

EFFORTS TO IMPROVE RESPONSE RATES IN THE CURRENT EMPLOYMENT STATISTICS PROGRAM: RESULTS FROM TWO EXPERIMENTS

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Purpose: This paper reviews two methodological tests to improve response rates for sample units who report to the Current Employment Statistics (CES) program using touchtone data entry (TDE). The first is a test of gift incentives and the second an alternative non-response prompting (NRP) script. For the incentives test, the test sample received a small gift (a small pocket size calculator or a mouse pad). For the alternative NRP method test, rather than an NRP reminder call or FAX message, the test sample units received a call and were asked to provide the data while on the phone. The paper analyzes response rates and discusses factors that may impact them.

Background: Achieving high response rates in a timely and cost-effective manner is one of the top priorities in the CES program conducted by the Bureau of Labor Statistics. CES provides monthly estimates of total non-farm employment, production and non-supervisory worker employment and related hours and earnings. CES utilizes several data collection methods including such as mail, FAX, the Internet, computer-assisted telephone interviewing (CATI), and TDE. The latter constitutes roughly 47% of the CES sample, or approximately 150,000 establishments. The CES sample consists of about 300,000 business establishments.

Under TDE, the reporters are provided a toll-free number. They are expected to self-report their data each month using their touchtone telephone. Those units that are delinquent on their assigned NRP day receive a non-response prompting “reminder” call or FAX message to remind them to report their data by our primary deadline.

Over the years there has been a decline in response rates. The two tests were conducted to see if either a gift incentive or enhancing the NRP script would re-establish the response rate to its former level or even increase it.

Incentives Test

Methodology: The CES survey is voluntary and as a way to improve response rates we sent a randomly selected sample of our respondents a small incentive in form of a gift in January 2002. For the next six months

we compared their response rates to a randomly selected control group not receiving the gift.

Based on their reporting mode, three types of sample respondents were selected for the test: respondents reporting through CATI, FAX, or TDE. Five hundred units each were selected from CATI and FAX and 1000 from TDE. Half of the selected sample received a pocket-size calculator engraved with the Department of Labor seal and the other half received a mouse pad with the 2002 calendar displaying the CES data collection deadline for each month. The monetary value of these gifts was about \$3. We also selected a parallel control group sample.

Results: From January to June 2002 the response rates from the test sample were compared to those of the control group. Figure 1 shows the six-month average response rates for the treatment samples who received the calculator. No significant differences were observed between the treatment and control group, except for FAX respondents. For this group, the average response rate for the treatment group was 67% compared to 61% for the control group and the difference was significantly different (at 0.05 significance level).

Figure 1: Average Response Rates: Calculator

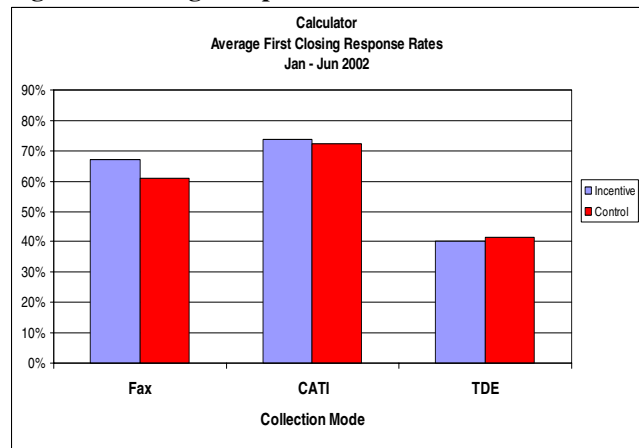
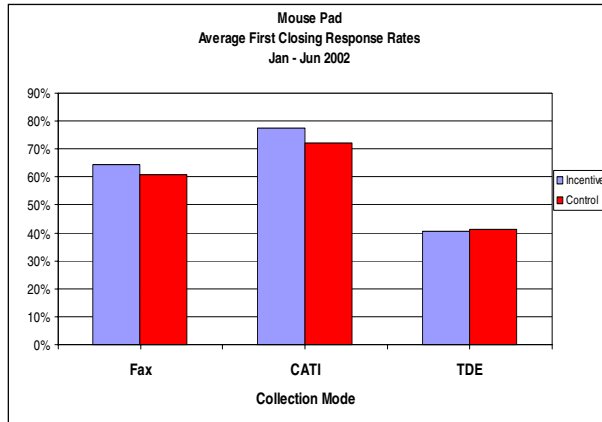


Figure 2 shows the average response rates for the respondents who received the mouse pad. Much the same can be said for these respondents. For this group, no significant differences were observed for all three collection modes.

We also compared refusal rates between the treatment and control groups. Here too there were no significant

differences between the two groups or between the two types of incentives.

Figure 2: Average Response Rates: Mouse Pad



A sample of 10 respondents was contacted immediately after the gifts were mailed out to ensure the gifts were delivered and also to get the respondent's reaction. Of these, five were pleased to have received the gift, two were indifferent and three thought it was a waste of government's resources.

Discussion: A number of studies of incentives have shown that monetary and in some instances non-monetary incentives do increase response rates. So the question must be asked: Why did the incentive appear in this instance to be ineffective?

We believe two factors help explain this. First, most prior studies on the effect of incentives were conducted on household surveys rather than establishment surveys. Thus, the motivational impact of an incentive may be perceived very differently in the business world than when it is received for personal reasons. Many CES respondents report because they believe it is part of their job to provide these types of statistics when requested. Others do not respond because of company policy or because there is no perceived benefit to the firm. Would an incentive alter this paradigm? A large enough incentive might.

Second, the monetary value of the CES incentive was very modest (less than \$3.00), whereas in most other studies the monetary value was generally more substantial, ranging from \$10 to over \$50. Hence, the monetary value may not have been substantial enough to induce the desired response—at least 12 months of continued CES reporting, versus a one-time report for the household surveys. If the seven minute per report for TDE respondent burden is a guide, then perhaps compensating for this would require an incentive of \$30 to \$40 for each respondent.

Enhanced NRP Test

Background: This portion of the paper presents the results of a test designed to increase primary response rates by enhancing the current non-response prompt calls and faxes that are made or sent each month to CES delinquent respondents. Under the enhanced treatment protocol, the interviewers make the normal three calls to initiate contact, and when contact is made would ask for the data from the respondent and enter the data into the CATI system. Normally, the interviewers merely remind the respondents to call the data into the TDE system by our primary deadline, usually the last Friday of the month. The inclusion of FAX units that normally receive a faxed NRP message allowed us to see whether their response rate could be increased by calling delinquent respondents and asking them for their data.

NRP calls and faxes are effective in improving response rates. However, for a number of reasons, the overall effectiveness of NRP has been declining over time. Even when the interviewers speak with the respondents and they say they will report by the primary deadline, they often do not report. Experience shows that only about half the respondents that receive an NRP call actually report by the primary deadline. Two treatment groups were selected during the course of this test. Beginning with December 2002 NRP calls, the first group consisted of a randomly selected sample of NRP call eligible units, regardless of their reporting history. The second group, which began the enhanced NRP protocol in April 2003, was selected from highly delinquent sample units that had not reported for at least three or four of the previous six months. For the purpose of this report, we have kept the analysis of the two groups separate in order to test the impact of the enhancement protocol on their response rates separately.

Benefits: The expectation was that by aggressively trying to collect data from these respondents over the phone, overall response rate could be improved. We also theorized that the average length of call to conduct these interviews would be only marginally longer than the current NRP call, and specifically a lot less than the average case time for a normal CATI call. Currently, the average case time for NRP is about 2 minutes, whereas the average case time for a CATI call is about 8 minutes. Furthermore, we would expect a reduction of the call load factor, perhaps from an average of 44% to 33%. If data collection could be accomplished through this new call protocol in 3 or 4 minutes, and a larger percent of reports collected, response could be effective and efficiently improved with much less interviewer time and expense.

Results: The enhanced NRP call protocol did increase response rate of both groups of reporters. This occurred due to two factors: 1) increase in the number of units providing data during the NRP call (the Took-Data units), and 2) increase in the number of units reporting their data prior to NRP week after the initial attempt to collect the data. For the Took-Data units, the responses increased from an average of 6 units before the treatment to 63 units with the treatment, or by 57 units. For the units that decided to call in their data the average responses increased from 772 to 785, or by 13 units. Together, these 70 respondents increased the response rate from 74% to 80%, or by 6 percentage points. The biggest contributor to this increase was the Took-Data units with 81%. The Called-in units contributed 19%, which is the contribution of the enhanced message protocol. The theory for the extra 19% is that the direct request for data instills in the respondent with a greater desire to accommodate BLS and makes them more likely to actually report after the NRP call has ended.

For the second group of severely delinquent reporters, it is too early to tell whether the enhancement protocol will have a permanent effect on increasing their monthly response rate. Suffice it to note that, while the average of the three month pre-treatment phase response rates for the call units was 25%, for FAX 33% and for the aggregate 25%, they increased in the treatment phase to 38%, 41%, and 38%, respectively. Thus, there was a 13 percentage point increase in response rates.

It is also noted that the percent of units being prompted for the test groups has thus far stayed approximately the same, between 38% and 40%, depending on the length of the collection period.

Methodology: In July 2002 we decided to randomly select, out of a sample population of approximately 107,000 TDE call and FAX eligible units, a small treatment sample of about 1,110 units for the purpose asking them to provide the data during the NRP call, which reminds them to report their data by the primary deadline. Instead of just saying that the respondent had not reported yet and that BLS would appreciate their report by the end of the week, the NRP message was changed to the enhanced protocol by saying that "we have not received your data for the current month and that we would like to take it down now if we could." If the respondents answer they do not have the data ready to give, then the interviewer asks "if it would be convenient to call back on the same day or at some other time during the week to collect the data." Generally, the respondent would offer to call in the data. Thus, respondents have the option to provide or not to provide the data at the time of the NRP call. Previously data was taken from respondents if they offered to do

so, this time we would ask for the data from the respondents of the treatment samples. Five interviewers were selected and trained to implement the protocol, beginning with November's secondary deadline, which is generally three weeks after the primary deadline.

This is not a CATI call in the ordinary sense. The CATI call, because it is an instructional data collection call, is roughly 4 to 6 minutes longer than the enhanced NRP protocol call. There is an agreed day to make the prompt call and to instruct the respondents about how to and what kind of data to provide. But most importantly the CATI respondents are not delinquent reporters; they know they will be called because they do not have the option of calling in their data on TDE. The respondents form a dependency with the CATI interviewer to report their data at the end of each month over a six-month period.

The enhanced NRP call protocol, is shorter and the respondent is asked to provide the data when called, but has the option of agreeing to call it in later in the week. While the response rates for CATI reporters is about 85%, we find that under the pseudo-CATI regimen, the response rates are 81%, a 4 percentage point difference.

Of the originally selected units, 836 were call units and 275 FAX units. We began December 2002 with 1,082 units, after having lost 29 units through attrition such as out-of-business, refusal, or inability to report by the primary deadline. These units were removed from the active file, and the sample size was gradually reduced to 971 units by June 2003, an attrition of 111 units: 727 call and 244 FAX units. The treatment units are referred to as SC for call and SF for FAX, respectively, and together as the First Wave Enhanced units.

It should be noted, for the first two months, December and January, we had some problem with the system designed to identify the units for the enhanced protocol. As a result, only about half of the selected sample units that were delinquent received the enhanced protocol call. We corrected this anomaly and beginning in February 2003 all delinquent treatment units were prompted on their assigned NRP day.

In March 2003 we decided to increase the treatment group by another 500 units, but this time randomly selected from a group of reporters who were severely delinquent: 400 Call NRP and 100 FAX NRP units. Again by the time the experiment began in April 2003 the active sample size was reduced to 482, with a loss of 18 units. By June this group lost another 45 units, and the sample size stood at 350 Call and 87 Fax units. The units in the second group are referred to as NSC for call and NSF for FAX. Collectively they are referred to as the Second Wave Enhanced units.

Analysis: There are two positive contributions to the response rate from the enhanced protocol units. One is the contribution made by the units whose data were taken during the reminder NRP call, the "took data" contribution. The other is the contribution of the enhanced message itself, where it is supposed that it instills in the respondent a heightened awareness to cooperate and make the extra effort to report by the primary deadline. These are the units that called in their data prior to the NRP call or after the NRP call.

Figure 3 shows the movement of the response rates of the First Wave Enhanced units before and since December 2002, and compares these with the movement of the overall regular TDE sample response rates. As can be seen from Figure 3 and Table 3 response rates were about the same for both groups between August and December 02, the pre-test period. In January 03, when the test became effective, response rates began to increase by approximately 7 to 8 percentage points for the Enhanced units, and stayed 8 to 10 percentage points above the overall TDE sample through June 03. The FAX units had consistently higher response rates than the Call units, in both the pre-treatment and treatment phases. In fact, there is a 7 percentage point difference between the pre-treatment and treatment phases for FAX: their average pre-treatment phase response rate (August-December 2002) was 78% and their average treatment phase response rate (January-June 2003) was 85%. The Call units' response rates jumped from 72% to 80% on average over the same time periods, or by 8 percentage points. The average response rate for the Regular units (includes the treatment units) was 73%.

Figure 3

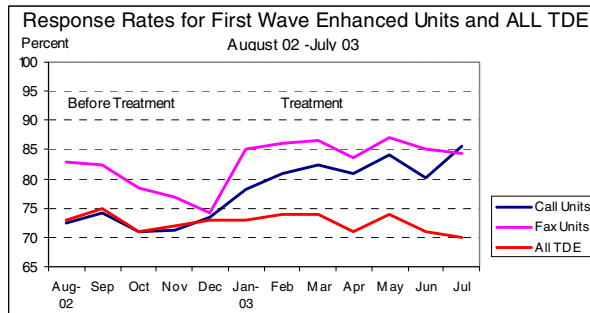


Figure 4 shows the contribution to the response rate (RR) of each NRP protocol by type of response. The protocols are the regular called units (RCU), the first wave call and fax units (FWCU and FWFU), and the second wave call and fax units (SWCU and SWFU). The types of responses are the took-data, the pre-NRP week, and the post-NRP responses. The response rate for each group is the average of the monthly response rates

Table 1. Sample Size of First Wave Enhanced Units

Month	Call units	FAX units	Total	Called in units
Aug-02	764	258	1022	1017
Sep	794	268	1062	1053
Oct	792	268	1060	1052
Nov	800	269	1069	1065
Dec	818	264	1082	1062
Jan-03	813	263	1076	1033
Feb	789	256	1045	981
Mar	764	251	1015	951
Apr	757	248	1005	943
May	734	246	980	928
June	727	244	971	920
Jul	669	237	906	853
Aug	216	108	324	300
Sep	211	108	319	299

Table 2. Reported First Wave Enhanced Units

Month	Call	FAX	Total	Took data	Called in
Aug-02	552	201	753	5	748
Sep	588	221	809	9	800
Oct	562	210	772	8	764
Nov	539	207	776	4	772
Dec	600	196	796	20	776
Jan-03	635	224	859	43	816
Feb	636	221	857	64	793
Mar	630	217	847	64	783
Apr	612	207	819	62	757
May	618	214	832	52	780
June	583	208	791	51	740
July	573	200	773	53	720
Aug	185	83	268	24	244
Sep	162	77	239	20	219

Table 3. Response Rates (%) First Wave Enhanced Units and All TDE

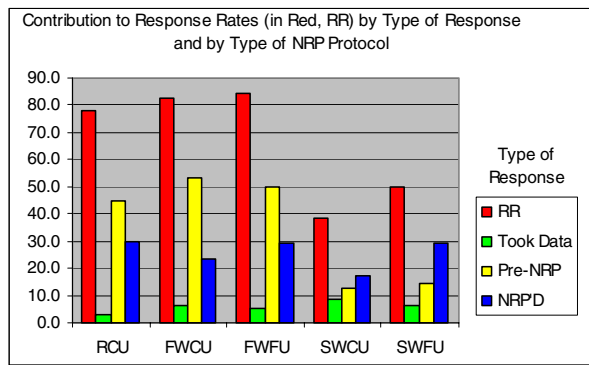
	Call	FAX	Called In	Enhanced	All TDE
Aug-02	72.5	82.9	73.5	73.7	73
Sep	74.1	82.5	76.0	76.2	75
Oct	71.0	78.4	73.0	72.8	71
Nov	71.1	77.0	72.5	72.6	72
Dec	73.4	74.2	73.1	73.6	73
Jan-03	78.1	85.2	79.0	79.8	73
Feb	81.0	86.0	80.8	82.0	74
Mar	82.5	86.5	82.3	83.5	74
Apr	80.9	83.5	80.3	81.5	71
May	84.2	86.9	84.5	84.9	74
June	80.0	85.0	80.4	81.5	71
July	85.7	84.4	84.4	85.3	70

of each group over the relevant time period. The response rate RR for each group is the sum of the response rate of these responses. Thus, $RR = \text{Took-Data} + \text{Pre-NRP week} + \text{Post-NRP response rates}$.

to use the enhanced protocol for all NRP calls and change the mix and timing of some calls to improve response.

As is seen, the overall average response rate for the enhanced protocol first wave units is roughly 7 to 8 percentage point above that of the regular TDE call units. While the took-date units hovered at around the 5 to 8 percent level for all units, the Pre-NRP respondents for FWCU and FWFU is considerably above the regular units, roughly 8 and 6 percentage points. Clearly, the bulk of the overall increase in responses came from the units that decided to report prior to NRP week, approximately 55% for the call units and 50% for the

Figure 4



fax units. This implies a reduction of the NRP workload of approximately 10% or roughly 500 units, on average. Also, the second wave call and fax units showed a jump in their responses from approximately 23 % to 38% and 50% where the bulk of responses came from the respondents who received an NRP call, 17% for call and 29% from fax.

Conclusions: While the gift incentive of very low value test appears to have no significant impact on response, the alternative NRP protocol does significantly improve response. The enhanced NRP protocol improved response by nearly 10 percentage points. Part of the impact is from the units who offered to provide the data requested at the time of the call. However the bulk of the increase came from a further impact in terms of the "perceived importance" or higher awareness of the protocol, that is, from the units who began reporting prior to the NRP-call week after the initiation of the test. There appears to be a maximum of 50% that can be achieved over a 3 to 4 month period. The enhanced protocol also produced a jump in responses from the severely delinquent respondents. Their response rate increased from 23% to 38% for the call units and 50% for the fax units. Here the bulk of the increase came from the NRP call. BLS is currently looking at options