

Exploring Reminder Messages Intended to Increase Interviewer Compliance with Data Collection Protocols



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Abstract

Innovation in data collection processes may decrease costs or improve data quality. However, in face-to-face surveys implementing innovative procedures may call for interviewers to follow new or modified protocols, which they may not consistently implement for a variety of reasons.

This study examines how automated telephone reminder calls relate to interviewers' performance of a task essential to implementing an adaptive experimental survey design. In the Survey of Income and Program Participation (SIPP) 2014 Panel Wave 3 (2016), reminder calls were sent to all interviewers. Based on the results from the 2016 study and a desire to test the reminder calls, in the 2018 Panel Wave 1, automated reminder calls were sent as an experimental treatment.

Our analysis of 2016 calls suggest that calls may be positively related to interviewer compliance, and the calls are inexpensive compared to other forms of training and supervision. In 2018, reminder calls resulted in higher median compliance, and differences were seen in the effect of the calls on compliance with specific behaviors.

Background

Researchers have asked field interviewers to perform modified protocols in many data collections, including the 2013 and 2014 Census Tests (Walejko and Miller 2015, Walejko and Wagner 2015), the National Survey of Family Growth (NSFG) (Wagner et al. 2012), and SIPP (Walejko et al. 2016). Research on the 2013 and 2014 Census Tests and the NSFG found that interviewers were non-compliant with some experimental data collection protocols, including visiting specified households, transmitting data at certain times (Walejko and Wagner 2015), and prioritizing certain cases (Wagner et al. 2012).

These studies examine how automated telephone reminder calls relate to and affect interviewers' performance in transmitting data on a set schedule, a task essential to implementing an adaptive experimental survey design focused on case prioritization. If the transmission schedule was not followed, it would be impossible for interviewers to receive updated information about priorities of their cases, or to send needed paradata to researchers.

Previous studies of systematically contacting face-to-face interviewers to affect behavior are not documented.

Research Questions

- The 2016 study aims to answer three research questions:
- 1) How compliant were interviewers at following this new data transmission protocol?
 - 2) Were reminder calls related to higher compliance?
 - 3) Are reminder calls a cost-effective way to encourage compliant behavior in interviewers?
- The 2018 experiment seeks to determine:
- 1) Do automated calls reminder calls affect transmission compliance?
 - 2) Are there important trends in compliance?
 - 3) Future analysis- How does the effect of reminder calls on compliance vary between new and experienced interviewers?

Methods

A computer system placed automated reminder calls to interviewers. When the phone call was answered by a person or an answering machine, a pre-recorded audio message played. In 2016, calls went to all interviewers. In 2018, calls went to a stratified random sample of 50% of the interviewers.

In 2016, the calls were made at 4:00pm Eastern time on both Wednesdays and Fridays. In 2018, the calls were sent at 4:00pm local time on Wednesdays and 9:00am local time on Friday's.

Since the calls in 2016 were sent to all interviewers, we analyzed the result of the call to observe the relationships between compliance and various call outcomes. The outcomes can be found in Table 1.

Table 1. Call Outcomes

Outcome	Description
Message Received	Message Received by a Person
Answered by Person	Message was delivered to a person
Hung Up Early	Call answered; person hung up before message finished
Message Delivered	Message Delivered to a Phone
OGM Too Long	Outgoing message too long to be delivered in whole
Answered by Machine	Message was delivered to an answering machine
No Message	No Message Delivered
Call Failed	Error detected during call
No Connect	No signal detected after dialing
Busy After Voice	Telephone company busy or off-hook service message
Max No Answers	Line was busy or not answered for max attempts

In both 2016 and 2018, interviewers were instructed to transmit as their last action before Thursdays and as their first action when beginning working after a Thursday.

Accordingly, an interviewer was marked compliant for a Wednesday date if their last action before Wednesday at 11:59 pm was a transmission, even if the action did not occur on Wednesday. An interviewer was marked compliant on a Friday date if their first action after that Friday at 12:00 am was a transmission, even if that action did not occur on that Friday. An Interviewer did not receive a compliance indicator value if he or she did not work at all during that week, e.g. an interviewer was hired halfway through data collection only has compliance indicators for half of the transmission dates.

2016 Results

Averaged across all days, overall transmission compliance was 87%.

Hierarchical logistic regression models were run on compliance, call outcome, and transmission type. Compared to interviewers with a "No Message" outcome, interviewers with "Message Received" and "Message Delivered" outcome were significantly more likely to comply with transmission protocols. Interviewers were significantly less likely to comply with before work transmissions than after work transmissions. The results of the regression are contained in Table 2.

The reminder calls were approximately 8 cents per call.

Table 2. Odds Ratio Estimates

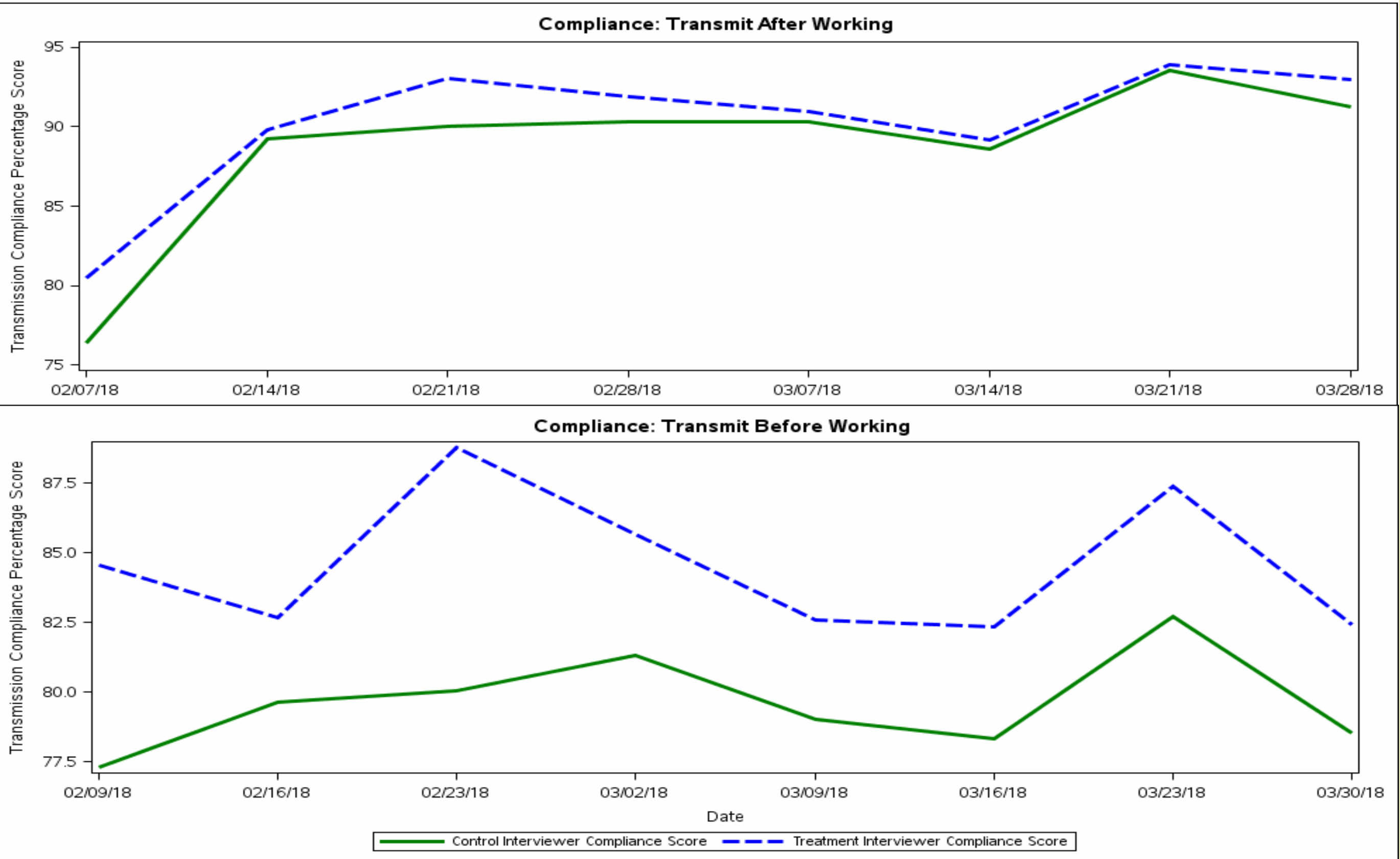
Effect	Odds Ratio Estimate	95% Wald Confidence Limits
Message Received vs. No Message	1.230	1.126 1.344
Message Delivered vs. No Message	1.152	1.139 1.375
Before Work vs. After Work	0.691	0.644 0.743

Preliminary 2018 Results

The overall transmission compliance percentage was calculated for each interviewer. The median compliance percentage for treatment and control interviewers were 94% and 88%, respectively. Because the two distributions of compliance percentage are not normal, a Mood's Median test was used to compare the distributions. The treatment interviewers had significantly higher median compliance($z=-3.993$, $p\text{-value}<0.01$).

Next, we observed compliance by treatment group and day. Figure 1 shows the compliance throughout data collection of both transmission behaviors.

Figure 1. Compliance by Day and Treatment Group



Interviewer compliance with transmitting before working was high for both the treatment and control group. Compliance with transmitting after working showed a much larger treatment effect of the reminder calls. One hypothesis for this difference in treatment effect is that the timing of the reminder calls on Wednesday not optimal.

By comparing the control group's compliance with the two behaviors, we see that without the treatment, the rate of compliant transmissions before working is lower than the rate for after working. The same difference was seen in 2016.

Conclusions

- The 2016 study found:
- 1) Overall transmission compliance was 87%.
 - 2) Interviewers in Message Received or Message Delivered categories were significantly more likely to transmit than those who received no message
 - 3) Reminder calls are very cheap compared to other contact and training strategies.
- The 2018 experiment found:
- 1) Reminder calls resulted in higher median transmission compliance.
 - 2) Automated calls resulted in higher compliance with transmitting before working. They did not significantly affect transmitting after working.
 - 3) Further analysis will be done with 2018 data on compliance variations.