

Impact of Internet-only Reporting on Response in the Business R&D and Innovation Survey

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Abstract

The 2013 Business R&D and Innovation Survey (BRDIS) included an experimental design to test the impact of removing the questionnaire booklet from the initial mail packages on response. The letter/experiment group received a letter with instructions for completing the survey online and a questionnaire booklet was not included in the mail package. The questionnaire/control group received a questionnaire booklet in the mail package that included instructions for reporting online consistent with past BRDIS cycles. At the end of the experiment, the weighted check-in rate for the letter/experiment group was 58.9% compared to 63.8% for the questionnaire/control group. The difference in check-in rates decreased from 4.9% to 2.3% after the 2nd nonresponse follow-up in which both groups were sent questionnaire booklets. Large companies (defined as having at least 500 domestic employees) exhibited higher weighted check-in rates in the letter/experiment group after all processing was complete. Companies reporting online reported significantly larger amounts of R&D expenditures (the key variable of interest to BRDIS) than those reporting on the questionnaire booklet.

Key Words: Company survey, survey mode, response rates, internet reporting, R&D

1. Introduction

Government statistical agencies are attempting to increase internet reporting rates in an effort to reduce costs. The Business R&D and Innovation Survey (BRDIS) has implemented a concurrent multi-mode collection strategy that includes an internet reporting option in addition to a questionnaire booklet since it was launched in 2008. The same questions are presented in the same layout for both modes. Historically, all respondents received a questionnaire booklet in the initial mail package that presented an option to report on the internet. In 2011, a subset of the sample (larger companies) received a letter that referred the respondent to the web site for internet reporting. These respondents could request a questionnaire booklet. The questionnaire booklet was also included in at least one of the non-response follow-up mailings for all survey cycles since 2008. This multi-mode system is designed to minimize coverage bias and still conduct the survey at reasonable costs (Biemer and Lyberg 2003).

³ This report is released to inform interested parties of research and to encourage discussion. The views expressed on methodological, technical, or operational issues are those of the authors and not necessarily those of the U.S. Census Bureau.

For BRDIS, the internet mode is less expensive than the questionnaire booklet in terms of collection costs and requires fewer editing resources and analyst corrections. Survey staff analysis of BRDIS responses and respondent debriefings showed that some companies that report via the internet still used some intermediate collection medium to collect data internally prior to submitting the report on the internet. Some respondents used the questionnaire booklet to gather data if the data was in close proximity to them. Others needed some electronic version of the questionnaire that could be emailed to gather data from respondents who were in another state or country. The research also showed that respondents were taking significant time to compile data from multiple sources and then hand enter the data into the internet instrument. This research led the staff to develop tools such as fillable PDF versions of each questionnaire, uploadable Microsoft Excel spreadsheets of each individual section, and a consolidator spreadsheet to facilitate collection from multiple business units within the company. The tools are available for the respondent to download from the Census Bureau's Business Help Site. The goal was to facilitate the reporting process by providing electronic tools that could replace the questionnaire booklet in the reporting process, making the internet reporting process less burdensome and thus more attractive.

The easiest solution to increase the internet reporting rate would be to eliminate the questionnaire booklet from the process, establishing a single mode of collection. The biggest concern in using web-based surveys was coverage bias (Couper 2000). Coverage bias would occur if some part of the population does not have access to the internet. The cited research focuses on household surveys and it is unclear how much coverage bias might exist for a present day business survey like BRDIS.

BRDIS uses a questionnaire booklet at two points in its multi-mode system. It is included in the initial mail packages and it is used during nonresponse follow-up mailings. During the 2013 survey cycle, an experiment was conducted to assess the impact of removing the questionnaire booklet from the initial mail packages on BRDIS response. This paper presents the results of this experiment, focusing on differences in check-in rates and internet reporting rates between the letter/experiment and questionnaire/control groups.

1.1 Characteristics of the BRDIS

The U.S. Census Bureau conducts BRDIS under a joint partnership agreement with the National Science Foundation (NSF). BRDIS replaced the Survey of Industrial Research and Development (SIRD), which for over 50 years was the official government source of information on the research and development activity of businesses in the United States. BRDIS is an annual survey of approximately 43,000 to 45,000 companies. The survey produces estimates of the amount of research and development (R&D) performed and paid for by a target population of all for-profit businesses that have at least one establishment located in the U.S., have 5 or more paid employees in the U.S., and are classified in selected manufacturing and nonmanufacturing NAICS (North American Industry Classification System) industries. There are approximately 2 million companies in the target population.⁴

⁴ The full set of detailed tables and technical notes from this survey will be available in the report Business R&D and Innovation: 2013 (<http://www.nsf.gov/statistics/industry/>).

Based on prior results from the survey, we estimate that less than 10% of the total population has positive R&D costs and a relatively small number of large firms do the majority of the R&D spending. The top 10% of sampled firms accounted for 89% of the total BRDIS estimate for worldwide R&D expenditures in 2011 and 90% in 2012. Because R&D is such a rare event within the target population, we use information on R&D activity for prior years from the BRDIS and administrative sources to partition the sample frame and to determine what survey instrument to administer to each sampled company.

The 2013 BRDIS data were collected using two questionnaire booklets: the standard questionnaire booklet of 48 printed pages (Form BRDI-1) and a shorter questionnaire booklet of 8 pages (Form BRD-1S).⁵ The BRDI-1 population are companies with reported or imputed U.S. R&D performance of \$1 million or more for at least one of the two prior survey years, and the BRDI-1S population are all other companies.⁶ The BRDI-1 population has been receiving an initial mail package without the questionnaire booklet since 2011.

1.2 Experimental design

From the approximately 38,000 companies that were to receive the BRDI-1S booklet, a stratified random sample of approximately 15,000 companies was selected for the letter/experiment group. The population was stratified by industry group. The mail package sent to the letter/experiment group included a letter that informed the company that they were required by law to report to BRDIS and instructing the company to report online (See Attachment A). The letter included the website for reporting online to BRDIS and the company's ID and password. The mail package sent to the companies in the questionnaire/control group included a cover letter that informed the company that they were required by law to report to BRDIS (See Attachment B) as well as the BRD-1S questionnaire booklet. The BRD-1S questionnaire booklet included the website for reporting online to BRDIS and the company's ID and password. A brochure explaining the benefits of internet reporting was included in the mail packet for both letter/experiment and questionnaire/control groups (See Attachment C).

1.3 Defining response rates

The analysis in this paper focuses on differences in weighted check-in rates and weighted internet reporting rates between the letter/experiment and questionnaire/control groups. To count as a checked-in case, a company need only return a questionnaire booklet to the Census Bureau or submit a response to BRDIS using the internet survey instrument. The weighted check-in rate (WCIR) is:

$$WCIR = [C/(E+U)] * 100$$

where

- C is the (weighted) number of reporting units selected for the sample with a check-in date. A check-in date is assigned to a case when a submission is

⁵ For copies of the questionnaire booklets included in the BRDIS initial mail packages go to: <http://www.nsf.gov/statistics/srvyindustry/#qs>

⁶ A small number of companies that met the criteria for receiving Form BRDI-I were administered the shorter form instead due to a history of nonresponse.

received via the internet reporting option or when the Census Bureau receives its questionnaire booklet.

- E is the (weighted) number of reporting units selected for the sample that were eligible for data collection, and
- U is the (weighted) number of reporting units selected for the sample for which eligibility could not be determined (Bates et al., 2008).

This weighted check-in rate is **not** directly comparable to response rates published in official BRDIS statistics. Due to limitations of the BRDIS frame, it includes companies that are outside the scope of the BRDIS target population. When a company that was included in the BRDIS sample is determined to be out of scope (such as when a company reports having fewer than 5 paid employees in the U.S.) it is removed from official BRDIS statistics and response rates. Published response rates also take into account companies that submitted/returned forms with insufficient data to qualify as a response.

This paper also analyzes internet reporting patterns. The weighted internet reporting rate (IRR) is:

$$\text{IRR} = (I/C) * 100$$

Where

- I is the (weighted) number of checked-in units that were submitted via the internet.
- C is the (weighted) number of reporting units selected for the sample with a check-in date.

2. Testing the influence of a questionnaire booklet on BRDIS response

Figure 1 shows the weighted check-in rates for the letter/experiment and questionnaire/control groups over the course of the 2013 BRDIS collection cycle. The WCIR for the letter/experiment group exceeded that of the questionnaire/control group at the very beginning of the survey cycle, in part because of the lag between when a respondent places a questionnaire booklet in the mail and when the Census Bureau receives and scans it. The WCIR of the control group overtook that of the experiment group less than two weeks into the survey cycle and remained higher for the remainder of the experiment. On April 1, 2014, the Census Bureau mailed a letter to all delinquent cases as part of nonresponse follow-up procedures. As the graph shows, we see an increase in the check-in rate immediately following the first nonresponse letter for both groups. A second nonresponse follow-up on May 12, 2014 included a questionnaire booklet as part of the mail package sent to delinquent cases in both the letter/experiment and questionnaire/control group. After the questionnaire booklet was introduced into the process, we see the differences between the rates for the letter/experiment group questionnaire/control group decrease. Because a questionnaire booklet is introduced to both groups on May 12, this paper analyzes differences between the two groups on this date as well as differences between the groups at the end of the survey's collection cycle.

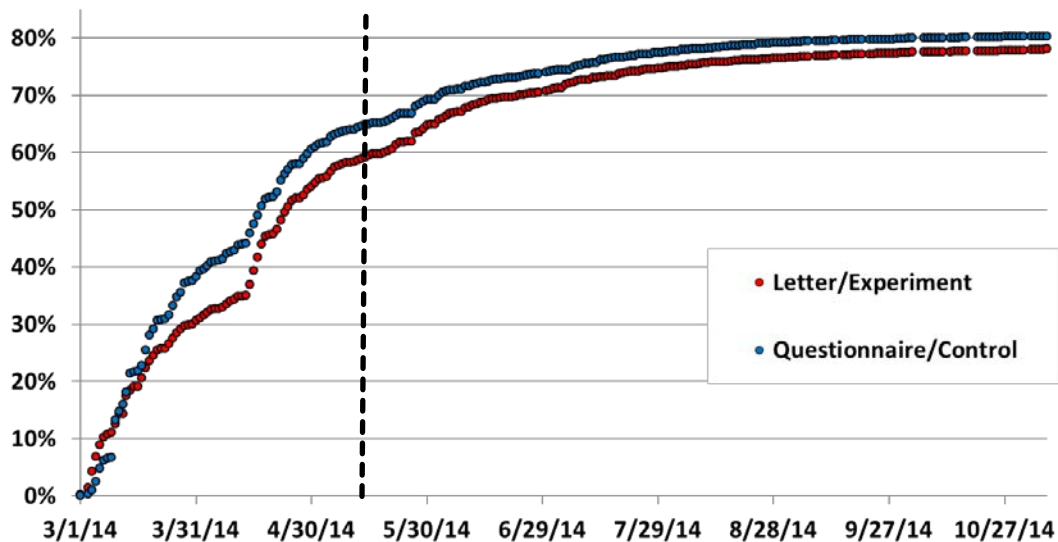


Figure 1: Weighted check-in rates by date. The second nonresponse follow up on 5/12/14 (dashed line) included a questionnaire booklet to both groups.

Source: 2013 Business R&D and Innovation Survey. The full set of detailed tables and technical notes from this survey will be available in the report *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>).

2.1 Weighted check-in rates

Table 1 shows the WCIR for the two groups on May 12, 2014 by various company characteristics. Overall, on May 12, the WCIR for the letter/experiment group was 58.9% and the WCIR for the questionnaire/control group was 63.8%. A two-tailed z test confirmed that this difference of 4.9% was significant at the 10% level.

Various company characteristics available on the survey frame were used to subset the two groups for further analysis. The WCIR for large companies (defined as having 500 or more domestic employees) were higher within the letter/experiment group than in the questionnaire/control group, but the differences were not statistically significant. These results are consistent with findings from research done with the BRDI-1 population. For large companies, email/internet was a primary mode of communication both internally and externally. In some instances, this is out of necessity due to the geographical dispersion of business units within the company's structure.

Table 1 also shows the analysis by North American Industry Classification System (NAICS) industry group. The WCIR of the questionnaire/control group compared to the letter/experiment group was higher and significant for companies in the mining (NAICS 21), manufacturing (NAICS 31-33), wholesale trade (NAICS 42), and other nonmanufacturing groups. Within the utilities sector (NAICS 22)—a sector with very few small companies—the WCIR of the letter/experiment group was higher and significant. Differences in the WCIR between the letter/experiment and questionnaire/control groups were not statistically significant for companies in the information (NAICS 51), professional, scientific, and technical services (NAICS 54), and health care and social assistance (NAICS 62) sectors. When considering the R&D intensities of the groups (intensity defined by the contribution of the sector to the total), the R&D intensive groups where the differences are significant (NAICS 32 & 33) have much smaller differences

than those not R&D intensive. Two R&D intensive NAICS groups (NAICS 51 & 54) had differences that were not significant.

There was no statistical difference in WCIR between the questionnaire/control and letter/experiment groups for the subset of companies with a history of response to BRDIS. For companies with no history of response to BRDIS the WCIR of the questionnaire/control group was significantly higher than that of the letter/experiment group.

Table 1: Weighted check-in rates for letter/experiment and questionnaire/control groups as of May 12, 2014, by company characteristics (standard errors in parenthesis)

	Questionnaire/Control Group	Letter/ Experiment Group
Total*	63.8 (0.63)	58.9 (0.81)
Employment size		
Small Companies (<500 domestic employees)*	63.8 (0.63)	58.8 (0.81)
Large Companies (>=500 domestic employees)	52.0 (4.86)	57.9 (5.87)
NAICS Sector		
<i>R&D Intensive Industry Groups</i>		
32 (Manufacturing, Wood/Chemical/Plastic/Mineral)*	65.9 (1.59)	61.4 (2.06)
33 (Manufacturing, Machinery/Electronics/Transport)*	63.1 (1.20)	59.8 (1.50)
51 (Information)	67.8 (2.41)	62.7 (3.14)
54 (Professional, Scientific, and Technical Services)	69.1 (1.60)	68.7 (2.00)
<i>Non R&D Intensive Industry Groups</i>		
21 (Mining, Quarrying, and Oil and Gas Extraction)*	67.0 (4.10)	44.9 (5.90)
22 (Utilities)*	42.8 (9.90)	72.7 (0.81)
31 (Manufacturing, Food/Beverage/Textile/Leather)*	59.0 (2.52)	49.2 (3.24)
42 (Wholesale trade)*	62.7 (1.63)	54.4 (2.17)
62 (Health Care and Social Assistance)	65.6 (1.79)	61.7(2.35)
Other nonmanufacturing*	62.4 (0.89)	57.0 (1.14)
History of BRDIS response		
Responded in an earlier survey cycle	68.5 (1.41)	67.8 (1.76)
No history of response*	63.6 (0.65)	58.6 (0.83)

* Difference between experiment and control group significant at the 10% level.

Source: 2013 Business R&D and Innovation Survey. The full set of detailed tables and technical notes from this survey will be available in the report *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>).

Table 2 shows that at the end of the collection cycle, the questionnaire/control group's WCIR exceeded that of the letter/experiment group by 2.3 percentage points and the difference was still significant at the 10% level. The comparison for the large companies shows that the letter/experiment group had a significant difference of 9.7% higher than the questionnaire/control group at the end of the processing cycle. Once again, these

results are consistent with our understanding of the BRDIS reporting process for large companies.

The number of significant differences among the NAICS groups decreased from seven to three after the questionnaire booklet was introduced into the process and, in all three cases, the differences decreased between the letter/experiment and questionnaire/control groups. When we consider the R&D intensity of the groups, the only significant difference is in NAICS 33 (3.4% higher for the questionnaire/control group). The difference for NAICS 32 was significant on May 12 but then not significant at the end of processing. NAICS sectors 51 and 54 were not significant at the 10% level on May 12 nor were they significant at the end of processing.

The difference for companies who had a history of response to BRDIS remained not significant while the difference for companies without a history of response was still significant at the end of processing. The difference in the rates decreased from 5.0% to 2.3%.

Table 2: Final weighted check-in rates for letter/experiment and questionnaire/control groups, by company characteristics (standard errors in parenthesis)

	Questionnaire/Control Group	Letter/Experiment Group
Total*	80.5 (0.52)	78.2 (0.68)
Employment size		
Small Companies (<500 domestic employees)*	80.5 (0.52)	78.1 (0.69)
Large Companies (>=500 domestic employees)*	76.1 (4.24)	85.8 (2.76)
NAICS Sector		
<i>R&D Intensive Industry Groups</i>		
32 (Manufacturing, Wood/Chemical/Plastic/Mineral)	81.2 (1.31)	81.0 (1.64)
33 (Manufacturing, Machinery/Electronics/Transport)*	80.8 (0.97)	77.4 (1.30)
51 (Information)	80.1 (2.13)	82.7 (2.49)
54 (Professional, Scientific, and Technical Services)	85.0 (1.20)	84.1 (1.58)
<i>Non R&D Intensive Industry Groups</i>		
21 (Mining, Quarrying, and Oil and Gas Extraction)*	85.3 (2.89)	64.2 (6.14)
22 (Utilities)	68.9 (10.34)	88.3 (7.21)
31 (Manufacturing, Food/Beverage/Textile/Leather)	75.3 (2.22)	70.4 (2.99)
42 (Wholesale trade)	78.8 (1.39)	76.3 (1.86)
62 (Health Care and Social Assistance)	83.0 (1.42)	82.0 (1.86)
Other nonmanufacturing*	79.3 (0.75)	76.5 (0.98)
History of BRDIS response		
Responded in an earlier survey cycle	86.3 (1.02)	84.3 (1.36)
No history of response*	80.3 (0.53)	78.0 (0.70)

* Difference between experiment and control group significant at the 10% level.

Source: 2013 Business R&D and Innovation Survey. The full set of detailed tables and technical notes from this survey will be available in the report *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>).

When examining the differences in check-in rates for the 14 subsets in Tables 1 and 2, on May 12 there were nine differences that were significant at the 10% level. That number decreased to six at the end of the survey cycle and for all six subsets, the rates decreased after the questionnaire booklet was introduced into the process. Now we examine the differences in the internet-reporting rate between the two groups.

2.2 Weighted internet reporting rates

Table 3 shows that the internet reporting rate for the letter/experiment group on May 12 was 97.1% compared to 59.7% for the questionnaire/control group. These results were expected given that the letter/experiment group would have had to request a paper questionnaire to be mailed to them prior to May 12. Table 3 also shows that the internet reporting rate for the questionnaire/control group increased by 6.9% from May 12 to the end of processing while the internet reporting rate for the experiment group decreased by 7.5% during the same time frame after the questionnaire booklet was introduced into the process.

Table 3: Weighted internet reporting rates (standard errors in parenthesis)

	Questionnaire/Control Group	Letter/Experiment Group
May 12, 2014*	59.7 (0.80)	97.1 (0.36)
Final*	66.6 (0.62)	89.6 (0.51)

* Difference between experiment and control group significant at the 10% level.

Source: 2013 Business R&D and Innovation Survey. The full set of detailed tables and technical notes from this survey will be available in the report *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>).

Table 4 shows the differences comparing the rates for companies that reported prior to May 12 and those that reported after May 12. The internet reporting rates for both groups decreased after the questionnaire booklet was introduced (the differences were significant at the 10% level). As expected, the difference in the experiment group was much larger. In both cases, the inclusion of the questionnaire booklet in the second nonresponse follow-up resulted in more cases reporting via the internet than those that reported on the questionnaire booklet (the rates were tested against 50% and in each case the difference was significant at the 10% level). We now examine the possible impact to R&D expenditure estimates and nonresponse bias.

Table 4: Weighted internet reporting rates (standard errors in parenthesis)

	Questionnaire/Control Group	Letter/Experiment Group
Companies who reported prior to May 12, 2014*	59.7 (0.80)	97.1 (0.36)
Companies who reported after May 12, 2014	54.0 (1.60)	54.9 (1.86)

* Difference between experiment and control group significant at the 10% level.

Source: 2013 Business R&D and Innovation Survey. The full set of detailed tables and technical notes from this survey will be available in the report *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>).

2.3 Impact on R&D expenditure estimates and nonresponse bias

The analysis has shown that the overall check-in rate for the letter/experiment group was lower at the end of the experiment as well as at the end of the processing cycle. Given this, we need to examine the possible impact on the key data estimates for BRDIS, total R&D expenditures. Our analysis will focus on responses that were received after May 12. Table 5 shows the differences between the mean R&D expenditures for cases that reported via the internet and those who reported using the questionnaire booklet or reported by means other than the internet (such as data collected by an analyst during nonresponse telephone follow-up). Table 5 shows that companies that report via the internet have significantly higher contributions to the total R&D expenditure estimates than those companies who report using the questionnaire booklet (the differences were significant at the 10% level when comparing between the groups as well as within each group the differences between modes was significant). These results are driven by the fact that noticeably more zero R&D expenditure cases reported on the questionnaire booklet than via the internet. This result is not surprising given that the questionnaire booklet would be less burdensome than the internet for companies that have zero R&D since they only need to answer a few high level questions.

It is important to note that BRDIS implements a non-response weight adjustment for unit nonresponse cases where the measure of size is used in the calculation. This implies that there would also be some impact on the Total Quantity Non-Response Rates (TQNR) that is calculated for each estimate. The TQNR represents the portion of the estimate that is attributed to the nonresponse weight adjustment and the impact of imputation methodology used to handle item nonresponse.

Table 5: Weighted Mean R&D expenditures (\$thousands) for cases reporting after May 12, 2014 (standard errors in parenthesis)

Reporting mode	Questionnaire/Control Group	Letter/Experiment Group
Internet*	156.5 (10.40)	106.0 (9.94)
Questionnaire/other*	24.2 (3.38)	17.3 (1.73)

* Difference between experiment and control group significant at the 10% level. Differences between reporting modes also significant at the 10% level.

Source: 2013 Business R&D and Innovation Survey. The full set of detailed tables and technical notes from this survey will be available in the report *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>).

3. Conclusions

The experiment was designed to test the impact of removing the questionnaire booklet from the initial mail package on a subset of the sample that includes the majority of small companies (< 500 domestic employees) in the overall population. A questionnaire booklet was included in the 2nd nonresponse follow-up mail package mailed on May 12, 2014. The results showed that the questionnaire/control group maintained a higher weighted check-in rate throughout the majority of the processing cycle. The difference was 4.9% when the questionnaire booklets were introduced into the process and it decreased to 2.3% after all processing was complete. In both cases, the differences were significant at the 10% level. When we examined the check-in rate differences for 14

subsets of the data, we found six differences that were significant at the 10% level both on May 12 and when all processing was complete. In all six subsets, the differences decreased after the questionnaire booklet was introduced. We also examined the differences in the internet reporting rate between the groups and found the letter/experiment group had a rate 37.4% higher when the questionnaire booklet was introduced and the difference decreased to 23.0% when all processing was complete. Once again, both differences were significant at the 10% level. When considering the impact of the lower check-in rate on the estimates for total R&D expenditure we found that cases that reported using the internet had a much higher mean R&D expenditure than those that used the questionnaire booklet. We noticed a noticeably higher rate of zero R&D expenditure reports submitted via the questionnaire booklet after it was introduced into the process in the 2nd nonresponse follow-up mail package.

Survey managers within government agencies are always looking for methods to lower the overall cost of collections while maintaining acceptable levels for key survey metrics. When considering a multi-mode system such as the one implemented for BRDIS, the internet mode has been shown to have cost advantages over the traditional questionnaire booklet thus we would maximize our cost savings if all respondents reported using the internet. BRDIS staff has dedicated significant resources to understanding the reporting processes of the most significant companies in the population and to ensure response. The results of this research led managers to decide to develop tools that are accessible from the Census Bureau's Business Help Site to replace the questionnaire booklet in the reporting process. The questionnaire booklet (BRDI-1, 48 pages in length) was removed from the initial mail package for these companies in 2011 (that strategy has not changed). The research in this paper focuses on a subset of the sample where there is little or no information about R&D activity and where considerably less resources are used to insure response. Therefore, there was more risk to the check-in rate for this population due to the uncertainty.

BRDIS survey managers viewed the results from a cost/benefit perspective when deciding how to adjust the collection strategy moving forward. First, the results show that there may be a cost in terms of a slightly lower check-in rate. The impact of the lower rate on R&D expenditure estimates is minimized by the results that the estimated mean of the cases that reported via questionnaire was very small. It is also important to note that a nonresponse weight adjustment is implemented for BRDIS so there would be some offset in the estimates and the magnitude of that offset would be reflected in higher TQNR rates. The benefit would be the 37.4% increase in the internet rate and the cost savings associated with that increase. The BRDIS multi mode system included a questionnaire booklet in the 2nd nonresponse follow-up mail package. After May 12, there was a significant increase in the number of companies reporting zero R&D on the questionnaire booklet. Whereas these cases have no impact on the estimates, they do increase the check-in rate by reporting.⁷ The results also showed there were more internet responses than questionnaire booklet responses after May 12 for both the questionnaire/control and letter/experiment groups. This is a possible indication that a questionnaire booklet may be a better nonresponse follow-up reminder than a letter for this population. Based on these results, survey managers decided that further testing was warranted before implementing a 100% letter only initial mail package. For the 2014 BRDIS, the sample size of the

⁷ The burden estimate for a company with zero R&D in the BRD-1(S) population is 0.5 hours compared to 6 hours for companies who have R&D activities so the questionnaire booklet may be less burdensome for these companies when compared to the burden of internet reporting.

letter/experiment group was increased to approximately 25,000 and the questionnaire was moved to the 3rd nonresponse follow-up mail package.

It is important to note that the characteristics of the BRDIS sample design and collection/follow-up strategies where the most significant contributors to the R&D estimates are isolated and handled differently minimized the overall risk to implementing the strategies outlined in this paper. The Census Bureau and NSF survey managers must develop cost effective strategies where an acceptable check-in rate can be maintained among the population of companies that perform little or no R&D to maintain an overall acceptable check-in rate.

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Attachment A:

Dear Survey Coordinator,

In an effort to conserve resources, the initial mailing for the 2013 **Business R&D Survey** does not contain a survey booklet. All of the electronic tools necessary to complete your company's report are available at the Census Bureau's Business Help Site: econhelp.census.gov/brdscr.

This national survey collects information from businesses operating in the U.S. and is the single most important source of up-to-date information on business research and development in the United States. Accurate information about R&D will help leaders in the public and private sectors make better decisions to strengthen American competitiveness.

This survey is **mandatory and confidential**. Your company's response is required by law under Title 13 of the U.S. Code. Title 13 also protects the confidentiality for all of your company's information. Only persons sworn to protect Title 13 information may see your responses.

You can **file your survey online** through the Business Help Site. Your User ID and Password are:

User ID:

Password:

Electronic versions of the survey form (Excel and PDF) can be downloaded and distributed to others in your company to facilitate the preparation of your company's response. These files are available from the Business Help Site.

Your survey information will be aggregated to produce summary statistics for reports produced by the National Science Foundation (NSF). You can learn more about the ways the data collected by this survey are used at <http://www.nsf.gov/statistics/srvyindustry/about/brdis/how.cfm>.

Your company's response is **due 30 days from receipt**. If you need assistance or would like to request that a paper booklet be mailed to your company, please call our survey analysts at 1-800-772-7851, option '5', between 8:00 am and 5:00 pm Eastern time, Monday through Friday.

A small percentage of respondents to this survey may be asked to report additional detail on a follow-up survey. This detail is needed to produce comprehensive national statistics.

Thank you in advance for your timely response. Your company's response provides critical information on investments in our nation's future.

Sincerely,

John R. Gawalt
Director
National Center for Science and Engineering Statistics
National Science Foundation

Nick Orsini
Chief
Manufacturing and Construction Division
U.S. Census Bureau

Enclosures

The Business R&D Survey is conducted under a joint partnership agreement between the National Science Foundation and the U.S. Census Bureau.



UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
 Washington, DC 20233-0001

Attachment B:

Dear Survey Coordinator,

Enclosed is the 2013 **Business R&D Survey**. This national survey collects information from businesses operating in the U.S. and is the single most important source of up-to-date information on business research and development in the United States. Accurate information about R&D and innovation will help leaders in the public and private sectors make better decisions to strengthen American competitiveness.

This survey is **mandatory and confidential**. Your company's response is required by law under Title 13 of the U.S. Code. Title 13 also protects the confidentiality for all of your company's information. Only persons sworn to protect Title 13 information may see your responses.

You can **file your survey online** through the Census Bureau's Business Help Site: econhelp.census.gov/brdscr. Your User ID and Password are located on the front page of the questionnaire booklet. Alternatively, you may return your completed questionnaire in the enclosed envelope.

Electronic versions of the survey form (Excel and PDF) can be downloaded and distributed to others in your company to facilitate the preparation of your company's response. These files are available from the Business Help Site.

Your survey information will be aggregated to produce summary statistics for reports produced by the National Science Foundation (NSF). You can learn more about the ways the data collected by this survey are used at nsf.gov/statistics/srvyindustry/about/brdis/how.cfm.

Your company's response is **due 30 days from receipt**. If you need assistance, please call our survey analysts at 1-800-772-7851, option '5', between 8:00 am and 5:00 pm Eastern time, Monday through Friday.

A small percentage of respondents to this survey may be asked to report additional detail on a follow-up survey. This detail is needed to produce comprehensive national statistics.

Thank you in advance for your timely response. Your company's response provides critical information on investments in our nation's future.

Sincerely,

John R. Gawalt
 Director
 National Center for Science and Engineering Statistics
 National Science Foundation

Nick Orsini
 Chief
 Manufacturing and Construction Division
 U.S. Census Bureau

Enclosures

The Business R&D Survey is conducted under a joint partnership agreement between the National Science Foundation and the U.S. Census Bureau.

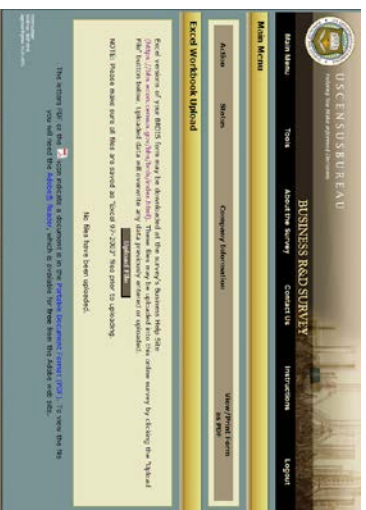
YOUR TIME IS IMPORTANT!!!

We understand that fulfilling your company's obligation to complete the Business R&D Survey (BRD-1S) can be time consuming. That is why we have introduced several tools to aid you in this task on the survey's website:
econhelp.census.gov/brdscr



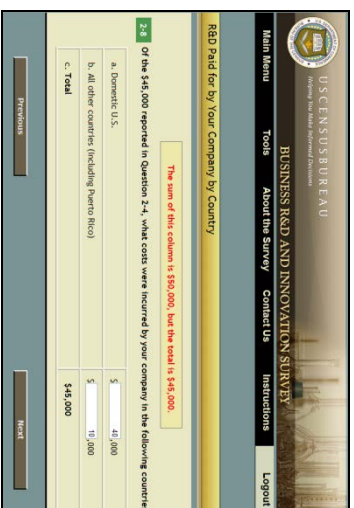
A SMART SURVEY SAVES TIME

The online survey automatically skips questions that do not apply to your company and checks for common errors.



FLEXIBLE DATA ENTRY

Key your data using the online survey and the uploaded data will be checked for any errors.



You can exit the online survey and come back as many times as necessary. Your work will be saved on secure Census Bureau servers.

For your records, you can save your survey data to a PDF by clicking "Tools" then "View/Print report as PDF".

Don't worry if you find a mistake after submitting your survey – you can resubmit the survey if you need to make corrections.

IN-DEPTH INSTRUCTIONS

Find question-by-question instructions on the "Forms & Instructions" page and the answers to frequently asked questions on the "FAQs" page on the survey website:

econhelp.census.gov/brdscr

SECURE ONLINE REPORTING

Use the User ID and Password on the front page of the survey booklet we mailed to you to file your survey online.



To log in to the online survey, click the "Survey Log in" button, located on the survey's website:

econhelp.census.gov/brdscr

EXCEL WORKSHEETS

Download Microsoft Excel versions of the survey, located on the survey's website.

The Excel worksheets are designed to help you collect and consolidate information within your company. For more information, go to the survey's website.

CONTACT US

For general survey guidelines or questions, call 1-800-772-7851 (option '1' for English, then option '5' to speak with a survey specialist) between 8:00 a.m. and 5:00 p.m. ET, Monday through Friday.

For technical or content related questions, call 1-800-851-2014 (option '0') between 8:00 a.m. and 5:00 p.m. ET, Monday through Friday.

