



Patterns of response and non-response in longitudinal survey of Oyo community, Oyo state, Nigeria

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ABSTRACT

There is widespread concern that the cumulative effects of the non-response that is bound to affect any long-running longitudinal study will lead to mistaken inferences about change. We focused this work on the Longitudinal Survey of Oyo town covering the existing fifteen (15) Enumeration Areas to show the patterns of response and non-response. The Surveys started in 2008 and a two-stage stratified random sampling scheme was used in selecting 750 households. Household heads were interviewed in five waves (waves 1, 2, 3, 4 and 5). We used an interviewer-administered questionnaire to collect data on the demographic characteristics of the respondents. The Response rates for waves 1 through 5 were 77.86%, 82%, 81.33%, 82% and 80.67% respectively while the non-response rates were 22.14%, 18%, 18.67%, 18%, and 19.33% respectively. The average number of visit ranges from a minimum of 1.2 in Kosobo to a maximum of 4 in Ladigbolu. The average duration of the household interview ranges between a minimum of 7.7 minutes in Monbolaje and a maximum of 18 minutes in Asipa. Finally, fieldwork lasts on average of 11.8 hour in Asipa, but only 6.6 hours in Monbolaje. The most common interview mode is the Pencil-And-Paper (face-to-face) Interview. New entry is linked to eligibility, whereas monotone attrition is mainly due to migration. Occasional responses are due to absences while that of non-responses are due to out of scope and lack of cooperation.

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Introduction

The maintenance of high response rates is an important objective for most surveys. Increasingly, Survey organizations have to make greater efforts to achieve respectable response rates. Relatively expensive response maximization techniques that were once used only in adversity or on particularly burdensome surveys are now used routinely. These include the use of incentives for respondents, Singer (2000), Singer et al (1999), extended interviewer efforts to make contact, Campanelli et al (1997), Lynn et al (2002), Lynn and Clarke (2000), Swires-Hannessy and Drake, (1992), Weeks et al (1980, 1987) and attempts to convert refusals, Curtin et al (2000), Lynn et al (2002), Lynn and Clarke, (2002), Stoop (2004).

Longitudinal studies, suffer from the problems that are created by non-response. The non-response can take three forms: unit non-response, wave non-response and attrition. By attrition, we mean the unintended and permanent loss of members from the longitudinal target sample as the members. Wave non-response is defined in the same way as attrition except that 'temporary' is substituted for 'permanent'.

Unit non-response refers to the absence of members of the target sample from the outset of the study. Any longitudinal survey that aims to re-interview the same sample members over a number of years, attrition is a major concern.

Even the best designed and implemented surveys can expect to lose considerable proportions of the sample to attrition, if the data are collected over long periods with many waves. For example, on the panel Study of Income Dynamics which began

in 1968, half the samples were lost to attrition over the 20-years period to 1989, Fitzgerald et al (1998).

Section 2: Survey Design

The longitudinal Surveys of Oyo Town (LSOT) started in 2008 and a two-stage stratified random sampling scheme was used in selecting 750 households in Oyo town covering the fifteen (15) Enumeration Areas. Household heads were interviewed in five waves (waves 1, 2, 3, 4 and 5). An interviewer-administered questionnaire was used to collect data on demographic characteristics including age, gender, educational qualification, income, housing, health, religion, employment status, family size, and duration of interview. Demographic characteristics were analyzed using summary statistics.

The LSOT employed a range of response maximization techniques, including advance letters, between-wave phoning, multiple call-backs and incentives in the form of a gift presented as a 'thank you' for doing the interview. These techniques are described in Laurie et al (1999)

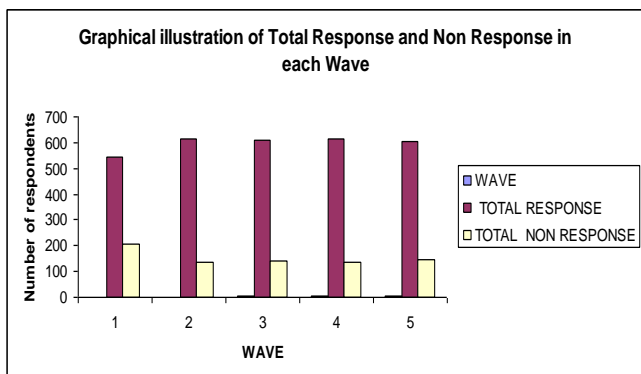
Section 3: Discussion of Results

• Response and Non Response in each Wave

The respondents' response to the survey questions varies from wave to wave, during the execution of the survey. Out of 750 respondents that were interviewed in each wave, 545, 615, 610, 615, 605 responded to survey questions in wave 1 to wave 5 respectively. See table 1 and figure 1.

Table 1: Total Response and Non Response in each Wave

Wave	Total response	Total non response
1	545 (77.86%)	205 (22.14%)
2	615 (82%)	135 (18%)
3	610 (81.33%)	140 (18.67%)
4	615 (82%)	135 (18%)
5	605 (80.67%)	145 (19.33%)

**Figure 1: A Multiple Bar Chart Comparing Responses and Non Response from Wave one to wave five in Oyo town**

• Survey Differences across Oyo Town

This section summarizes the main differences in the design and organization of survey across Enumeration Areas and waves, focusing on observable survey characteristics which may be relevant for understanding cross-community differences in survey participation.

Table 2 below reports community specific averages of several variables that characterized the data collection process: the number of visits and average length of household interview (minutes).

The average duration of household interview ranges between a minimum of 9 minutes in Agunpopo and maximum 18 minutes in Asipa.

The average number of visit ranges from a minimum of 1.2 in Kosobo to a maximum of 4 in Ladigbolu. This variability across communities reflected both a difference organization of the call-backs and differences in the ease of contact. In particular, a high average number of visits signal contact difficulty Lynn et al., (2002). The average duration of the household interview ranges between a minimum of 7.7 minutes in Monbolaje and a maximum of 18 minutes in Asipa. Finally, fieldwork lasts on average of 11.8 hour in Asipa, but only 6.6 hours in Monbolaje.

Table 2: Mean Of Selected Survey Features by Community

Enumeration Areas	Average number of visits	Average length of household Interview (minutes)	Length of fieldwork (hours)
Owode	2.0	10.7	8.7
Ilora	3.0	13.8	9.8
Awe	2.4	9.1	7.0
Monbolaje	2.0	7.7	6.8
Dacamca	2.6	16.3	10.6
Ladigbolu	4	17.3	11.0
Kosobo	1.2	13.8	10.0
Agunpopo	2.3	9.0	6.92
Asipa	1.9	18	11.8
Saabo	2.4	12.3	8.5
Cele	2.0	9.5	8
Idi-igba	2.1	9.9	8.3
Akinmorin	3.3	10.0	9
Akesan	2.8	13.5	9.5
Araromi	2.5	14.7	10.6

Table 3 reports the relative importance of three different interview modes, namely Pencil-and-Paper (face-to-face) Interview (PAPI), Oral Interview (OI) and proxy interview. In general, the most common interview mode is the Pencil-and-Paper (face-to-face) Interview. The main exception is Akesan, where the most common interview mode is Oral Interview. Finally, proxy interviews are rare except in Awe, Dacamca and Asipa.

Table 3: Interview modes by community

Enumeration Areas	PAPI (%)	OI (%)	Proxy (%)	Missing (%)	Total (%)
Owode	70	20	0	10	100
Ilora	50	30	0	20	100
Awe	60	30	10	0	100
Monbolaje	80	20	0	0	100
Dacamca	80	10	10	0	100
Ladigbolu	70	0	0	30	100
Kosobo	70	30	0	0	100
Agunpopo	80	20	0	0	100
Asipa	60	30	10	0	100
Saabo	80	10	0	10	100
Cele	80	0	0	20	100
Idi-igba	100	0	0	0	100
Akinmorin	40	40	0	20	100
Akesan	30	50	0	20	100
Araromi	60	20	0	20	100

• Survey participation in a single wave

We say that a person does not participate in a given wave of the survey if she is ineligible in that wave or if she is a unit non-respondent. Unit non-response occurs when an eligible person (i.e house head) fails to respond to survey questions. There are two broad reasons for unit non-response: one is contact failure, due to the absence of the person or other reasons; the other is lack of cooperation.

Causes of non-participation are: natural demographic events, movement from in to out of scope of the survey, or vice versa, including institutionalization, migration to a foreign country, movement of a non-sample person to a household without sample individual, etc, absence of the person at the address and lack of cooperation.

Household response rates are defined as the ratio of the number of households interviewed to the target number for interview. Table 4 report household response rates in the first five waves of the LSOT

Averaging over the fifteen Enumeration Areas that were considered, over all household response rates in the first wave was 77.86%. The response rates in Akinmorin, Dacamca, Owode and Ladigbolu are 50%, 50%, 50%, and 40% respectively which were low reflected respondents absence as at the time of interview, whereas the response rates in Awe, Mobolaje, Asipa, and Idi-igba which are 90%,90%, 100% and 100% respectively reflected the fact that the respondents are self employed and always around.

Table 4: Household response rates in the first five waves of the LSOT

Enumeration Areas	Response rates (%) for the following waves				
	wave 1	wave 2	wave 3	wave 4	wave 5
Owode	50	40	40	50	90
Ilora	60	60	60	80	80
Awe	90	100	100	90	90
Akinmorin	50	70	70	80	60
Dacamca	50	90	100	90	100
Ladigbolu	40	60	60	70	60
Cele	80	80	80	80	80
Sabo	70	80	90	70	70
Mobolaje	90	90	90	100	90
Araromi	70	80	70	60	70
Kosobo	70	100	80	70	70
Agunpopo	90	90	100	100	90
Akesan	80	90	80	90	80
Asipa	100	100	100	100	80
Idi-igba	100	100	100	100	100

Table 5 reports the fraction of non-participants by Enumeration Areas and waves.

Table 5: Fraction of non-participants by Enumeration Areas and Waves

Enumeration Areas	Fraction of non-participants (%) for the following waves				
	wave 1	wave 2	wave 3	wave 4	wave 5
Owode	50	60	60	50	10
Ilorra	40	40	40	20	20
Awe	10	0	0	10	10
Monbolaje	50	30	30	20	40
Dacamca	50	10	0	10	0
Ladigbolu	60	40	40	30	40
Kosobo	20	20	20	20	20
Agunpopo	30	20	10	30	30
Asipa	10	10	10	0	10
Saabo	30	20	30	40	30
Cele	30	0	20	30	30
Idi-igba	10	10	0	0	10
Akinmorin	20	10	20	10	20
Akesan	0	0	0	0	20
Araromi	0	0	0	0	0

Table 6 shows, for the various types of pattern, the relative importance of the different causes of participation and non-participation. For people who entered in wave t, we considered why they did not participate in wave t-1, whereas, for people who exit in wave t, we look at the cause of attrition in that wave. For the occasional response patterns, we reported the causes of both non-participation before entry and of drop-out after participation. For the occasional non-response patterns, we reported only the causes of non-participation before re-entry, whereas, for the occasional response pattern, we reported only the causes of non-participation before the last entry. New entry is linked to eligibility, whereas monotone attrition is mainly due to migration. Occasional response is due to absence and occasional non-response is due to out of scope and lack of cooperation.

Table 6: Participation patterns by Enumeration Areas

Enumeration Areas	Continued participation (%)	Monotone attrition (%)	New entry (%)	Occasional non-response (%)	Occasional response (%)	Total (%)
Owode	90	0	10	0	0	100
Ilorra	100	0	0	0	0	100
Awe	90	10	0	0	0	100
Monbolaje	70	10	20	0	0	100
Dacamca	80	0	0	20	0	100
Ladigbolu	90	0	0	0	10	100
Kosobo	60	0	0	0	40	100
Agunpopo	80	0	0	10	10	100
Asipa	50	10	0	0	40	100
Saabo	80	0	20	0	0	100
Cele	60	0	20	20	0	100
Idi-igba	100	0	0	0	0	100
Akinmorin	80	0	20	0	0	100
Akesan	100	0	0	0	0	100
Araromi	70	0	30	0	0	100

Causes of participation and non-participation by type of participation pattern

	Demographic event (%)	Out of scope (%)	Absence (%)	Lack of cooperation (%)
Causes of non-participation before entry				
New entry	0	0	80	20
Occasional response	0	0	60	40
Causes of drop out				
Monotone attrition	45	0	25	30
Occasional non-response	0	10	60	30
Occasional response	0	90	0	10

Summary of Demographic Characteristics

Demographic Characteristics	Percentage of respondents
Females	64.8
Males	35.2
Muslims	52.8
Christians	43.3
Traditional worshippers	3.9
Employed respondents	88.9
Unemployed respondents	11.1
Tenants	58.5
Owner occupiers	41.5
Nigerians	92.3
Non Nigerians	7.7

From the summary of demographic characteristics, 64.8% of the respondents were females, 52.8% were Muslims, 43.3% were Christians, 88.9% were employed, 41.5% were owner occupiers and 92.3 were Nigerian.

The mean age of the respondents was 51.8 years and the modal family size was 3.

Section 4: Conclusion

The average number of visit ranges from a minimum of 1.2 in Kosobo to a maximum of 4 in Ladigbolu. The average duration of the household interview ranges between a minimum of 7.7 minutes in Monbolaje and a maximum of 18 minutes in Asipa. Finally, fieldwork lasts on average of 11.8 hours in Asipa, but only 6.6 hours in Monbolaje. The most common interview mode is the Pencil-and-Paper (face-to-face) Interview. New entry is linked to eligibility, whereas monotone attrition is mainly due to migration. Occasional response is due to absence and occasional non-response is due to out of scope and lack of cooperation.

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