Measuring Respondent Burden in Nigeria: A Case Study of Central Bank of Nigeria Enterprise Surveys

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This paper uses diffusion indices, percentages and reported time spent to measure the respondent burden in survey of foreign assets and liabilities (SOFAL) and business expectations survey (BES). The results show that respondents found it easy but time consuming to complete the SOFAL questionnaire with an average of 24 hours spent in collecting information and over 2 hours to fill the questionnaire. In contrast, respondents found it much easier and quicker to complete the BES questionnaire, spending an average of 47 minutes to collect relevant information from their records and another 36 minutes to complete the questionnaire. The paper identified problems of documentation, cumbersomeness of the survey instruments and lack of motivation of the respondents as main issues of concern.

Keywords: Respondent burden, Business expectation survey, survey of foreign assets and liabilities

JEL Classification: Y10

1.0   Introduction

The need for statistics in the day to day running of public and private organizations for policy analysis and decision making cannot be overemphasized. The ever present and increasing demand for data from both within and outside the organizations place big responsibilities on the offices charged with data collection. To meet these demands, surveys to elicit the requisite data from relevant data providing institutions needed to be carried out from time to time. Most of the statistics needed for national planning are derived from large scale sample surveys with establishments as major reporting units, among others. In a bid to comply with the requirement of statistical reporting, most responding enterprises undergo unavoidable burden. This burden has serious implications for response rate and quality of data supplied, and consequently on inferences drawn from such data.

In recent years, increasing attention has been paid to respondent burden that follow from the information needs of central authorities and other stakeholders, as businesses incur some costs of response burden, while

statisticians are worried about the respond burden as a survey quality issue. Survey organizations should be sensitive to the burden they put on business enterprises, and their concerns for how costly and time consuming this is for those enterprises. From a statistical point of view, however, the most important reason survey organizations should be concerned with the respondent burden is the fact that high respondent burden is likely to reduce data quality.

The Statistics Department of the Central Bank of Nigeria (CBN), like other data collection agencies, has always been confronted with two priorities, which are achieving high quality official statistics, and reducing respondent burden, as serious respondents' apathy characterized enterprise surveys in Nigeria (CBN Statistics Policy, 2010). In particular, respondents always complained of lengthy questionnaires, frequency of participation and time spent on survey, without direct benefit. Aside this burden, partly considered to be due to lack of good governance that could provide enabling environment for economic growth and development, respondents often held the usefulness of the data they provide in doubt with respect to the purpose expected to be used for.

The Department has been conducting surveys targeted at business enterprises including the annual SOFAL and the quarterly BES. The SOFAL aimed at obtaining data on foreign direct investment (FDI) and foreign portfolio investment (FPI), as well as other foreign capital flows, in form of debt obligations (debt securities, loans, trade and suppliers' credit, other advances) and debt liabilities, through the administration of questionnaires on enterprises selected using purposive sampling technique. It also measures the magnitude of foreign capital inflows, outflows and identifies country's capital flow destination and inflow recipient sectors.

Statistics from SOFAL shed light on the size and composition of a country's external trade in goods and services as well as its financial transactions with the rest of the world. On the other hand, the BES is an opinion-testing survey which uses structured questionnaire to elicit response from industry, construction, wholesale/retail, and services sectors through stratified random sampling technique. It reflects the perception of different enterprises on current and future business conditions including level of production and economic activity as well as factors that could influence the movement of key

macroeconomic variables. Given the forward-looking instance of BES, data generated from the survey are always used for short-term planning, forecasting, risk management of the business conditions and the business outlook for the economy.

This study measured respondent burden looking at it from four dimensions - perceived burden, actual burden, perceived causes of burden, and motivation as experienced by business enterprises when participating in SOFAL and BES surveys as well as recommend ways of reducing the burden. We use diffusion indices, percentages and actual reported time spent in completing the questionnaires to measure these burdens. The paper is structured into six sections. Following the introduction is section two which is a review of related literature. Section three discussed with the research methodology, while section four discussed data presentation and results. Section five highlighted the emerging issues and policy measures, while section six concluded the paper with summary of major findings.

2.0   Review of Related Literature

Dale and Haraldsen (2003) and Haraldsen, *et al*. (2010) indicated that burden dimensions in surveys are classified into perceived burden, actual burden, perceived causes of burden and motivation. They defined perceived burden as 'how easy or burdensome and quick or time consuming it was to complete a questionnaire'. Actual burden refers to 'time spent on collecting information necessary for questionnaire completion', and 'time spent on actually filling out the questionnaire'. Perceived causes of burden examine the reasons why respondents consider their participation in the survey as time consuming and burdensome. Motivation dimension refers to the perception of respondents on the usefulness or otherwise of the survey to their business and the society.

Rainer (2004) and Karsten (2004) attempted to measure actual burden in Austria and Denmark, respectively. According to Rainer (2004), the Austrian Federal Economic Chamber and Statistics Austria together developed a system of response burden measurement that covers all compulsory surveys on businesses performed by Statistics Austria known as "Response burden barometer". The actual burden was defined as the time (in hours and minutes) spent for filling in the questionnaires whether on paper or electronically. Karsten (2004) indicated that the response burden was compiled as the time spent by the business enterprises and only covers private enterprises' legal

data reports submitted to Statistics Denmark. Thus, total response burden was equal to the total time spent on all compulsory surveys by the private enterprises in a given year.

In Sweden, Statistics Sweden developed a Register of Data provider concerning enterprises and organizations called ULR to measure, analyze and reduce response burden. The ULR register contains information of the average time for filling in the questionnaire from respondents in business surveys. The actual response burden, expressed in additional time to collect and report requested data, caused by each round of participation in any of the surveys is recorded (Notstrand & Bolin, 2008). The estimated time spent is either calculated from a question included in business surveys (about 20 per cent) or estimated by survey experts at Statistics Sweden (about 80 per cent). The time is stated in minutes or hours. Perceived burden was measured using a combination of responses to two questions listed below with five-point response scale: Do you think it was quick or time consuming to collect the necessary information to complete the Sweden Business Survey (SBS) questionnaire? And did you find it easy or burdensome to complete the questionnaire?

The Australian Bureau of Statistics (ABS) measured respondent burden as the product of the number of questionnaires and average completion time. The ABS computed the total annual burden over all business surveys and set target for reduction. In Finland, Leivo (2010) measured the actual burden by asking respondents how much time they spent getting the data, reading the instructions, acquiring and processing the requested data, the number of people involved in answering and replying the questionnaire. The perceived burden was measured by asking whether answering the survey had been easy or burdensome using a five point scale from very easy to very burdensome, and by responding to a list of 10 questions.

Williams et al (2009) showed that in the United Kingdom (UK) respondent burden was measured by looking at the economic costs to businesses. The UK Office for National Statistics (ONS) adopted the quantitative Standard Cost Model (SCM) approach instead of the qualitative approach. The main differences are in the design, mode of collection and level of details. Oomens and Timmermans (2008) and Giensen (2011) described the statistics Netherlands approach at measuring response burden. The actual response

burden in Netherlands is measured using SCM approach developed by the Dutch government. For most of their surveys, the response burden is measured on a sample of respondents, with one additional question on the time needed for providing the data. The actual burden is calculated as the time needed to fill the questionnaire, an hourly rate is then applied to estimate the average cost of completion time of each group of the survey. These costs were multiplied by the number of respondents to calculate administrative statistics for one year.

The Irish Central Statistics Office - CSO (2010) have been compiling and publishing its own measure of administrative burden since 2008. This measure is based on actual response/compliance. The approach requires each respondent when completing a survey questionnaire, to answer a question on the estimated time taken to complete the questionnaire. The overall cost is then estimated by applying National Employment Survey (NES) estimates of hourly rates for managers to the time taken.

Giesen (2011) carried out a web survey with 45 National Institutes of Statistics (NSIs) from 42 countries on measurement and reduction of burden in their business surveys. In the questionnaire used, they distinguished between measuring actual response burden and perceived response burden. The authors concluded that the various measurement practices found indicated both differences in the purpose and in the quality of the measurements. This makes it hard to compare burden levels and developments in various countries. These results support Rainer's (2004) call to move towards international standardization of response burden measurement in order to get high quality and comparable measures.

There is great divergence on how to measure the overall burden in terms of time and cost. Imperatively, the Eurostat (2003) compared the Perceived Response Burden (PRB) approach with the Standard Cost Model (SCM) and found that both approaches came up with very similar estimates on questions like the time it takes to fill in the questionnaires. In Nigeria it is difficult for respondents to give information about their actual earnings on hourly, weekly or monthly basis. Therefore, this study will adopt the PRB approach which tries to find out whether or not the respondent found the host survey burdensome, why it took time to fill the questionnaire and about the usefulness of the survey.

3.0   Methodology

This study utilized primary data obtained from response burden questionnaires administered to 1,950 establishments, drawn from the updated survey frames of both the Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS) during the third quarter 2012 BES survey. Another 150 establishments were drawn using stratified random sampling during the 2011 SOFAL conducted in 2012. The respondents of BES surveys were drawn from the thirty six (36) states of the federation and the Federal Capital Territory, Abuja as shown in Figure 1, while that of SOFAL were from four industrial enclaves[2]. The perceived response burden approach was described by Dale and Haraldsen (2007) in the Handbook for Monitoring and Evaluating Business Survey.

Figure 1: A Map of Nigeria Showing all the States covered during the survey

Response Burdens methodology compiled by the European Commission was adapted in analyzing the data. This methodology examined four burden dimensions from which eight questions were developed. The four dimensions were (i) perceived burden, which was measured by perception of time and perception of burden indicators, (ii) actual burden, which was measured by the time to collect relevant information and time to complete questionnaire indicators, (iii) perceived causes of burden, which was measured by reasons for time consuming and condition for burden indicators, and (iv) motivation, which was measured by usefulness of the survey for own business and usefulness for the society indicators.

2*The industrial enclaves were Lagos/Ogun, Kano/Kaduna, Portharcourt/Calabar, and Asaba/Nnewi axes.*

Four of the eight indicators - perception of time; perception of burden; usefulness of the survey to own business; and usefulness to society were computed based on a 5-point scale by giving values to response categories, letting -1 equal very burdensome/very time consuming/very useless, -0.5 equal burdensome/time consuming/useless, 0 equals neither/nor option, +0.5 equal easy/quick/useful and +1 equal very easy/very quick/very useful. Hence, the indicators vary from -1 to +1 and the indices were computed using the formula (Getz and Umer, 1990):

$$DI = (MP + 0.5P) - (MN + 0.5N) \qquad\qquad (1)$$

Where: DI = Diffusion Index[3]
            MP = most positive percentage response
            P = positive percentage response
            MN = most negative percentage response
            N = negative percentage response

Two indicators (reasons for time consuming and conditions for burden) were computed using percentages, while the remaining two indicators (time to collect information and time to complete questionnaire) were computed by averaging the reported time spent by the respondents. The study adopted eight (8) hours official working day (that is 8am to 4pm daily), such that the actual burden could be reduced to days, where need be.

4.0   Data Presentation and Discussion of Results

4.1   Characteristics of Respondents

The SOFAL respondent burden survey covered a sample size of 150 establishments that cut across four (4) sectors of the economy, of which 94 responded, giving a response rate of 62.7 per cent. The sectors include: Industry; Construction; Wholesale/retail; and Services (which comprise Financial Intermediation; Renting and Business Activities; and Community and Social Services sub-sectors). From the result, the large, medium and small enterprises by employment size, constituted 43.6, 41.5 and 14.9 per cent, respectively.

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3 *DI is computed as percentages of firms that answered in the positive less the percentage that answered in the negative in a given indicator. A positive DI indicates favourable view and vice versa.*

Table 1: Type of Respondents Enterprise

Sector	SOFAL			BES		
	No. Distributed	No. Retrieved	Percent	No. Distributed	No. Retrieved	Percent
Industry	100	62	62.0	520	490	94.2
Construction	20	8	40.0	270	260	96.3
Wholesale and Retail trade	10	5	50.0	480	470	97.9
Services:	20	19	95.0	680	676	99.4
Total	150	94	62.7	1950	1896	97.2

Sources: Author's Computation, 2012.

On the other hand, BES had a sample size of 1,950 establishments, while 1,896 questionnaires were retrieved, representing 97.2 per cent response rate, and covering four (4) sectors of the economy as in the SOFAL. From the result, the small and medium enterprises by employment size, constituted 80.6 and 14.2 per cent, respectively, while large enterprises recorded 5.2 per cent (Table 1).

4.2   Perception of Time and Burden

Results from the analysis in Table 2 showed a negative overall respondents' perception of time consumed in collecting information for filling a SOFAL questionnaire with a diffusion index (DI) of -2.1. However, a positive diffusion index of 2.7 was recorded for the perception of burden by the respondents indicating that it was somewhat easy to fill the questionnaire. On the other hand, table 3 on BES, indicated a positive DI of 24.7 for respondents' perception of time and DI of 32.3 for perception of burden. This confirmed that it was quick to collect the necessary information and easy to fill the BES questionnaire.

Table 2: SOFAL Respondents Perception of Time and Burden

Perception of Time				Perception of Burden			
Response	Frequency	Percent	DI	Response	Frequency	Percent	DI
Very quick	7	7.4		Very easy	11	11.7	
Quick	28	29.8		Easy	27	28.7	
Neither quick nor	23	24.5	-2.7	Neither easy nor	23	24.5	2.7
Time consuming	26	27.7		Burdensome	22	23.4	
Very time consuming	10	10.6		Very burdensome	11	11.7	
Total	94	100.0		**Total**	94	100.0	

Source: Author's Computation, 2012.

Table 3: BES Respondents Perception of Time and Burden

Perception of Time				Perception of Burden			
Response	Frequency	Percent	DI	Response	Frequency	Percent	DI
Very quick	321	16.9		Very easy	395	20.8	
Quick	791	41.7		Easy	838	44.2	
Neither quick nor time consuming	373	19.7	24.7	Neither easy nor burdensome	323	17.0	32.3
Time consuming	327	17.2		Burdensome	278	14.7	
Very time consuming	84	4.4		Very burdensome	62	3.3	
Total	1896	100.0		**Total**	1896	100.0	

Source: Author's Computation, 2012.

4.3   Actual Burden and Time Dimension

The overall analysis indicated that, on the average, 1,449 minutes (about 24 hours) was needed to collect the necessary information and 166 minutes or 2 hours and 46 minutes to fill the SOFAL questionnaire as shown in Table 4 below. For BES, it takes an average of 47 minutes to collect the necessary information and average of 36 minutes to actually fill in the questionnaire (Table 5). However, this significant difference could be because of the type of the questionnaire. While BES is made up of impressionistic questions with options to choose; the SOFAL is technical and lengthy requiring a lot of information from the books of accounts of the responding enterprises.

Table 4: Average Time to Collect Information and Fill a SOFAL Questionnaire (Time in Minutes)

S/N	ZONES	TIME TO COLLECT	TIME TO FILL
1	NATIONAL	1449	166

Source: Author's Computation, 2012.

Table 5: Average Time to Collect Information and to Fill a BES Questionnaire (Time in Minutes)

S/N	ZONES	TIME TO COLLECT	TIME TO FILL
1	NORTH-EAST	48	35
2	NORTH-WEST	46	36
3	NORTH-CENTRAL	39	38
4	SOUTH-WEST	44	36
5	SOUTH-EAST	62	36
6	SOUTH-SOUTH	41	34
7	**NATIONAL**	**47**	**36**

Source: Author's Computation, 2012.

4.4   Perceived causes of time consumption and burden – SOFAL and BES

Results from the SOFAL indicated that the main reasons that made gathering of information time consuming were collection of information from different sources (49.1 per cent), getting help from others in the completion of the questionnaire (27.3 per cent), waiting for information that would be available at different times (14.5 per cent) and other reasons   (9.1 per cent). For the BES, the reasons that made the questionnaire completion time consuming were collection of information from different sources (32.1 per cent), getting help from others in the completion of the questionnaire (41.6 per cent), waiting for information that would be available at different times (18.1 per cent) and other reasons (8.3 per cent).

For perceived causes of burden on the other hand, the reasons that made completing the SOFAL questionnaire burdensome were too many questions (32.9 per cent), lack of understanding of terms and explanatory notes (15.9 per cent), complications and lengthy calculations (13.4 per cent), unavailability of required information (13.4 per cent), difficulty in deciding which answer to choose (12.2 per cent) and difficulty in understanding of the questionnaire as a result of the layout (4.9 per cent) as well as other reasons (7.3 per cent).

The BES respondents, when asked the reasons that made completing the questionnaire burdensome, answered thus: too many questions (29.4 per cent), lack of understanding of terms and explanatory notes (17.8 per cent), complications and lengthy calculations (9.3 per cent), unavailability of required information (13.2 per cent), difficulty in deciding which answer to choose (16.2 per cent) and difficulty in understanding the questionnaire as a result of the layout (5.1 per cent) as well as other reasons (9.0 per cent).

4.5   Usefulness of Survey for Business and Society

SOFAL respondents were optimistic that the report generated from the survey was useful to their businesses and the society as indicated by a DIs of 58.0 and 70.7 points, respectively (Table 6). Similarly, the BES respondents were of the opinion that the report generated from the survey was useful to their businesses and the society with DIs of 55.9 and 62.1 points, respectively.

5.0   Emerging Issues and Policy Recommendations

5.1   Emerging Issues

This section highlighted some of the issues that have emerged from results of the study. The results of SOFAL showed that respondents perceived information gathering from different sources as well as getting help from others as time consuming. This was supported by the actual time spent in the process, averaging 24 hours, which when translated into working day hours [8 working day hours = 1 day]; it would mean spending 3 working days (24/8 hours per day). Thus, dedicating 24 hours or 3 working days for the SOFAL questionnaire would mean devoting a lot of time (resources) by the responding enterprises whose principal objective is to make profit for their employers. Documentation problem arises from our low level of technological adaptation, as most records were kept and managed manually; hence, retrieval becomes difficult/time consuming or almost impossible.

Table 6: Perception of Survey Usefulness

	SOFAL Difusion Index	BES Difusion Index
Usefulness to Business	58.0	55.9
Usefulness to Society	70.7	62.1

Source: Author's Computation, 2012.

For BES, the problem of documentation still emerged due to dominance of small enterprises in the survey frame, which accounted for 80.6 per cent of the total respondents. Generally, it was noted that small enterprises hardly keep records, and where they do, it is kept haphazardly. This could be attributed to the low level of financial literacy.

SOFAL respondents reported that the questionnaire had too many questions; that they did not understand certain terms and their explanations; that the questions involved lengthy calculations as well as mismatch of available information. On the other hand, BES respondents answered that there were too many questions, did not understand the terms and their explanatory notes in the questionnaires and found it difficult to tick or select the correct option/answer.

The usefulness of the reports of the surveys (SOFAL and BES) to their business and to the society do not suffice as enough motivation for their

continued participation. This could be attributed to their perception that the survey was time consuming and burdensome.

5.2   Policy Recommendations

The CBN and other data generation agencies should come together and see how to improve on the record keeping processes of the data suppliers as well as sensitize them on the need for the adoption of modern technology in record keeping.

Specifically, the SOFAL design and methodology should be reviewed so as to reduce the length of the questionnaire. In other word, we must think of how best to redesign the timing and duration of field work and concepts of the SOFAL questionnaire without losing out the important information it seeks. In addition, the desk officers in responding enterprises and field officers should be trained on the concepts used in the questionnaire.

The National Statistics Policy should be made fully operational and establishments should be compelled to submit data to the National Bureau of Statistics for dissemination.

The CBN should sensitize and motivate data suppliers on the importance of keeping good and up-to-date records. In this regard, the Bank should consider sending letters of commendation to respondents and other forms of souvenirs to motivate them to complete the instruments so as to reduce the burden and encourage higher response rate.

This study is mainly for the purpose of measuring, monitoring and reduction of respondent burden over time to ensure and maintain high response rate and data quality. Thus, it should be carried out after every three to five years.

6.0   Summary and Conclusion

Many respondents to the CBN's statistical surveys undergo burden when responding to questionnaires. The burden has profound implications on response rate, data quality and inferences drawn from such data. This study measured respondents' burden in enterprise surveys being conducted by the CBN with a view to suggesting ways of reducing the burden while ensuring data quality and integrity.

Results from the DI analysis indicated that SOFAL respondents found it somewhat easy but time consuming to fill a SOFAL questionnaire as showed by a positive DI for the perception of time and a negative DI for the burden. However, BES respondents indicated that it was quick to collect the necessary information for the filling of the questionnaire and easy to actually fill the questionnaire. The study also showed that an average of 24 hours was needed by respondents to collect the necessary information for the completion of the SOFAL questionnaire, while only about 47 minutes was needed by BES respondents to perform such function. Similarly, SOFAL respondents indicated that they needed an average of 2.8 hours to complete the instrument, while BES respondents needed an average of 36 minutes to complete the survey questionnaire. Respondents for both the SOFAL and BES indicated that reports generated from the surveys were useful to both their businesses and the society.

The study identified documentation problems, commitments of respondents to completing the questionnaires and problems associated with survey instruments as some of the factors militating against the successful conduct of CBN enterprise surveys. The study, therefore, recommended that data generating agencies should ensure improvements in the record keeping processes of data suppliers; the CBN should review the SOFAL design and methodology, the full operationalization of the National Statistics Policy and sending letters of appreciation and souvenirs to respondents periodically. These findings are essential for the planning and conduct of enterprise surveys.

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