

Measuring the Actual and Perceived Response Burden of Economic Surveys Which Were Implemented by PCBS in 2013

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Abstract:

The Response burden has become one of the important issues in the official statistics, it is known that the response and giving data by interviewing the respondents takes time of businesses, which can be expressed in actual cost. According to methodology of the interview in Palestinian Central Bureau of Statistics (PCBS), the face-to-face interview of respondent is implemented during daytime (formal hours of work) in the enterprise, Which may lead sometimes to non-response or reduction in data quality. PCBS measured the response burden for the Economic surveys (enterprise surveys) in 2013 through adding a short questionnaire to the main questionnaire of the Economic surveys, it contains a group of indicators measuring the actual and perceived burden. Depending on the results of response burden data, there are recommendations and suggestions to reduce the actual and perceived burden in addition to improving the data collection process.

Keywords: Response burden, enterprise surveys, non-response.

1. Introduction

National Statistical Institutions (NSIs) in recent years are interested in getting data about response burden of the surveys, such as the actual time of data collection, perceptions and satisfaction of the respondents. because these indicators are helpful to improve and develop the administrative sides in the surveys management. They also can help in evaluation some of the quality dimensions in different stages of survey implementation.

There is an assumption of a negative correlation between burden and data quality, and there is expectation that the high burden may lead to non-response through rejection in the surveys. *“The relationship between actual respondent burden (measured in terms of length of the interview) is less clear; perhaps, because refusals often come before the potential respondent*

knows the length of the survey“ (DeMaio, 1980). *“One of the challenges now being faced in survey design stems from conflicting pressures related to response rate and respondent burden“* (Dillman,2006)

The burden is not only the actual needed time of interviewing (or total response time), which is very important to obtain quantitative indicators of the burden, but also there is qualitative part of this burden coming from the difficulty and sensitivity of the questions, In addition to the Stress of disturbing through interviewing . *“perceived burden can be much different from actual burden, and actual burden can depend on how hard a respondent is willing to work at the survey task“*.(Tucker 2007)

The quality of the survey data also affected by the perceived burden. *“Difficult and burdensome questions may also demotivate the respondent so that he or she is less willing to make a serious effort to correctly answer the questions“* (Krosnick 1991).

Reducing response burden may enhance significantly the data quality and may reduce non-response in the surveys, to do that, many procedures can be made during all stages of the surveys, starting from the sample design. *“Techniques such as stratification can reduce respondent burden because a smaller sample suffices to give the required precision”*. (Lohr,2009)

Measuring the response burden can be applied to all types of surveys, but there is a focus on the business surveys, this due to the importance of the cost that can be estimated in the data collection process for the respondents in the enterprises.

This paper illustrates how PCBS measured response burden in the economic surveys 2013, and shows the main findings for this practice, depending on that, there are some conclusions to reduce the burden and to improve the data collection process.

2. Response Burden in Palestine:

2.1 Background

PCBS implements many sample surveys in Palestine, the average number of surveys is about 20 surveys (households and enterprises), in addition to the general population and agricultural censuses which are conducted every 10 years, whereas the establishments censuses every 5 years. There are several basic business surveys are implemented periodically (Economic surveys – Annually, Prices survey-monthly, Industry price index survey-quarterly, Finance and insurance survey-annually, Foreign investment survey-annually, Olive presses survey-annually). PCBS reaches more than 20,000 establishments per year during data collection of the surveys. which produces a high burden to the respondents.

2.2 Overlapping between surveys in PCBS:

In sampling design, a random sample of establishments is selected, so, there is a probability of overlapping between units in surveys, this means that the interviewers in the field visit the same establishment more than one time in short period, the overlapping increases the burden which is expressed through complaint from respondents. The following information illustrates the overlapping between some of the surveys:

1. There is 100% overlapping among all large establishments in surveys. (i.e. the large establishments have probability 1 to be in all the establishments samples).
2. About 20% overlapping between each two establishments surveys in the middle and small establishments.

2.3 Methods of data collection in PCBS:

1. The main method of data collection in all surveys and censuses is by personal visits and face to face interviews.
2. Paper questionnaires is used in most of the households and business surveys, whereas PC-Tablets (CAPI) is used recently in small number of surveys.

2.4 Response Burden in economic surveys 2013:

The economic surveys are the main surveys of enterprises in Palestine, they have been implemented annually since 1996, these surveys covering all the economic sectors except the agricultural sector, and they are the main source of economic indicators (output, intermediate consumption, compensations ,the value added ..etc).

In general, response to these surveys is relatively good, it is more than 80% of the total sample size which is around 10,000 enterprises annually.

In 2013, the response burden questionnaire is attached to all the responded enterprises of the economic surveys 2013, the field interviewers filled the paper questionnaires through direct interviewing of the respondents. There was part of the sample (about 34.0%) responded to the extra supplementary survey (the economic environment survey) in addition to the main economic surveys. So, this supplementary increased the time of interviewing for them.

2.5 Questionnaire of the response burden:

A very short questionnaire had been attached to the main questionnaire of the economic survey, it contains 16 questions covering a quantitative and qualitative indicators of the response burden. The questions of the questionnaires can be classified to the following components:

a. Actual response burden :

- Total time to complete the survey questionnaire (from all persons who participating in the response) .
- Total number of persons participating in providing the data.
- Total number of visits to the same enterprise in one year by PCBS

b. perceived response burden:.

- Difficulty of the questions and Reasons of the difficulty
- Availability of time to respond to the questionnaire

c. Motivation and Satisfaction:

- Usefulness of statistics to the enterprise and to the society.
- Assessment of spent time of interviewing.

d. Enhancement of data collection process

- Best method for data collection from enterprise's respondent view
- Best time in the day for data collection from enterprise's respondent view
- Best period (month) for data collection from enterprise's respondent view

3. Estimation and analysis Method

Estimation of actual response burden was done using descriptive statistics by finding the mean, minimum, maximum, mode and percentiles. Whereas estimation of perceived response burden was done using frequencies , percents and crosstabs. Graphs was used to show some comparative results.

4. Main Findings:

4.1 Actual response burden:

The main indicator of the actual burden is the average response time which equals 81.2 minutes (*Table 1*), The sum of response time to the main survey including supplementary survey is 700,918.4 minutes ($\approx 11,682$ hours), if the working day equals 7 hours (as official working day) ,this means that there are around 1,669 working days. And this number can be multiplied by the average cost of working day to get the total cost of response from all the respondents. In the following table there are the main descriptive statistics of the actual burden of the economic surveys 2013.

Table 1: Descriptive statistics of the total response time to fill the economic surveys questionnaire (including supplementary for 34% of the sample)

| Total Response Time (in minutes) | | |
|----------------------------------|-----|-------|
| Mean | | 81.2 |
| Median | | 70.0 |
| Mode | | 60.0 |
| Minimum | | 10.0 |
| Maximum | | 360.0 |
| Percentiles | 20 | 45.0 |
| | 40 | 60.0 |
| | 60 | 90.0 |
| | 80 | 120.0 |
| | 100 | 360.0 |

From table(1), the minimum time is 10 minutes and the maximum time is 360 minutes, this is very big range of response time, 40% of the enterprises needs 1 hour or less. Many variables affected the total response time such as: the enterprise size, source of data (estimation or from the accounting registers of the enterprise) and in our case in the survey 2013 whether there is supplementary survey or not. In (Table 2), the effect of these variables is more clear, 13.4 minutes in average is the increasing in time when the survey has supplementary, about half hour in average is the increasing in time between the small and the large enterprises. when the respondents use only the accounting registers ,the time increases by 22.6 minutes in average , i.e. about 28% increasing in time when the enterprise uses the registers to provide data comparing to estimation the data depending on the memory.

Table 2: Mean and Median of the total response time according to different variables:

| 1. With or Without Supplementary | Mean | Median |
|---|-------------|---------------|
| With supplementary | 90.6 | 80 |
| Without supplementary | 76 | 60 |
| Total | 81.2 | 70 |
| 2. Enterprise size | Mean | Median |
| 1--4 employees (small) | 70.6 | 60 |
| 5--9 employees (medium) | 87.2 | 80 |
| 10 employees and more (large) | 100.8 | 90 |
| Total | 81.2 | 70 |
| 3. Source of data | Mean | Median |
| Accounting registers | 99.2 | 90 |
| Estimated data | 76.6 | 60 |
| Both sources | 92.3 | 90 |
| Total | 81.2 | 70 |

In most of the enterprises in the sample, one person is enough to provide data, but there was need for more than one person in (14.0%) of the enterprises to get data. (Figure 1)

Another indicator of the actual burden is the total number of visits by PCBS to the same enterprises in short period, results shows that (29.3%) of the enterprises were visited more than once in one year, (8.7%) of them were visited three times and more ,and that increased the burden on these enterprises. (Figure 2)

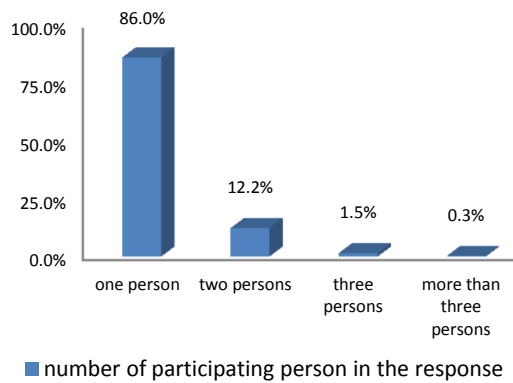


Figure 1

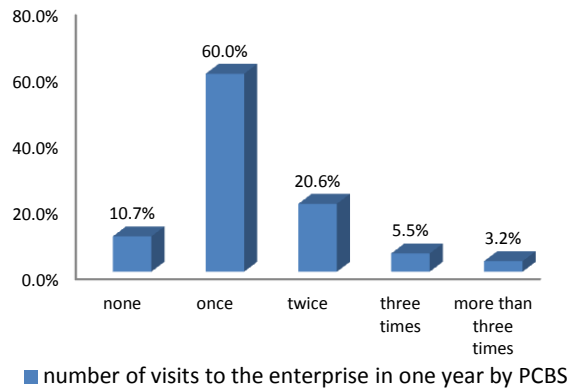


Figure 2

4.1 Perceived burden results:

The results shows that most of the questionnaires (96.9%) had been filled through working period, and only (3.1%) of the questionnaires had been completed out of the working period. Difficulty of the questions is very important indicator to measure the perceived burden, and it affects the data quality, because when the respondents don't understand the questions well, they will give a wrong answers or inaccurate values.

Sometimes, the difficulty of questions coming from the complex wording of the questions, or using unfamiliar terms. So, there is a big role of the interviewer to elaborate the questions to be simple and understood. In our case, (16.9%) of the respondents considered the questions are difficult or very difficult, while the majority of them (83.1%) evaluated the questions are easy and very easy. (Figure 3).

I think the asking in the questionnaire about difficulty of the questions is indirect method to evaluate the perceived burden, and when comparing the results of difficulty by the results of direct question about the perceived burden, which is "was the responding to the questionnaire burdensome on your enterprise?" , there were only 12.2% of all respondents felt high burden

or some burden, (Figure 4). In other words, not all respondents who found difficulty in the questions feeling burdensome.

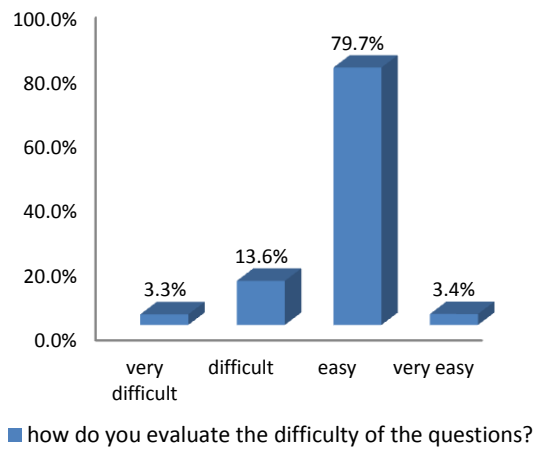


Figure 3

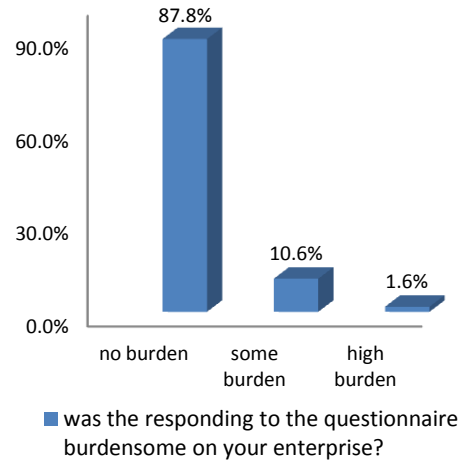


Figure 4

When the respondents answered there is some or high burden, they were requested to determine what the reasons for feeling burdensome, the results raised three main reasons, which are expressed sometimes by length of the questionnaire, gathering data from accounting registers (especially when the respondents are very busy) and the unavailability of data at the period of data collection. (Figure 5)

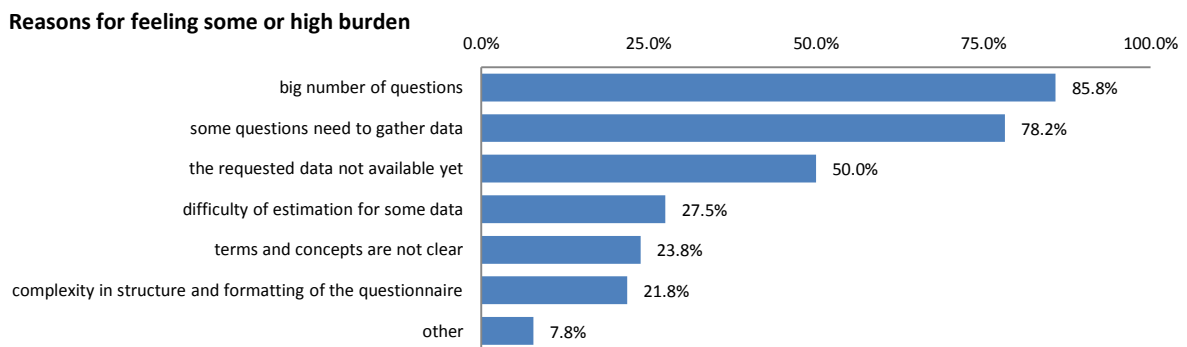


Figure 5

Most of the respondents (88.2%) participated at least once in previous period in giving data to PCBS surveys. this will make the task of the interviewer easier, because these people have a background about work of PCBS, while (11.8%) from the respondents were responding for the first time to PCBS surveys. (Figure 6). Majority of the respondents had the time to respond, it is considered a positive result, only (2.3%) of the sample didn't have time to provide data but finally they responded, (Figure 7).

Did you participate in response to PCBS surveys in the previous period?

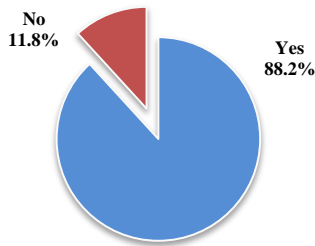


Figure 6

Did you have the time to respond and answering the questions?

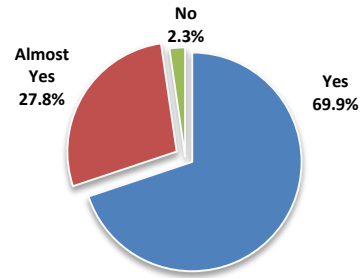


Figure 7

4.4 Motivation and Satisfaction:

There are indirect questions about the respondents satisfaction, the questions are: whether the data obtained from respondents is useful to the enterprise or not, and whether it is useful to the society or not, these two indicators show the level of motivation and satisfaction to provide the data and give time to statistics. In general, most of the respondents considered giving data will be useful to the enterprises and to the society. (Figure 8). It was found about 10% of the respondents answered they don't know, those people may don't care or they are implicitly unsatisfied. However, the respondents who considered the data not useful to the society are 6.2%, it is expected that they consider the giving data is losing time.

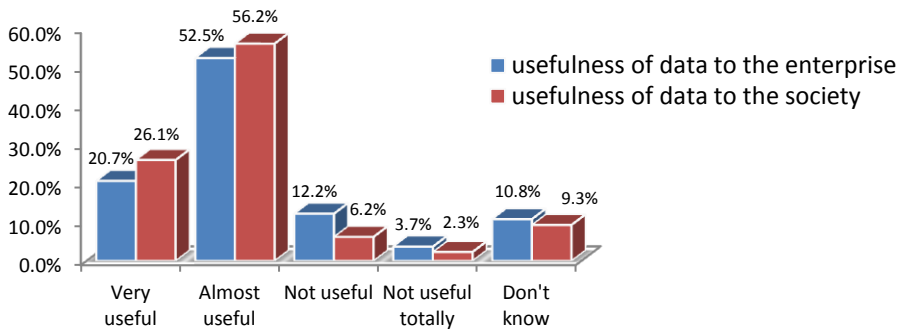


Figure 8

4.5 Enhancement of data collection process:

The data collection period of the economic surveys starts in middle of march and usually finishes in the beginning of may, visiting time of the interviewers officially starts at 8:30 and continues to 15:00. in the questionnaire, two questions were asked to the respondents about their preferred time of visit in the day and preferred month of data collection in the year, the objective of these questions is to get information about best periods of interviewing in the day and in the year, according to perspective of the respondents. The results are very consistent

with official time of work in PCBS, and partially consistent with the period of data collection in of the economic surveys. (Figure 9), (Figure 10).

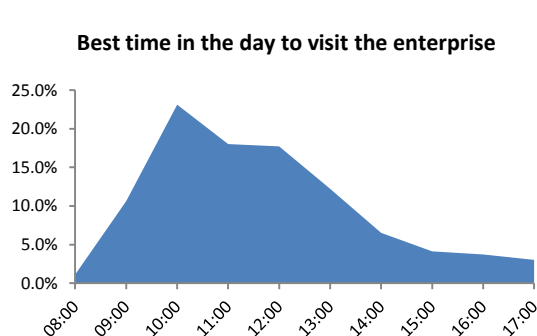


Figure 9

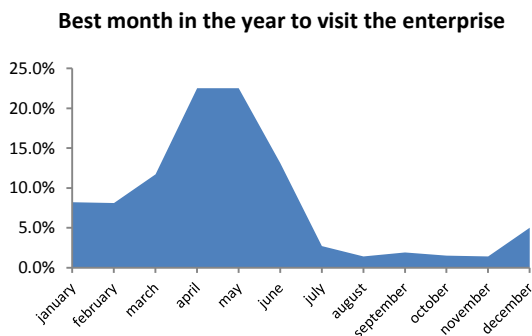


Figure 10

As mentioned before, the main method of data collection in PCBS is the personal interviewing in the field by qualified interviewers, the respondents were asked to choose best method to provide data about their enterprises, the majority of them (85.6%) considered the personal interviewing by field interviewers is the best method, while low percent preferred other methods through webmail, telephone/mobile, online database and post. (Figure 11).

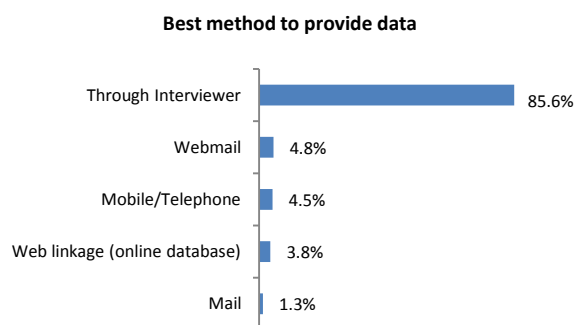


Figure 11

5. Conclusions:

The main objective of the response burden survey is measurement the actual and perceived burden for the economic surveys, the indicators of burden in 2013 will be a baseline indicators, making comparisons with new burden values in the next round of the economic surveys will be done after getting the new values, this comparison will show if the burden increases or decreases or remains the same values. Knowing that Reducing the response burden is one of the quality indicators in PCBS. The results of the response burden survey are very helpful to improve and manage data collection process. So, there is a need to monitor the response burden periodically and doing that for all the enterprises and households surveys. There are some actions had been followed in PCBS depending on the results of the response burden survey, such as: benefiting from the suggested periods and methods of data

collection for the economic surveys especially for large enterprises, and reviewing the questionnaire to omit the unnecessary questions, which was done and it is expected to reduce the total response time after reduction the questionnaire. PCBS decided to add one question to all the questionnaires, this question is to know what reasons of the refusal, this will help to know whether the burden is the main reason for refusals or not.

6. Future work:

The total response time (actual burden) for the surveys can be obtained directly when using the PC-Tablets devices in data collection, this can be obtained through analysis of Paradata , which is the information about data collection process. So, a monitoring system of actual burden can be applied to all the surveys that use the PC-Tablets devices in data collection.

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