Appendix B

Spring
National Omnibus
Survey Research Center
Study #1312
Survey Methods Report

(Revised 1/5/98)

Survey Research Center
University Of Maryland
SAMPLE DESIGN

The target population for the National Omnibus study was adults age 18 or older, residing in telephone households in the 48 contiguous states. The sample was selected from Random Digit Dial (RDD) dual frames. The frames consisted of a list-assisted frame used in conjunction with a standard Mitofsky-Waksberg frame.

In list-assisted samples, all possible area code exchange banks of numbers are checked for the inclusion of any listed (published) telephone numbers. If a bank contains any listed residential numbers, the entire bank is included in the frame. A simple random sample of possible telephone numbers is then selected from the frame. It has been found that a very high percentage of all residential telephone numbers (whether published or not) are in such banks. This frame provides three advantages over other RDD methods: 1) it provides a high hit rate of residential numbers, 2) it avoids the design effects of clustering and 3) it simplifies field administration. The majority of the sample (99%) was selected from this frame.

The one disadvantage of the list-assisted frame is that there is a small proportion of residential telephones in banks which do not have any listed numbers. These residences are excluded from the list-assisted frame. To address this under-coverage problem, a second frame
was used. This was a standard Mitofsky-Waksberg sampling frame.\(^1\) The random digit dial (RDD) sample was selected using a standard two-stage, Mitofsky-Waksberg design. This design gives all households a chance of inclusion in the survey, regardless of whether or not their phone number is listed. This Mitofsky-Waksberg sample is selected in such a way as to avoid overlap with the list-assisted frame. Thus, when the these independent samples are combined, simple (rather than dual frame) estimation can be used.

The combination of these two frames provides an economical method to give every residential telephone number a known probability of selection. Within each sample household, the target respondent was selected at random from among all adults residing there using the “Next Birthday” selection method. In this procedure, the interviewer asks to interview the adult, age 18 or older, who will have the next birthday. This method avoids the bias of selecting whomever answers the phone or happens to be home at the time of the call. It provides a random respondent without having to ask intrusive questions about household composition.

**QUESTIONNAIRE DEVELOPMENT AND DATA COLLECTION**

Pretests of the questionnaire took place in June, 1997. There was a mix of experienced and newly recruited interviewers selected for the pretest. Experienced interviewers are best able to identify characteristics of the study which could pose potential problems. However, less experienced interviewers are often more likely to notice additional problems that may have been

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\(^1\)The sample frame was the Bell-core list of all working area code - prefix combinations.
naturally compensated for, or dealt with, by the more experienced interviewers.

In the pretest training, interviewers were given an outline of standard pretest procedures and specific items to be aware of such as:

- Respondent reaction to the survey introduction
- Any issues regarding selecting the random respondent
- Identifying question wording which is ambiguous or awkward to read
- Inconsistencies in question logic
- Respondents' comments about questions (to be recorded verbatim)
- Inconsistencies in skip patterns

Following each pretest, the project coordinator met with the interviewers and supervisors who reviewed problems encountered and made suggestions for improvements in the questionnaire. Based on the pretest results, the final version of the questionnaire was developed.

Prior to main data collection, group training sessions were conducted. The training sessions provided information on the background and goals of the study. This included:

- Purpose of the study
- Sponsor and project director
- Eligible respondent
- Goals of the study
- Target cooperation rate
- Schedule
- Refusal conversion plans

The interviewers were trained in procedures used in identifying the correct respondent. This entailed problem solving exercises in addition to written instructions. The supervisors coached each interviewer by asking questions that a respondent might ask.
A major part of the training involved persuading reluctant respondents to cooperate. The training manual contained suggested responses to a number of questions frequently asked by reluctant respondents. The supervisors assumed the role of respondent in this exercise. This practice continued until all interviewers could handle these situations comfortably and correctly.

The next stage of the training required interviewers to go through the questionnaire noting the question-by-question instructions and skip patterns. Interviewers read the survey instrument repeatedly to supervisors in order to familiarize themselves with the questionnaire and to learn how to pace the interview correctly. Finally, interviewers worked in pairs, with one interviewer acting as the respondent. Then, the pair reversed roles, providing an opportunity for both to act as the interviewer.

During data collection, interviewers were monitored from the onset of the study to its completion. Supervisors regularly monitored each interviewer's calls and rated them on:

- Introduction and respondent selection
- Properly administering the questionnaire (reading the questions verbatim, probing, keeping respondents on track)
- Correctly recording the respondents' answers
- Refraining from personal comments

In addition to monitoring, the Field Manager received daily reports on each interviewer's response rate and refusal rate. Interviewers who experienced difficulties were retrained by a supervisor. If there was no improvement by the interviewer after the retraining, the interviewer was removed from the study.

An experienced telephone supervisor was on duty at all times to monitor quality and handle any problems. Interviewing shifts were scheduled both during the day, in the evenings,
and on weekends. All telephone numbers in the sample were called up to 20 times. Most respondents who initially refused were recontacted by a specialist in refusal conversion. These experienced interviewers converted 35 percent of those who were recontacted. Interviewing conducted from the SRC Telephone Center on the College Park, MD occurred from July 3, 1997 to September 27, 1997. Interviewing conducted from the Survey Research Laboratory on the Virginia Commonwealth University campus, Richmond, VA took place from October 10, 1997 to November 17, 1997. The Survey Research Laboratory has similar facilities and training procedures as does SRC. The Survey Research Laboratory completed 197 of the interviews on the National Omnibus project, with SRC completing 775.

**SURVEY RATES AND RESULTS**

A sample of 3,836 telephone numbers was generated. Of these, 1,766 were identified as households. Of these households, 55% agreed to the interview, 27% refused, 11% were non-contacts, and the remaining 8% were miscellaneous problems such as respondent illness and non-English language-speaking households. The cooperation rate reflects the percent of those households contacted that agreed to the interview.\(^2\) The cooperation rate for this study was 67.2%. A total of 972 interviews was completed. The sample results are summarized in Table 1.

\(^2\) Cooperation rate = Completed interviews / (completed interviews + refusals + partial interviews).
### Table 1
General Population Final Sample Disposition

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>3,836</td>
</tr>
<tr>
<td>Non-households</td>
<td>1,761</td>
</tr>
<tr>
<td>Households status (unknown)</td>
<td>309</td>
</tr>
<tr>
<td>Households</td>
<td>1,766</td>
</tr>
<tr>
<td>interviews</td>
<td>972</td>
</tr>
<tr>
<td>refusals</td>
<td>469</td>
</tr>
<tr>
<td>non-contacts</td>
<td>189</td>
</tr>
<tr>
<td>problems</td>
<td>136</td>
</tr>
<tr>
<td>Cooperation Rate (Interviews/Interviews + Refusals)</td>
<td>67.2%</td>
</tr>
<tr>
<td>Response Rate (Interviews/Eligible Respondents)</td>
<td>55%(^3)</td>
</tr>
</tbody>
</table>

**SAMPLE WEIGHTS**

Two design-level sample weights are necessary for the correct analysis of the sample. First, since every telephone number had an equal probability of selection into the sample, those

\(^3\)An estimate of the number of eligible households among those for whom eligibility could not be obtained is:

Unidentified Eligibles = \((1,766/(1,766+1761)\times 309)=155\)

A more conservative response rate would then be \(R=972/(1,766+155)=50.60\%\)

households with more than one telephone number had higher chances of inclusion. A question was asked to determine how many non-business telephone numbers each household had. This item was used to construct the first weight. Secondly, since only one adult was selected from among all adults in the household, a weight is necessary to adjust for household size.

In addition to the design weights, we felt it advisable to post-stratify on several demographic variables: sex, age, education, race, and region. These variables differ from true population values due to varying cooperation rates. The effect of weighing by sex, age, education, race, and region is to adjust the sample distribution to match population proportions based on census data.4

For user convenience, the two design weights and the post-stratification weights have been combined into one overall weight called WEIGHT (WT). All frequencies provided are appropriately weighted.

**STANDARD ERRORS**

The list-assisted sample is essentially a simple random sample. However, the Mitofsky-Waksberg sampling design is not a simple random sampling procedure. Therefore, standard errors that assume a simple random sample are not accurate. To estimate standard errors we have estimated the design effect in this combined list-assisted two-stage cluster design. Since most of the interviews (99%) are from the list-assisted frame, the effect of the Mitofsky-Waksberg stratum is to slightly increase the overall sampling variance. The square root of the design effect

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multiplied by the standard errors (for simple random sampling) yields the correctly estimated standard error. Table 2 shows the estimated standard errors for this study at the 95% confidence level.

<table>
<thead>
<tr>
<th>P(or 1-p)</th>
<th>0.5</th>
<th>0.6</th>
<th>0.7</th>
<th>0.8</th>
<th>0.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size (n)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>25</td>
<td>0.233</td>
<td>0.228</td>
<td>0.214</td>
<td>0.187</td>
<td>0.140</td>
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<tr>
<td>50</td>
<td>0.165</td>
<td>0.162</td>
<td>0.151</td>
<td>0.132</td>
<td>0.099</td>
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<tr>
<td>100</td>
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<td>0.114</td>
<td>0.107</td>
<td>0.093</td>
<td>0.070</td>
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<tr>
<td>200</td>
<td>0.082</td>
<td>0.081</td>
<td>0.076</td>
<td>0.065</td>
<td>0.050</td>
</tr>
<tr>
<td>300</td>
<td>0.068</td>
<td>0.065</td>
<td>0.062</td>
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<tr>
<td>400</td>
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<td>0.057</td>
<td>0.054</td>
<td>0.046</td>
<td>0.035</td>
</tr>
<tr>
<td>500</td>
<td>0.052</td>
<td>0.051</td>
<td>0.048</td>
<td>0.042</td>
<td>0.031</td>
</tr>
<tr>
<td>600</td>
<td>0.048</td>
<td>0.046</td>
<td>0.044</td>
<td>0.038</td>
<td>0.029</td>
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<tr>
<td>700</td>
<td>0.044</td>
<td>0.043</td>
<td>0.040</td>
<td>0.036</td>
<td>0.026</td>
</tr>
<tr>
<td>800</td>
<td>0.042</td>
<td>0.040</td>
<td>0.038</td>
<td>0.033</td>
<td>0.025</td>
</tr>
<tr>
<td>900</td>
<td>0.039</td>
<td>0.038</td>
<td>0.036</td>
<td>0.031</td>
<td>0.024</td>
</tr>
<tr>
<td>1000</td>
<td>0.037</td>
<td>0.036</td>
<td>0.033</td>
<td>0.030</td>
<td>0.023</td>
</tr>
</tbody>
</table>