and data collection modes were used (i.e., phone and e-mail) to mitigate nonresponse error. The imputations include predictions of unit nonresponse to reduce the risk of nonresponse bias in the final estimates.

Measurement error

The largest risk of measurement error is likely respondents' interpretation of the definition of R&D activities and variations in record-keeping procedures used by respondents to answer the survey questions. In order to reduce measurement error, the FFRD Survey contained various ways for respondents to explain their survey responses.

Data Availability and Comparability

Data availability

Data are available for FY 2022 at **https://ncses.nsf.gov/surveys/federal-facilities-research-development/**.

Data comparability

Not applicable.

Data Products

Data from the FFRD Survey is published in analytic reports and data tables available at **https://ncses.nsf.gov/surveys/federal-facilities-research-development/**. Information from this survey will also be included in future versions of the congressionally mandated report ***Science and Engineering Indicators***.