THE EFFICACY OF PLUS-ONE DIALING: SELF REPORTED STATUS

Gary M. Mullet, Sophisticated Data Research, Inc.

INTRODUCTION

As pointed out by Frankel and Frankel (3), the telephone has been an important instrument in collecting survey research data since the advent of what is known as marketing research. They, and others (1,2,4,6,8, and 9, to cite only a few), discuss the relative merits of including, or excluding, those who live in households with unlisted telephone numbers in the survey and/or discuss methodologies for including such individuals, if one deems it desireable.

In the present study a large survey was conducted using the "plus-one" methodology for generating unlisted households (3,6,9) was used. Self reported statistics on whether or not the household's telephone number was published or unpublished were collected and are shown in the present paper.

THE SURVEY

Taking advantage of the efforts of those who have concluded that an effort should be made to include those in households with unlisted telephone numbers (1,2,4, among others), the sample included respondents from seventeen different metropolitan areas. Telephone numbers were generated using the plus-one methodology and were purchased from a commercial supplier of such numbers. Prior to the incrementing, the original randomly selected directory listings were screened for business listing and multiple number households. A one was added to the last digit of all resulting telephone numbers that were between zero and eight, inclusive; nine was subtracted if the last digit was a nine. Thus, a sampled number of 123-4567 would be incremented to 123-4568; if the original number was 999-9999, 999-9990 would be dialed.

The survey itself was a large scale media ratings study, conducted only on those who answered non-business telephones (call backs were used, but that fact is not an issue here). Using a slightly modified random family member methodology (5,7), one household member of age twelve or older was interviewed. At the end of the interview, respondents were asked "Is this telephone number listed in the current telephone directory or available through information, or not?" The results shown below are for metropolitan areas which are not exactly coincident with SMSA's but are nonetheless useful.

THE RESULTS

Table 1, on the next page, shows the seventeen metropolitan areas surveyed, the number completed interviews, and the self-reported listed, unlisted and don't know/refused percentages for the telephone number.

DISCUSSION

Numbers or percentages of unlisted household telephones in various areas are difficult, if not impossible to obtain. In fact, obtaining reasonable and consistent estimates of the percentage of telephone households, per se, is in itself difficult. Glasser and Metzger (4) report telephone penetration by region, as does Tyebjee (9).

Even these differ, in some regions, by several percentage points. Nationally, it is (slightly over), estimated that in 1970, 92% of all households had telephones and as of December 31, 1978, this number was 97%. This rather long preamble indicates that there is much volatility in the estimated number of telephone households nationally and regionally and, hence, undoubtedly the same volatility would exist in the number and percentage of unlisted telephone households on a city-by-city basis. Thus, no attempt will here be made to compare the above results with other previously published estimates.

Even given the above caveat, the results are intuitively satisfying. Los Angeles is known (by the ubiquitous they) to have a high percentage of unlisted telephone households; conservative Minneapolis would be expected to have a relatively low percentage. There is also a high positive correlation between percentage of reported unlisted households and population of the SMSA (r_s =.7132, $p < .001$).

The don't know/refusals also are valuable in that they point to an overall cooperative attitude on the part of respondents. It is suspected that these numbers would be smaller if such a survey were done among adults, since many in the early teen years genuinely do not know whether their household telephone is listed or not. It also is conjectured that a disproprotionate number of the refusals are from those with unlisted numbers.

SUMMARY AND CONCLUSIONS

Although it was not the primary purpose of the survey, the above study indicates that plus-one dialing is an efficient method for generating telephone contacts with households with unlisted telephone numbers. The degree of willingness to share the listed/unlisted status with the interviewer was also very high. In fact, the estimated standard errors of the sampling distributions of the percentage of unlisted phones were all between .76% and 1.15%. If one does deem it necessary to include this type of household in their surveys, plus-one dialing is certainly a viable methodology, as the above data conclusively illustrates.

ACKNOWLEDGEMENT

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TABLE I

Area	Completed interviews	Listed	Unlisted	DK/Ref.
Atlanta	1141	73.1	16.6	10.3
Boston	1530	78.2	19.6	7.2
Chicago	2647	58.8	32.3	8.9
Cincinnati	1266	70.3	19.4	10.2
Cleveland	1347	69.3	19.7	10.9
Dallas	1543	73.8	20.4	5.8
Denver	1313	67.6	20.5	11.9
Detroit	1810	63.7	30.1	6.2
Houston	1311	71.2	22.5	6.3
Los Angeles	2997	56.9	34.9	8.2
Miami	1490	65.2	26.1	8.7
Minneapolis	1242	77.3	9.8	12.9
New York	3612	61.9	30.9	7.2
Philadelphia	1898	63.9	30.3	5.8
Pittsburgh	1258	73.2	17.3	9.5
St. Louis	1234	65.4	20.1	14.4
San Francisco	2108	63.2	29.5	7.3
	29,747	65.9	25.6	8.5