Appendix B – State Sample Sizes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **State Sample Sizes** | **Oversample Ratio 'k'** | **Proportion of Households with Children from  2014 ACS 'P'** | **Total  Sample** | **Stratum 1  Sample (Admin Flag  for HHLD  w/Children)** | **Stratum 2  Sample (Admin Flag  for HHLD  w/o Children)** |
| Alabama | 5.4 | 23.0% | 7,827 | 4,636 | 3,191 |
| Alaska | 3.8 | 26.8% | 8,468 | 4,099 | 4,369 |
| Arizona | 5.4 | 23.7% | 7,553 | 4,486 | 3,067 |
| Arkansas | 4.9 | 24.1% | 7,965 | 4,576 | 3,389 |
| California | 5.3 | 29.8% | 6,407 | 4,264 | 2,142 |
| Colorado | 5.8 | 26.5% | 6,549 | 4,122 | 2,427 |
| Connecticut | 6.7 | 24.8% | 6,526 | 4,361 | 2,164 |
| Delaware | 6.8 | 23.1% | 6,890 | 4,552 | 2,338 |
| District of Columbia | 7.2 | 17.1% | 8,439 | 4,970 | 3,468 |
| Florida | 6.5 | 19.9% | 8,035 | 4,938 | 3,097 |
| Georgia | 4.7 | 27.7% | 7,238 | 4,469 | 2,769 |
| Hawaii | 3.4 | 26.4% | 9,490 | 3,524 | 5,966 |
| Idaho | 5.4 | 26.6% | 6,812 | 4,205 | 2,607 |
| Illinois | 6.3 | 25.8% | 6,573 | 4,428 | 2,146 |
| Indiana | 6.4 | 25.6% | 6,542 | 4,425 | 2,117 |
| Iowa | 7.9 | 25.2% | 5,938 | 4,238 | 1,700 |
| Kansas | 6.7 | 26.5% | 6,318 | 4,401 | 1,918 |
| Kentucky | 5.2 | 25.1% | 7,380 | 4,410 | 2,969 |
| Louisiana | 4.7 | 24.9% | 8,057 | 4,841 | 3,216 |
| Maine | 8.3 | 17.4% | 7,385 | 4,484 | 2,901 |
| Maryland | 6.1 | 26.6% | 6,511 | 4,363 | 2,148 |
| Massachusetts | 7.3 | 24.5% | 6,237 | 4,253 | 1,984 |
| Michigan | 8.6 | 22.7% | 6,205 | 4,423 | 1,782 |
| Minnesota | 8.3 | 24.8% | 5,871 | 4,217 | 1,654 |
| Mississippi | 4.6 | 25.9% | 7,856 | 4,663 | 3,193 |
| Missouri | 6.4 | 23.6% | 6,940 | 4,512 | 2,427 |
| Montana | 6.4 | 20.4% | 7,605 | 4,352 | 3,253 |
| Nebraska | 6.8 | 26.6% | 6,071 | 4,147 | 1,925 |
| Nevada | 4.8 | 24.1% | 8,031 | 4,466 | 3,565 |
| New Hampshire | 7.9 | 21.6% | 6,460 | 4,243 | 2,217 |
| New Jersey | 6.0 | 26.9% | 6,447 | 4,247 | 2,200 |
| New Mexico | 4.4 | 23.8% | 8,582 | 4,345 | 4,237 |
| New York | 4.8 | 24.2% | 7,918 | 4,307 | 3,612 |
| North Carolina | 5.6 | 24.4% | 7,215 | 4,448 | 2,766 |
| North Dakota | 5.8 | 24.1% | 7,038 | 4,151 | 2,887 |
| Ohio | 7.5 | 24.2% | 6,402 | 4,497 | 1,905 |
| Oklahoma | 4.5 | 25.8% | 7,908 | 4,490 | 3,418 |
| Oregon | 7.0 | 24.0% | 6,414 | 4,224 | 2,190 |
| Pennsylvania | 7.7 | 22.7% | 6,461 | 4,391 | 2,070 |
| Rhode Island | 6.8 | 23.3% | 6,713 | 4,359 | 2,354 |
| South Carolina | 6.0 | 22.5% | 7,543 | 4,694 | 2,849 |
| South Dakota | 5.5 | 23.7% | 7,441 | 4,381 | 3,059 |
| Tennessee | 5.4 | 25.1% | 7,241 | 4,500 | 2,741 |
| Texas | 4.1 | 30.7% | 7,132 | 4,254 | 2,878 |
| Utah | 4.4 | 35.2% | 6,126 | 4,081 | 2,045 |
| Vermont | 7.1 | 19.8% | 7,151 | 4,105 | 3,045 |
| Virginia | 6.0 | 26.8% | 6,513 | 4,314 | 2,199 |
| Washington | 6.2 | 25.4% | 6,583 | 4,269 | 2,314 |
| West Virginia | 5.0 | 20.3% | 9,116 | 4,165 | 4,952 |
| Wisconsin | 8.0 | 23.7% | 6,136 | 4,267 | 1,869 |
| Wyoming | 4.8 | 24.1% | 7,894 | 4,193 | 3,701 |
| Total |  |  | 364,153 | 222,750 | 141,402 |
| Proportion by Strata |  |  |  | 61.2% | 38.8% |

Calculations for State Sample Sizes

The oversampling factor (k) was calculated so that the sampling variance ‘R’ = 1.06, this gives the maximum k (and largest sample from stratum 1) without increasing the variance too much beyond that of a proportional stratified design of a similar cost.

(P) is the proportion of households with children based on the 2014 ACS estimates.

The portion of the sample coming from each stratum was calculated using the oversample rate (k) and the portion of all households in each stratum (W1 and W2). These estimates were then used with the prevalence of households with children in each stratum (P1 and P2) to get the percent of the sample expected to have children.

We then assumed the following:

* 89% of the addresses would be valid
  + 45% of the valid addresses would respond and be screened with the web instrument
    - 95% of those screened and with children would complete a web topical interview
  + 55% of the valid addresses would fail to respond to the web instrument and be screened by mail
    - 25% of those would complete a mail screener
      * 25% of those with children would complete a mail topical interview

Using this response information, along with the percent of the sample expected to have children in each state, we calculated the sample size needed to get 1500 topical interviews in each state.

For example, in Alabama:

The oversampling rate (k) was recalculated to be 5.4, for an R = 1.06.

Using the ACS x NSCH Flag tabulations:

|  |  |  |  |
| --- | --- | --- | --- |
|  | NSCH Administrative Flag for Household with Children | NSCH Administrative Flag for Household without Children | Proportion of All Households with children from 2014 ACS |
| 2014 ACS Household with Children | 71.9% (P1) | 9.9% (P2) | 21.2% (W1) |
| 2014 ACS Household without Children | 28.1% | 90.1% | 78.8% (W2) |

The portion of the sample coming from stratum 1 was estimated to be (k\*W1)/(W2 + k\*W1) = 59.2% and the portion of the sample from stratum 2 was 40.8%.

Within our sample we expect 71.9%\*59.2% + 9.9%\*40.8% = 46.6% to have children.

For the web topicals, we expect to get an interview from 89%\*45%\*95% = 38%.

For the mail topicals, we expect to get an interview from 89%\*55%\*25%\*25% = 3.06%.

So from the total we can expect a response of 38%+3.06% = 41.06%.

Now we take the target of 1500 interviews and adjust for the expected response and the percent of the sample with children to get the state sample size: 1500\*(41.06%)-1\*(46.6%)-1 = 7839.

Now n1 = 59.2%\*7839=4641 and n2 = 40.8%\*7839 = 3198.

(Numbers here are slightly different from the spreadsheet due to rounding.)