



Survey responses across various levels of response predictors in some selected communities in Oyo town, Oyo state, Nigeria

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ABSTRACT

This study was carried out to examine survey responses across various levels of response predictors in some selected communities in oyo town, Oyo State, Nigeria. The design for this study was a two-stage stratified random sampling scheme. A Sample of 750 households was randomly selected in fifteen Enumeration Areas in Oyo town. The data were collected by interviewer-administered questionnaire and predictors of response were extracted for the verification of response rates at various levels of these predictors. Out of the 750 respondents that were interviewed in each of the five waves, 545, 615, 610, 615, 605 responded to survey questions respectively. The maximum number of visits considered for this research work is five per wave and after the fifth visits, respondents were regarded as non response. The response rates from the following predictors:- Females, those that were living with their spouse, those that were interviewed with English language, respondents at the middle age (50-79 years), those that are familiar with the interviewer and tenants were observed to be high. Also, the response rates increases from first visit to the fourth visits and at the fifth visit, it declined. We also observed that the more the number of years a respondent has spent in his/her community, the more they response to survey questions.

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Introduction

Gaining valid answers to sensitive questions, questions pertaining to private, socially frowned upon or illegal behaviour is difficult. People typically underreport sensitive behaviour while over-reporting socially desirable behaviours Warner (1965). Various techniques have been developed to guarantee anonymity and minimize the respondent's feelings of jeopardy, so that more honest answers can be expected. Two of such techniques are: The Randomized Response Technique (RRT), Warner (1965), Fox and Tracy (1986) and the Unmatched Count Technique (UCT); also called item count technique, unmatched block design, or block total response Dalton et al. (1994), Raghavarao and Federer (1979). Brunner and Carroll (1969): In their study titled 'the effect of prior notification on the refusal rate in surveys'. They studied the effects of survey sponsor on the response rate and they found that an advance letter printed on university stationary increased response by 30% over samples who received no advance letter, while an advance letter on stationary from a relatively unknown business decreased response rate by 6%. Heberlein and Baumgartner (1978) worked on factors affecting response rates to mail questionnaires. They compared response rates for 98 published mail questionnaire surveys and found higher response rates for government-sponsored surveys.

Kalton et al (1978) studied the effects of general and specific questions on response rate. Respondents were asked about driving standards generally and about driving standards among younger drivers. When the general question was first asked, 34 per cent of the respondents said that general driving standards were lower than they used to be. When that question

followed the more specific question about younger drivers, the corresponding percentage fell by 7 per cent.

Schuman et al (1981) studied the context effects on survey response to questions with two opinion questions on abortion and they found that the distributions of answers to the more specific questions were the same whether the specific question was asked before or after the general question, but the distributions of answers to the general questions differed according to the question position.

Groves et al. (1992) examined the effect of interviewer interaction with the respondents on the response rate and they found that tailoring the interaction was important. However, they also found that mentioning the survey sponsor was rated as a highly efficient means of securing cooperation. Successful interviewers also felt that the agency should pay more attention to public relations and thus, "the image of the agency is seen as a tool to work with and attain a better response rate." Harris-Kojetin and Tucker (1999) in their study titled 'exploring relation of economic and political conditions with refusal rates to government survey'. They found that in times of more positive public opinion regarding the government and government leaders, cooperation rates were higher. Survey respondents representing establishments (such as schools, hospitals, factories, farms or other businesses) may be somewhat different from respondents representing themselves or their households. These differences may make attitudes toward the survey sponsor more important than in general household surveys. Snijkers et al (1999) studied the tactics that high performing survey interviewers can use to gain cooperation. Similarly Groves et al. (1992) found that tailoring the interaction

was important, also that mentioning the survey sponsor was rated as a highly efficient means of securing cooperation. Successful interviewers also felt that the agency should pay more attention to public relations and thus, "the image of the agency is seen as a tool to work with and attain a better response rate."

MacElroy (2000) worked on a topic titled "variable influencing drop-out rate in web based surveys". He reviewed 19 studies done by Modalis Research Technology (USA) involving business-to-business technology related decisions. He found that drop-out rates decrease with incentives and increase with questionnaire length. Sheehan (2001) in his study titled 'E-mail survey response rates studied the influence of five factors (the year the study was undertaken, the number of questions in the survey, the number of pre-notification contacts, the number of follow-up contacts and survey topic salience) on response rates in 31 email surveys undertaken since 1986. She showed that the year the survey was undertaken and the number of follow-up contacts had the most influence on response rates to the survey questions: response rates decrease with time and increase with the number of follow-ups. Knapp and Ariel (2001) conducted research on 'Drop out analysis' he reviewed nine unrestricted self-selected surveys done by Internet Rogator (Germany) in order to identify factors influencing drop-out rates. They found that longer surveys, sensitive topics and lack of incentives lead to higher drop-out rates.

Ariel (2001) carried out research on response time to survey questions. Lecture audiences and students were asked to respond to virtual decision and game situation at gametheory.tau.ac.il. Several thousand observations were collected and the response time for each answer was recorded. He showed that emotional response, require less response time than choices that require the use of cognitive reasoning.

Cheti and Franco (2005) worked on survey response and survey characteristics using probit model and they found that the number of children in the household, home ownership and the length of residence at the current address positively influenced contact of the respondents in the survey. Women, people with college education respond more to the survey questions. Sigrid (2006) carried out research on the effects of interviewer and respondents characteristics on response behaviour in panel surveys. The logistic regression analysis provides results that several respondents' characteristics as well as interviewer characteristics has an impact on the refusal rate. For older interviewers, female interviewer, interviewers with high experience and interviewers with higher education lower refusal rates has been found. Older respondents agreed more than the younger ones to cooperate.

Methodology

The design for this study was a two-stage stratified random sampling scheme. A Sample of 750 households was randomly selected in fifteen Enumeration Areas in Oyo town. Questionnaires were distributed to the respondents on five different occasions (wave 1 - wave 5) and the predictors of response were extracted from the questionnaires and coded for the further statistical analysis.

Family size was classified into six categories. We considered family without children, family with one child, two, three, four and more than four children. Duration of interview was classified into four levels. Respondents that were interviewed for not more than five minutes, 5-10 minutes, 11-15 minutes and more than fifteen minutes. Spouse living condition

was classified into two categories, those that were living and those that were not living with their spouse as at the time of interview. Language of interview, both English and Yoruba language were use during the survey. Age was grouped into three age categories; 30-50 years, 51-70 years and 71 years and above. Familiarity with the interviewer was in two categories, those that are familiar with the interviewer and those that are not. Levels of education were categorised into three: (primary, secondary and tertiary).

Call back / number of visit to the respondents is in five levels, some respondents were visited one time, two times, three, four and five times in each wave before they were been contacted for the interview. Sex/ gender, both male and female participated in the survey. House ownership was classified into tenants and owner occupiers. Employment status is in two categories, employed and unemployed respondents. Duration of residence was classified into four categories; 1-5 years, 6-10 years, 11-15 years, 16 years and above. Tribe also is in two categories, Nigerian and non Nigerian. Incidence rates ratios were generated for all level of the response predictors. By taken a level as a reference point, response rates in other levels were compared.

Results

Response and Non Response in Each Wave

The respondents' response to the survey questions varies from wave to wave during the execution of survey. Out of the 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.

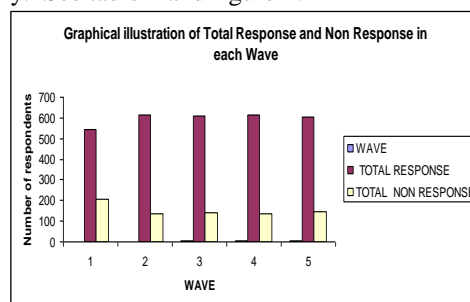


Figure 1: A Multiple Bar Chart Comparing Responses and Non Response from Wave one to wave five in Oyo town. Oyo State. Nigeria.

Response Rate at each level of the Predictors of response

Family size was classified into six categories. Family without children, family with one child, family with two children, family with three children, family with four children and more than four children. The first category was taken as reference level and its incidence rate ratio (IRR) is 1, which was compared with other levels. Any IRR value greater than 1 means higher response rate compared with reference level and value lower than 1 implies low response rate. Response from the family with one child is 27% higher compared with the family without child, response from the family with two, three, four, and more than four children are higher in the following percentages respectively, 56%, 66% 75% and 84%.

Duration of interview was classified into four levels. Respondents that were interviewed for not more than five minutes, 5-10 minutes, 11-15 minutes and more than fifteen minutes. Less than 5 minutes was taken as reference level and this was compared with other levels. The response from those that were interviewed for 5-10 minutes was 23% higher compared with those that were interviewed for less than 5

minutes. Response from 11-15 minutes was 58% higher and response from those that were interviewed for more than 16 minutes was 59% higher compared with those that were interviewed for less than 5 minutes.

Among the respondents, some were living with their spouse and some were not. Non living with the spouse was taken as reference level. From the analysis, the result showed that the response rate from those that were living with their spouse is 14% higher compared with those that were not living with their spouse as at the time of interview.

Both English and Yoruba languages were used during the survey. Yoruba language was taken as reference level. The response from those that were interviewed with English language is 53% higher compared with those that were interviewed with Yoruba language.

The respondents' ages were grouped into three age categories: 30-50, 51-70 and 71 and above years. 30-50 years is the reference age group and the result showed that the responses from the respondents between ages 51-70 years were 94% higher compare with the response from respondents between ages 30-50 and response from the respondents between ages 71 years and above were 12% higher compare with the response from respondents between ages 30-50 (table 2). This implies that respondents at the middle age respond better to survey questions compared with youth and old age respondents.

Some respondents were familiar with the interviewer and some are not. The response rate from those that are familiar with the interviewer is 21% higher compare with those that are not familiar with the interviewer (table 2) the more the familiarity, the higher the response rate. Levels of education were categorised into three; (primary, secondary and tertiary). Primary was used as reference level and the result showed that the response from the respondents with secondary education is 27% higher compared with those with primary education and the response from the respondents with Tertiary education is 54% higher compared with those with primary education. The higher the educational qualification, the higher the response rate.

During the survey, before the interviewer succeeded in getting response from the respondents, some respondents were visited one time, two times, three, four and five times. The response rate increased till fourth visits and at fifth visit, it declined (table 2).The response rate increases from the first to fourth visit, but at the fifth visit the response obtained was 98% lower compared with the first visit.

Both male and female participated in the survey. Female was taken as reference level. The result of the analysis portrayed that response from the female is 15% higher than the response rate from the male.

Majority of the respondents are tenants while minorities are owner occupiers. Being a tenant was taken as reference level. The result from the analysis showed that the response rate from tenants was 7% higher than the owner occupiers.

There is no significant difference in the response rate from unemployed respondents and employed respondents. The number of years in which the respondents have been living in their communities varies. This was classified into four categories; 1-5 years, 6-10 years, 11-15 years, 16 years and above. 1-5 years was used as reference year. The response from those that have been living in their community within 6-10 years is 33% higher compared with the response from those that have been living in their community within 1-5 years. 11-15 years is 58% higher, for more than 15years is 81% higher compared with

the response from those that have been living in their community within 1-5 years. The more the number of years a respondent has spent in his/her community, the more they response to survey questions.

The response from Nigerians is 52% higher compared with Rrsponse from non niogerian.

Conclusion

Females respond better to survey questions than males. The higher the educational qualification, the higher the response rate The response rate from those that were living with their spouse was higher than those that were not living with their spouse. The response from those that were interviewed with English language was higher compared with those that were interviewed with Yoruba language. Respondents at the middle age (50-79 years) respond better to survey questions compared with youth and old age respondents

The response rate from those that are familiar with the interviewer was higher than those that are not familiar with the interviewer. Response rate increased from first visit to fourth visits and at fifth visit, it declined. Response rate from tenants was higher than the owner occupiers. There was no significant difference in the response rate from unemployed respondents and employed respondents. The more the number of years a respondent has spent in his/her community, the more they response to survey questions. The response from Nigerians was higher than that of the non Nigerians.

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Table 1: Total Response and Non Response in each Wave

WAVE	TOTAL RESPONSE	TOTAL NON RESPONSE
1	545 (73%)	205 (27%)
2	615 (82%)	135 (18%)
3	610 (82%)	140 (18%)
4	615 (82%)	135 (18%)
5	605 (81%)	145 (19%)

Table: 2 Incidence rate ratios for various levels of response predictors

Level of family size	Incidence Rate Ratio (IRR)
One	1.27134
Two	1.564931
Three	1.664464
Four	1.75134
More than four	1.844516
Duration of interview	Incidence Rate Ratio (IRR)
1-5 minutes	1.0000
6-10 minutes	1.234665
11-15 minutes	1.581354
More than 15 minutes	1.5866665
Language of interview	Incidence Rate Ratio (IRR)
Yoruba language	1.0000
English language	1.5326667
Age categories	Incidence Rate Ratio (IRR)
30-50 years	1.0000
51-70 years	1.9417225
71-90 years	1.1235789
Familiarity	Incidence Rate Ratio (IRR)
Unfamiliar Respondents	1.0000
Familiar Respondents	1.209975
Level of Education	Incidence Rate Ratio (IRR)
Primary	1.0000
Secondary	1.2712579
Tertiary	1.5419527
Number of visit	Incidence Rate Ratio (IRR)
One visit	1.0000
Two visits	1.0096
Three visits	1.0030435
Four visits	1.002353
Five visits	0.1200002
Sex	Incidence Rate Ratio (IRR)
Female	1.0000
Male	0.854966
House ownership	Incidence Rate Ratio (IRR)
Tenant	1.0000
Owner occupier	0.925
Employment status	Incidence Rate Ratio (IRR)
Unemployed respondents	1.0000
Employed respondents	1.003194
Duration of residence	Incidence Rate Ratio (IRR)
1-5 years	1.0000
6-10 years	1.333665
11-15 years	1.584354
16 years and above	1.814665
Tribe	Incidence Rate Ratio (IRR)
Nigerian	1.0000
Non Nigerian	0.479778