

Field Testing the Collection of New Data Elements in the Occupational Employment Statistics Survey

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ABSTRACT

While there is great demand for detailed occupational information, such as employment and wages by gender, age, tenure, and turnover by occupation, this information has not previously been available from an establishment survey. The Occupational Employment Statistics (OES) survey conducted a test to see if employers were willing and able to report additional demographic information about employees, in addition to occupations and wages, which are already collected by OES. This new information could greatly expand the range of data products offered by OES. To determine if it was possible to uniformly collect extra data items and to assess the impact on regular OES data collection, the Bureau of Labor Statistics designed and conducted a three-wave field test. This paper will describe the field test and discuss the results and feasibility of collecting the new data items.

Key words: Tenure, occupational demographics, labor turnover, establishment survey, payroll records, response rates

1. BACKGROUND

The Bureau of Labor Statistics' (BLS) Occupational Employment Statistics (OES) survey was designed to collect occupational employment data by mail, and was later expanded to collect wage data as well. About half of all establishments still respond by mail using a paper survey form, with an ever-increasing percentage responding by electronic means or by phone, and many respondents expressing a strong preference for electronic reporting. OES wants to take advantage of electronic reporting to collect more data elements than can be solicited on the paper survey forms.

Employer payroll and personnel files contain more information than the employment and wage information currently collected by OES. Some employers submit electronic or hard copy payroll reports produced from payroll processing systems to OES. As these reports are often not tailored for OES, they include other information, such as gender, hire date, Fair Labor Standards Act (FLSA) status, and hours worked. Historically, that extra data has been discarded by OES. However, were OES to solicit this information from more respondents and use it to create estimates, we could expand the range of data products we offer.

To explore the feasibility of collecting additional data elements, a multi-stage research project was conducted:

1. Exploratory interviews with human resources professionals and subject matter experts to learn how companies store personnel records, how easy or hard it is for them to access and submit this information, and to gain insight into company policies regarding this information.
2. Feasibility study asking which extra data elements (identified in exploratory interviews) were available and which the respondent was willing to provide.
3. Three-wave mail field test to test the effectiveness and usability of our survey instrument and to predict the future success of a full-scale survey. Between each wave, results were reviewed and the data collection instrument was revised.

It was expected that respondents to the field test would be unwilling or unable to provide data for some elements requested, and that based on that BLS would refine the solicitation materials and request fewer fields in each subsequent wave. By the end of Wave 3, we expected to have identified the data elements most common to all respondents which could be used for a later full-scale field test in the regular OES data collection.

2. EXPLORATORY INTERVIEWS

It was unknown which data elements were readily available in respondent records, and we did not know if they were available in a standard format or what terminology best described the extra data elements. Exploratory interviews with OES respondents and subject matter experts were needed to narrow down this list.

Nine interviewees were selected, based on the number of employees, industry, and location. Using a semi-structured interview guide, three in-person interviews and four telephone interviews were conducted in February 2014. Respondents were human resources and payroll subject matter experts.

For the exploratory interviews, respondents were asked about a range of extra data elements, including:

- Job title
- Job description
- Department
- Wage rate
- Hours worked
- Full-time equivalents (FTE)
- Gender
- Skills required
- Hire date
- Union status
- Race/ethnicity
- Birthdate or age
- Pay period (biweekly, monthly etc.)
- Supervisory status
- Location
- Experience level
- Degrees and certifications.

The interviews were immensely useful in clarifying what data establishments had in their personnel and payroll records, as well as revealing which data elements establishments

might be hesitant to report. The interviewees also suggested additional data elements to consider, such as disability status and total compensation.

Many of the human resources professionals interviewed expressed interest in OES data by experience level. Unfortunately, the interviews revealed that there is no standard method establishments use to track experience, degrees, and certifications, and that some establishments do not track this information. Even if OES were able to collect this information, it is unlikely that any statistically sound estimates could be developed. Based on these interviews seven elements were taken off the list: full-time equivalents, skills required, union status, pay period, location, experience level, and degrees and certifications. The researchers felt that department wasn't as important to the other elements so it was dropped as well. Three elements were changed: "supervisory status" became "FLSA exemption status," "hours worked" became "hours paid," and "wage rate" became "wages." Three elements were added: hourly or salaried status, part-time or full-time status, and permanent or temporary status.

3. FEASIBILITY STUDY

3.1 Feasibility Study Methods

The feasibility study sampled 252 respondents to the OES May 2013 panel across all states, establishment sizes, and industry. Some large establishments, and those included in other research efforts, were excluded to reduce their burden and the potential impact of the research on production data collection efforts. Previous OES respondents were sampled for the feasibility study because it was theorized that their familiarity with the OES program would make them more inclined to respond.

The sample members were sent a form asking which of the following data elements the sample members had in their records, and which they would be willing to provide to OES.

- Job title
- Job description
- Wages
- Part-time or full-time status
- Hourly or salaried status
- Permanent or temporary status
- FLSA exemption status
- Hours paid
- Hire date
- Gender
- Birth year or birthdate
- Race and/or ethnicity

They were also asked for additional information related to their reporting process:

- Why they were unwilling to provide certain elements
- Which department was best to contact for this information
- How much time they thought it would take to submit the information
- Preferred submission method

- Which business software or service they used for their payroll and/or human resources records

BLS conducted two mailings for the feasibility study. For both, the sampled respondents were sent a letter, an OES fact sheet, the feasibility questionnaire, and a postage-paid business-reply envelope to return the survey. Nonresponse telephone calls were made, and some respondents were called for clarification.

3.2 Feasibility Study Results

The final response rate for the feasibility study after the two mailings was 55.6% (140 responses out of 252 contacts, with ten refusals).

Table 1 shows the responses broken down by how many establishments record each element, how many of those who record an element are willing to provide it, and how many record and would provide each element out of the total number of responses. This is an important distinction to make – while it appears promising that 62.7% of respondents who record race and/or ethnicity would provide it, only 37.1% of all respondents record and would provide that element.

Table 1: Feasibility Study Item Response

Data element	% that record	% that would provide, of those that record	% that record and would provide, out of all responses
Job title	94.3%	80.3%	75.7%
Job description	83.6%	69.2%	57.9%
Wages	97.1%	64.7%	62.9%
Part-time/full-time	94.3%	71.2%	67.1%
Hourly/salaried	95.0%	75.2%	71.4%
Permanent/temporary	79.3%	76.6%	60.7%
FLSA status	63.6%	77.5%	49.3%
Hours paid	90.7%	65.4%	59.3%
Hire date	94.3%	69.7%	65.7%
Gender	81.4%	73.7%	60.0%
Birth year/date	90.0%	54.0%	48.6%
Race/ethnicity	59.3%	62.7%	37.1%

Something interesting to note: while 97.1% of the respondents record wages, only 62.9% said they would provide wages to OES, despite the fact that the entire sample had already provided data to OES. Currently, OES successfully collects wage data, and the current overall response rate for establishments is 78%. It may be that respondents say things they do not always mean or perhaps the OES data collectors are very persuasive.

In addition to finding out which data elements respondents recorded and which they would be willing to provide, OES wanted to find out why respondents would not provide certain elements. Table 2 shows the responses to this question (respondents were allowed to choose as many answers as applied). The most prevalent reason a respondent would not

provide data was concerns about privacy and confidentiality, reported by 37.9% of respondents. Concerns about the amount of time and effort required were the next most frequent responses, at 27.1% and 25.7%, respectively.

Table 2: Feasibility Study Refusal Reasons

Why unwilling to provide?	# of responses	% of respondents
Privacy/confidentiality concerns	53	37.9%
Would take too much time	38	27.1%
Would require too much effort	36	25.7%
Company policy not to respond	17	12.1%
N/A - would provide everything	45	32.1%

3.3 Feasibility Study Conclusions

The feasibility study revealed that not all respondents would be able to provide all of the data elements. During telephone follow-up our data collectors were able to speak with respondents about the particular elements. These discussion revealed that the permanent/temporary category confused several respondents that were not familiar with the concept of temporary workers. Also, since many respondents do not use temporary workers, they do not track this status in their records. Several respondents reported that they were not willing to report a job description. Respondents also reported that not only do they not track FLSA status, but many of them did not know what the FLSA is. Race and ethnicity is seen as a very sensitive issue, and a substantial number of respondents reported being reluctant to report it. An additional complication to collecting race and ethnicity is that many of the respondents who did collect it did so anonymously, and that information was not tied to employee occupation records.

Based on the responses and what OES is most interested in, job description, hourly or salaried status, permanent or temporary status, FLSA exemption status, and race and ethnicity were eliminated from the list of elements for the field test. There was interest in collecting race and ethnicity, but it was determined to be too difficult to collect, and asking sample members to report it could cause them to refuse to respond entirely. The data elements that moved on to the field test were:

- Job title
- Wage rate
- Hours paid
- Part-time or full-time status
- Hire date
- Gender
- Birth year or birthdate

4. FIELD TEST

4.1 Field Test Instrument Development

In the feasibility survey respondents reported that they were concerned that reporting their data would take too much time or be too difficult. With that in mind we decided we needed to keep the form for the field test as simple as possible.

We started with the current OES write-in form for smaller establishments, which is four pages long and is mailed with a solicitation letter and fact sheet. First, we edited the form to collect point data (instead of the wage ranges used in regular OES collection) and then added fields for the extra elements. Next, we modified the instructions and created a list of frequently asked questions (FAQ) to address questions respondents might have about OES, the data, and the research project. Finally, we examined current OES solicitation letters to find the most effective wording and instructions. We chose to incorporate the letter and FAQ into the form design so that the entire solicitation package would be on one 11 x 17" sheet of paper folded into an 8.5 x 11" four-page booklet. Using a booklet allowed us to optimally place respondent-specific information on multiple pages without risking confidentiality by having to track individual pieces of papers.

The booklet had lines to report all data elements for sixteen employees, so we developed a second treatment for larger establishments. Larger firms are more likely to have electronic personnel and payroll processing systems, and accessing an electronic report was expected to be easier for these units, so our second treatment was a letter requesting an electronic submission. In the end we had two instruments: the four-page form for smaller units and a letter for larger units with more than 50 employees. Respondents with more than 16 employees had the option of submitting electronically, or photocopying the page with the data grid.

4.2 Field Test Wave 1

Wave 1 of the field test sampled 125 respondents to the OES May 2013 panel across all states, establishment sizes, and industries. As in the feasibility study, we supposed that previous OES respondents would be more likely to respond because of their familiarity with OES. Some large establishments, and those included in other research efforts, were excluded to reduce their burden and the potential impact of the research on production data collection efforts.

Wave 1 sample members were asked to provide seven data elements for each of their employees during the pay period that included May 12, 2014. Two different treatments were used, based on the establishment size class. Establishments with fewer than 50 employees were sent the booklet including a form they could fill out and return and a postage-paid business-reply envelope, while establishments with 50 or more employees were sent a letter and fact sheet, and asked to respond electronically. The same language was used for both treatments, and included information on how to reply by email, fax, phone, and mail, as well as online. No due date was listed.

Nonresponse telephone calls began six weeks after the initial Wave 1 mailing, and it quickly became clear that the requested information was impossible to collect by phone for all but the very smallest establishments. Therefore, nonresponse calls served to prompt sample members to submit their responses, rather than function as a means of data collection like they do in the regular OES survey. Wave 1 was closed after twelve weeks, with a final response rate of 51.2% (64 responses out of 125 contacts, with 13 refusals).

Table 3 summarizes the Wave 1 responses. We expected that most of those who responded would provide some but not all of the data elements; instead, we discovered that if an establishment responded, they provided everything we had asked for. Out of 64 responses, only six provided partial data, and no one element was consistently omitted.

Table 3: Response Method and Rates by Treatment, Wave 1 (n=125)

Mode received	Response Rates by Treatment		
	Booklet form	Letter asking for file	Both treatments
Non-electronic	83.3%	17.5%	42.2%
Electronic	16.7%	82.5%	57.8%
Response rate	48.0%	53.3%	51.2%

For the group that received the booklet, 83.3% of the responses came in via non-electronic means (form, phone, or fax), while 16.7% came in via electronic means (email or file upload). For the group that received a letter asking for an electronic file, 17.5% still chose to submit via non-electronic means. The split treatment was determined to be successful, with similar response rates for both the booklet (48%) and the letter (53.3%), as seen in the last row of Table 3. The overall response rate was 51.2%.

Table 4 shows the unit response rates grouped by the size of the establishments, with size measured by the number of employees in the establishment. We look at the differences

based on the size of the establishment because in past OES research we have seen this as a factor affecting respondent behavior and response rates.

Table 4: Unit Response Rates by Size Class, Wave 1

Establishment Size (# of employees)	Response rate
Size classes 1 – 3 (emp <20) (n=32)	46.9%
Size classes 4 – 6 (emp 20-249) (n=62)	56.5%
Size classes 7+ (emp >249) (n=31)	45.2%
Total (n=125)	51.2%

Based on the Wave 1 response, since no element was consistently omitted, it was decided there would be no changes to the survey instruments for Wave 2. The split treatment would be used, and the same seven data elements would be requested.

4.3 Field Test Wave 2

Wave 2 differed from Wave 1 in that the sample members were 132 new contacts who had not reported to OES in the last three years.

The Wave 2 mailings began the same as Wave 1, with the initial mailing being sent out in July 2015, followed by an additional mailing to non-respondents five weeks later. Nonresponse phone calls began seven weeks after the initial Wave 2 mailing. A second follow up mailing was sent on week 9, and a third follow up mailing was sent on week 12. These mailings still used the split treatment, and emphasized that we would accept partial data.

Unfortunately, the response rate to Wave 2 was lower than Wave 1, 38.6% (Table 5). It is unclear if this is due to the sample consisting of new contacts, sample members not wanting to provide all of the data elements and therefore not responding at all, or the fact that the mailings were going out in July and August, and people were on vacation.

The different treatments yielded similar results to Wave 1 where the units receiving a form responded via the form and the units receiving a letter responded electronically. The response rates for the two treatments were similar to each other. The overall response rate for this wave was 38.6% (51 responses out of 132 contacts, with 24 refusals).

Table 5: Response Method and Rates by Treatment, Wave 2 (n=132)

Response type	Treatment		
	Booklet form	Letter asking for file	Both treatments
Non-electronic	82.6%	7.1%	41.2%
Electronic	17.4%	92.9%	58.8%
Response rate	41.1%	36.8%	38.6%

Response rates were highest for the largest establishments. This is not surprising since the largest units usually have payroll processing software and personnel dedicated to running it and familiar with responding to government inquiries.

Table 6: Unit Response Rates by Size Class, Wave 2

Firm Size (# of employees)	Response rate
Size classes 1 – 3 (emp <20) (n=36)	36.1%
Size classes 4 – 6 (emp 20-249) (n=66)	31.8%
Size classes 7+ (emp >249) (n=30)	56.7%
Total (n=132)	38.6%

4.4 Field Test Wave 3

The Wave 3 sample consisted of 118 new contacts. Because there was very little item non-response observed in Wave 2, we made no changes to the survey instruments, other than changing the reference date to October 12, 2014.

The Wave 3 mailings were carried out similarly as Waves 1 and 2, with the initial mailing being sent out in October 2014, followed by an additional mailing to non-respondents five weeks later. Again, nonresponse phone calls began seven weeks after the initial mailing. A second follow up mailing was sent on week 9, and a third follow up mailing was sent on week 12. These mailings use the same treatment methodology with larger units getting a letter requesting an electronic file and smaller units receiving a form booklet.

The overall response rate for Wave was 38.1% (45 responses out of 118 contacts, with 12 refusals). This response rate is about the same as for Wave 2, both around 38%. However, in Wave 3 the response rate for the booklet treatment did slightly better while the response rate for the letter treatment dropped a bit.

Table 7: Response Method and Rates by Treatment, Wave 3 (n=118)

Response type	Treatment		
	Booklet form	Letter asking for file	Both treatments
Non-electronic	70.0%	20.0%	42.2%
Electronic	30.0%	80.0%	57.8%
Response rate	44.4%	34.3%	38.1%

The response rates stratified by establishment size showed a similar distribution as Wave 2 with the largest establishments having the highest response rates.

Table 8: Unit Response Rates by Size Class, Wave 3

Firm Size (# of employees)	Response Rate
Size classes 1 – 3 (emp <20) (n=24)	45.8%
Size classes 4 – 6 (emp 20-249) (n=66)	30.3%
Size classes 7+ (emp >249) (n=28)	50.0%
Total (n=118)	38.1%

4.5 Overall Field Test Results

The response rates were consistent throughout all waves of the field test. Both the letter treatment and the booklet treatment yielded similar response rates. Response rates were higher for the largest employers.

Table 9: Response Method and Rates by Treatment, All Waves Combined (n=375)

Response type	Treatment		
	Booklet form	Letter asking for file	Both treatments
Non-electronic	79.1%	15.1%	41.9%
Electronic	20.9%	84.9%	58.1%
Response rate	44.4%	41.5%	42.7%

Table 10: Unit Response Rates by Size Class, All Waves Combined

Firm Size (# of employees)	Response Rate
Size classes 1 – 3 (emp <20) (n=92)	42.4%
Size classes 4 – 6 (emp 20-249) (n=194)	39.2%
Size classes 7+ (emp >249) (n=89)	50.6%
Total (n=375)	42.7%

Response rates throughout the data collection period were similar to regular OES rates for the same time period. In Figure 2, the weekly response rates are tracked for each wave including a summary line showing the combined response rates for all waves. In addition, there are markers that show regular OES response rates in 4-week increments; these black dots represent regular OES rates for responses received but not necessarily finalized.

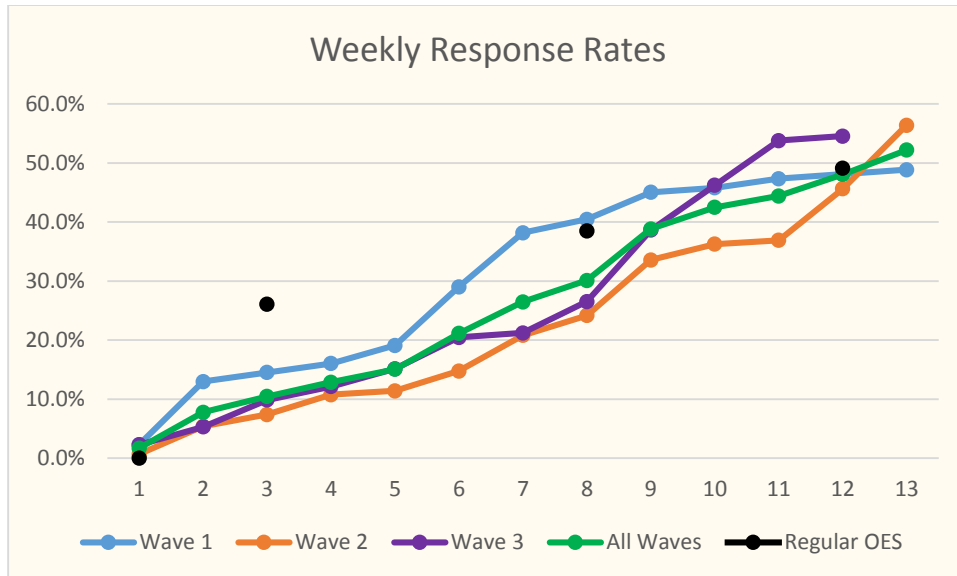


Figure 2: Weekly response rates for the field tests along with regular OES response rates.

The two most important elements for OES are job titles and wages rates, both of which are currently collected in OES. Both of these were successfully collected in all waves of the field test. The success of collecting the extra data elements varied considerably by element, ranging from 100% for job title to 86.7% for hours paid. Overall, a majority of establishments reported all or almost all of the extra data elements.

There were some differences by establishment size; smaller establishments had some difficulty reporting hours paid, hire date, and birth year. Our data collectors reported that the smaller establishments often reported data from memory and that these three elements required the respondent to go into their personnel files to retrieve the information.

Response for the mid-sized establishments was fairly consistent but some omitted hours paid. Some larger establishments also omitted hours paid. The omission of hours paid could be the result of using personnel records instead of payroll records which is where hours paid is more likely to be found. Some respondents did report that they needed to run two different reports and merge them together in order to report all of the requested elements.

TABLE 11: ITEM NONRESPONSE BY ESTABLISHMENT SIZE CLASS, ALL WAVES COMBINED

Firm Size (# of employees)	Job title	Wage rate	Hours paid	Part- vs. full-time	Hire date	Gender	Birth year
Size classes 1–3 (emp <20)	0.0%	2.6%	10.3%	7.7%	12.8%	5.1%	12.8%
Size classes 4–6 (emp 20-249)	0.0%	2.6%	7.9%	5.3%	1.3%	4.0%	2.6%
Size classes 7+ (emp >249)	0.0%	2.2%	13.3%	4.4%	2.2%	6.7%	6.7%
Total	0.0%	2.6%	11.1%	6.0%	4.6%	5.3%	6.7%

When possible our data collectors tried to obtain a reason when establishments refused participation in the survey. The refusal reasons are in the table below. The refusal rate is higher than in regular OES collection but the overall non-response rate is not. The higher refusal rate could be the result of the diligence of the data collectors in obtaining a reason for the establishment not wanting to respond. If not for the persistence of the data collectors, many of these refusals would have been just a generic non-respondent.

The reasons for the refusals are very similar to the reason given for refusals in regular OES. They fall into two categories: policy and perception. Many firms have company policies that prevent them from responding, or they only respond if there is legislation in place to make their response mandatory. The other issue is perception. Some non-respondents think that the request for data will take up too much of their time or require too much effort. Some lack the skills or computer knowledge to extract the information from their payroll or personnel systems. Too much time or too much effort as their reason for refusing was reported most frequently by mid-sized establishments. This is not too surprising; it is seen in regular OES collection as well. The mid-sized establishments are too big to report from memory and too small to have dedicated resources for running the payroll software.

Table 12: Refusal Reasons, All Waves Combined

Refusal type	Both treatments
No reason given	6.1%
Company policy not to respond	6.1%
Too much time required	24.5%
Too much effort required	18.4%
Requires corporate approval	6.1%
Only respond if mandatory	20.4%
Refusal, other	6.1%
Refusal for now, would answer in future	12.2%
Overall Refusal Rate	13.1%

5. CONCLUSIONS FROM DATA COLLECTORS

BLS contracted with the State of Maine to solicit, collect, and process the extra elements data. These analysts already collect regular OES data and their expertise in contacting establishments and collecting occupational and wage data is well established. At the conclusion of the study BLS asked them their thoughts on the study and about moving forward with collecting extra data elements.

Regarding difficulties encountered during collection, the analysts identified telephone collection as being particularly challenging. Unlike regular OES data collection, telephone collection of extra data elements is virtually impossible. In regular OES collection most respondents, particularly in small establishments, are able to list job titles, employment, and wage within OES wage ranges. Data collectors were concerned that collecting the additional information, particularly hire date, birth year, or hours paid, would be difficult

to do by phone since the respondent may have to access multiple files to obtain the information and because it would make for a long phone call and time commitment that many respondents may not be willing to make.

Another difficulty in obtaining the extra data elements is that unlike regular OES where a local establishment contact can likely provide staffing and wage information for that site, when requesting additional information we were often referred to a different contact at a regional or corporate headquarters. Further, obtaining the correct contact name and address was very challenging. A notification letter would have been useful to identify the appropriate contact first. Data collectors observed that obtaining sensitive information such as age is also more difficult to obtain than staffing and wage information.

Convincing respondents to participate was also difficult at times. One analyst noted that it seemed to be easier for companies that had automated their payroll (using payroll processing software or a payroll service). If they were a mid-size business (30-80 employees), they may not be automated, and it was more of a burden to submit the requested data. The lead analysts reported that, “Based on overall response I would say this collection effort is a difficult sell. Most follow-up communication consisted of leaving a voice-mail message and hopefully getting a call back. In most instances once contact was made the potential respondent indicated interest in the project but that did not follow through to an actual response.”

Of the establishments that did respond, most provided all data elements. Wages and occupation are already collected by OES, and can be done easily over the phone for smaller firms with less than 15 employees.

Perhaps the most difficult collection item was hours paid, either due to limitations of the payroll reporting software or the nature of the job. Thirteen percent of respondents omitted this item. One manufacturer stated that they would have to run two reports and merge them to report hours paid. Hire date and birthdates are also difficult, because they are specific to each employee and usually have to be looked up rather than reported from memory.

6. CONCLUSIONS

From the perspective of ability to obtain the data and level of effort (difficulty) required, we are able to state that it is possible to collect extra data elements, but the follow-up required might be extensive. As expected, response from Wave 1 was better than response to subsequent waves, likely due to the respondents’ familiarity with OES. Waves 2 and 3 were essentially the same (not recent OES respondents) and the difficulties experienced across the two waves were similar.

Response might be improved with extensive address refinement and/or sending a notification letter and verifying contact names. In terms of difficulty, in regular OES we often mail the forms to a local establishment or to the attention of a payroll clerk or human resources assistant whom we’ve dealt with before. These contacts are not likely to be in a position to provide the extra data elements we are requesting without prior approval of a higher authority. During address refinement it would be prudent in cultivating this “higher-level” contact by speaking with them prior to data collection and mailout so we

can market the survey. The data collectors believe that if we have the support of a company's managers we will have a better chance of success.

7. FUTURE WORK AND RECOMMENDATIONS

OES was able to collect five extra data elements in addition to the regular occupational wages and employment. Feedback from our data collectors indicated that the extra elements were collected in all waves of the field test but a couple required extra effort on the part of respondents to report. Further, response rates were very similar to regular OES response rates for the same time period.

The next step is to conduct a larger field test using a split-panel methodology. This will allow for comparisons between collecting regular OES data and collecting the extra data elements over the same time period. We also need to explore the impact and burden of collecting extra data from mid-sized establishments since they reported the most perceived complexity and effort needed to report data. It would also be beneficial to explore small-scale options for collecting extra data such as short-term supplements to OES.

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