Evaluation of the 2008 Exit Poll Design Effect

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Abstract

For the 2008 election exit poll it is impossible to select a simple random sample of voters. Consequently, a cluster sample is required in this instance. In surveys that employ complex cluster sample designs the standard errors are almost always larger than those from a simple random sample. Furthermore, standard errors from individual questions from the questionnaire are often larger depending on the clustering effect for that question. This evaluation will present the standard error from the exit poll questions asked during the 2008 election exit poll assuming a simple random sample. The standard error will then be recalculated for these questions by applying the design effect. Presented here will be the final design effect for the 2008 election exit poll for each of the states using questions from the questionnaire. To complement these results the design effects are compared to previous exit polls from the 2004 general election. The process for calculating the design effect for the election exit poll incorporates the delete-1 jackknife. This paper presents a procedural discussion of the calculation of the design effect and also presents an alternative approach on how the design effect can be calculated for exit polls.

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1 Introduction

An evaluation of the 2004 and 2006 general election exit indicated that the appropriate design effect (*DEFF*) for 2008 would be 2.25 (or *DEFT=1.5*). This value is available in the exit poll sampling methodology statements provided by Edison Research. This DEFT value works well as a general catch-all number, particularly for national samples. However, the discussion presented here will focus on the issue of the design effect relating to individual states and individual questions from the questionnaire specifically from the 2008 general election exit poll.

To establish a consistent comparison from state to state a group of similar questions that appear in each state are used in this analysis. To facilitate this the group of questions come from the national questionnaire. Furthermore, to investigate the design effect in more detail the design effect for each response level in the group of questions is measured against the presidential Democratic vote (Barack Obama in 2008).

The design effect can be vastly different from question to question (including combination of questions), from state to state, and from election to election. The current design effect of 2.25 (DEFT of 1.5) in many instances is oversimplified and does not work for highly clustered variables. Even though the method statement indicates "If the characteristic is concentrated in a few precincts the sampling error will be larger" this can lead to a false confidence in the accuracy of the estimate.

2 Methods

2.1 Sample Design

The National Election Pool (NEP) Exit Poll conducted by Edison Research can be generally described as a stratified, two-stage cluster design. The strata are geographically determined where the primary sampling units (PSU) are the precincts and the secondary sampling units (SSU) are

the randomly selected voters. These voters within the PSUs are selected at a random systematic interval. Unlike Election Day voters absentee voters are sampled using a telephone survey. Consequently, the overall variance contains two variance components: one for the absentee sample and a one for Election Day sample.

A design effect can be computed for any combination of variables. The design effects presented here are for the Democratic Presidential vote (Obama) and the age, race, sex, and party ID categories (i.e. there is a design effect for age 18-24 and Democratic vote, a design effect for age 25-29 and Democratic vote, etc.).

2.2 Standard Error and Design Effect

For this analysis the delete-1 jackknife is used to calculate the variance of the complex design used in the exit poll. Because of the complex stratified design the jackknife approach is applied to each stratum and the jackknife variance estimate is calculated as:

$$\hat{V}_{JK}\left(\hat{\theta}\right) = \sum_{g=1}^{G}\left[\frac{n_g - 1}{n_g} \cdot \sum_{j=1}^{n_g}\left(\hat{\theta}_{g,(j)} - \hat{\theta}\right)^2\right]$$

This analysis uses $\hat{\theta}$ as the Election Day weighted proportion of each characteristic. The estimate of $\hat{\theta}_{g,(j)}$ is the reweighted estimate excluding all respondents from the jth PSU.

The approach used here is to calculate an overall statewide design effect for a specific question. The square root of this design effect is then determined for each state (s) and question (q) within the state. Using n PSUs and m observations we can calculate the DEFT (square root of DEFF) as:

$$DEFT_{s,q} = \frac{SE_{JK}\left(\hat{p}\right)_{s,q}}{\sqrt{\dfrac{\hat{p}_{s,q} \cdot \left(1 - \hat{p}_{s,q}\right)}{m_{s,q}}}}$$

A weighted variance of the estimate, $\hat{p}$, is determine by combining the variance of Election Day voters with the variance of absentee voters.

$$VAR\left(\hat{p}\right) = \left[\frac{m_{xp}}{m_{xp}+m_{abs}}\right]^2 \cdot \left[V_{xp}\left(\hat{p}\right) \cdot DEFF\right] + \left[\frac{m_{abs}}{m_{xp}+m_{abs}}\right]^2 \cdot \left[V_{abs}\left(\hat{p}\right)\right]$$

The standard error of $\hat{p}$ is:

$$SE\left(\hat{p}\right) = \sqrt{VAR\left(\hat{p}\right)}$$

2.3   Survey Weighting

On Election Day and shortly after Election Day the respondent weights are adjusted to match what are known as the 'how voted' questions. In other words, the weights are adjusted in such a way that the combined Election Day sample and absentee sample weights will indeed match the actual result. For this discussion the common 'how voted' question is whether the respondent voted for Barack Obama or John McCain.

To estimate the variance using the sample design for the 2008 exit poll the delete-1 jackknife method is used to create n pseudo samples. The respondent weights for each pseudo sample are re-adjusted and forced to match the final presidential Election Day vote. For states where an absentee survey exists the absentee voters and absentee survey respondents are omitted and the weights for the remaining Election Day respondents are used. Consequently, because of the re-adjustment the variance on the marginal estimates for the presidential question will have a variance of zero (0).

Additionally, anything correlating with the presidential vote question will have a smaller standard error.

3   Jackknife Results

Two sets of tables are provided here. The first set of tables provide the delete-1 jackknife variance estimates of the question marginals. The second set of tables provide the delete-1 jackknife variance estimates of the cells for a cross tabulations of the question with the presidential vote question. For each table the average state-wide design effect for that category is given. In addition to the state samples there is a subsample of national precincts. The design effect for the Obama Presidential vote for that sample is also given for the 2008 presidential general election and compared to the design effect from the 2004 John Kerry presidential vote.

Ultimately the design effect recommended after the 2004 General Election is still a very good catch-all number to use nationally regardless of whether it is applied to the marginals or the cross tabulations. However, this is not necessarily the case when individual states are being evaluated. Consequently, it is important to use a more accurate DEFT for that state and for the question of interest. The tables listed here provide the DEFT for Age, Race, Sex, and Party ID. These DEFTs are then calculated for those voting for the Democratic Presidential candidate (Barack Obama).

The data for voter age shows that the ranges (maximum minus minimum for all states) of the DEFT for all age categories are very similar. The mean for any category ranges from 1.1 to 1.5 and the maximum value for any state in any age category is 2.8 (Maryland, Age 75+).

The data for the race of the voter indicates that there is a greater clustering effect for minority groups, namely Hispanics and American Indians. The mean DEFT across the 46 states analyzed for each racial group is White: 1.8, Black: 1.5, Hispanic: 2.2, Asian: 1.4, American Indian: 2.6,

Table 1: DEFT for Marginal AGE of Voter Response

State	18-24	25-29	30-39	40-44	45-49	50-59	60-64	65-74	75+
AL	3.2	1.3	1.1	1.3	1.8	1.3	1.4	1.6	1.3
AZ	1.5	1.2	1.6	1.1	1.0	1.3	1.9	1.8	3.0
AR	1.2	1.2	1.3	1.0	0.9	0.9	1.2	1.4	1.5
CA	1.4	1.4	1.4	1.1	1.3	1.1	1.4	1.5	1.7
CT	1.3	1.2	1.2	0.8	1.0	1.1	1.5	1.3	1.3
DE	1.5	1.3	1.5	1.4	1.0	1.1	1.4	1.1	1.2
FL	1.8	1.4	1.8	1.3	1.2	1.4	1.9	2.9	2.4
GA	0.8	1.4	1.6	1.3	1.0	1.2	1.7	1.4	1.5
ID	2.0	1.2	1.5	0.9	0.8	1.0	1.4	1.6	0.9
IL	1.2	0.9	1.2	0.9	1.4	1.1	1.2	1.3	1.5
IN	1.4	1.5	1.5	1.4	1.2	1.1	1.4	1.4	1.3
IA	3.0	1.2	1.6	1.3	1.0	1.3	1.3	1.7	1.5
KS	1.1	0.9	1.2	1.0	0.9	0.7	1.2	0.9	1.9
KY	1.0	1.1	1.2	1.0	1.1	1.1	1.3	1.4	1.2
LA	1.2	1.4	1.5	0.9	1.4	1.3	1.4	1.1	1.5
ME	2.1	1.3	1.3	1.1	1.3	1.2	1.5	1.4	2.0
MD	0.8	1.3	1.3	1.2	1.1	1.2	0.9	1.2	2.0
MA	1.0	2.0	1.3	1.0	0.8	1.3	1.0	1.0	1.9
MI	1.7	1.2	1.2	1.2	0.9	1.2	1.5	1.8	1.3
MN	1.9	1.8	1.2	1.0	1.2	1.1	1.2	1.3	1.6
MS	1.3	1.0	1.3	1.1	1.0	1.3	1.6	0.9	1.8
MO	1.2	1.3	1.3	1.1	1.1	1.1	1.5	1.4	1.4
MT	2.2	1.7	1.6	0.8	1.2	1.3	1.4	1.6	2.0
NE	0.8	1.5	1.3	0.9	1.0	1.3	1.4	1.2	1.5
NV	1.1	1.6	1.4	1.1	1.3	1.2	1.5	1.4	1.4
NH	1.7	1.3	1.2	1.0	1.3	1.0	1.1	1.7	1.7
NJ	1.5	1.6	1.8	1.3	1.2	1.3	1.1	1.9	4.1
NM	1.8	1.2	1.3	1.2	1.2	1.2	1.5	1.3	2.2
NY	1.4	1.4	1.6	1.1	1.2	1.4	1.2	1.4	1.2
NC	2.1	1.4	1.2	1.4	1.1	1.4	1.5	1.4	1.8
ND	2.2	1.5	1.0	1.1	1.5	1.2	0.8	1.7	1.9
OH	1.3	1.4	1.3	1.0	1.1	1.2	1.2	1.3	1.4
OK	1.0	1.2	1.4	1.3	1.5	1.2	1.0	2.0	1.2
PA	1.2	1.4	1.5	1.6	1.2	1.2	1.2	1.3	1.7
RI	2.1	1.1	1.0	0.9	1.0	1.0	1.1	1.6	1.5
SC	1.5	1.2	1.9	1.2	1.2	1.0	0.9	1.5	1.7
SD	2.2	1.8	1.3	0.9	1.1	1.4	1.3	1.4	1.7
TN	1.4	1.2	1.2	1.4	0.7	0.8	1.2	1.6	1.2
TX	1.3	1.6	1.4	1.1	1.5	1.2	2.1	1.6	2.2
UT	1.2	1.5	1.2	1.3	1.0	1.3	1.1	1.1	1.6
VT	1.9	1.4	1.4	0.9	1.1	1.4	1.6	1.9	1.7
VA	1.4	1.7	1.1	1.3	1.2	1.3	1.3	1.4	1.6
WV	1.0	1.2	1.1	1.0	1.0	0.9	1.1	1.2	0.9
WI	1.7	1.6	1.3	1.1	1.3	1.2	1.1	1.7	1.0
WY	1.9	1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.2

Table 2: DEFT for Marginal RACE of Voter Response

State	White	Black	Hispanic	Asian	American Indian	Other
AL	1.0	1.2	0.8	2.0	1.0	0.8
AZ	2.5	2.1	1.8	0.8	3.9	1.5
AR	3.1	3.5	1.6	1.0	0.9	1.4
CA	3.7	2.8	2.7	3.8	1.0	1.4
CT	2.5	2.2	1.6	0.9	0.7	0.7
DE	2.3	2.4	1.2	1.0	0.7	1.1
FL	3.9	3.9	3.8	1.8	1.3	1.1
GA	2.2	2.4	0.9	1.1	1.1	1.3
ID	2.0	1.3	2.2	1.0	1.6	1.0
IL	3.3	3.7	2.3	1.4	1.0	0.8
IN	2.8	3.1	1.9	0.8	1.0	1.1
IA	2.9	3.3	1.1	1.1	1.1	1.0
KS	1.7	1.3	1.3	1.3	0.7	0.8
KY	3.6	4.0	1.6	1.0	1.1	1.1
LA	2.1	2.4	1.2	1.3	1.2	1.0
ME	1.4	1.0	1.1	0.9	1.2	1.2
MD	2.6	3.0	1.3	1.2	1.1	1.0
MA	2.8	2.3	1.4	2.4	2.2	1.2
MI	3.2	3.3	1.3	1.4	3.0	1.5
MN	2.3	1.6	1.4	1.5	3.9	1.2
MS	1.1	1.2	1.2	1.1	1.0	0.9
MO	3.3	3.7	1.5	1.0	1.3	1.1
MT	2.0	0.9	1.4	1.4	2.3	1.0
NE	1.7	2.1	0.9	0.8	1.2	1.0
NV	2.2	1.9	2.2	1.4	1.3	1.4
NH	1.6	1.2	1.4	1.3	1.5	0.9
NJ	3.1	3.3	1.9	2.0	1.1	1.4
NM	3.2	1.4	3.3	1.1	5.8	1.2
NY	4.1	4.4	1.5	1.5	1.2	1.1
NC	2.6	2.9	1.5	1.8	1.0	1.1
ND	2.4	1.7	0.8	0.9	2.9	0.8
OH	3.6	4.1	1.7	1.4	0.9	1.0
OK	1.6	2.1	1.1	0.7	1.1	0.8
PA	3.6	4.0	2.2	1.1	0.8	1.3
RI	2.8	2.6	1.5	1.1	1.1	1.6
SC	2.9	2.9	1.0	0.8	0.8	0.9
SD	3.9	0.8	1.0	0.9	4.4	1.2
TN	3.0	3.2	0.9	0.8	1.0	0.7
TX	2.8	2.5	3.6	1.2	1.0	1.2
UT	0.8	0.8	1.2	1.1	1.4	1.1
VT	1.5	NA	2.0	1.0	1.6	1.7
VA	2.5	2.9	1.9	1.8	1.0	1.1
WV	1.0	0.8	0.9	1.1	0.8	0.9
WI	3.3	3.9	1.3	1.2	1.7	1.1
WY	1.7	1.0	1.7	1.1	1.8	1.6

Table 3: DEFT for Marginal PARTY ID of Voter Response

State	Democrat	Republican	Independent	Something Else
AL	1.0	1.1	1.2	1.0
AZ	1.9	1.5	1.3	1.0
AR	1.4	1.3	1.4	1.2
CA	1.3	1.0	1.2	1.1
CT	1.4	1.1	1.3	0.8
DE	1.4	0.8	1.3	1.0
FL	1.8	1.4	1.6	0.9
GA	1.0	1.1	1.3	1.1
ID	0.9	0.8	0.8	1.0
IL	1.8	1.3	1.5	1.2
IN	1.4	1.3	1.3	1.1
IA	1.3	1.2	1.4	1.1
KS	0.6	1.0	1.0	1.0
KY	1.8	1.4	1.4	1.0
LA	1.5	1.2	1.2	1.1
ME	1.5	1.3	1.2	1.1
MD	0.8	0.9	1.3	1.0
MA	1.4	1.0	1.3	0.8
MI	1.2	1.2	1.3	1.1
MN	1.0	0.9	1.0	1.2
MS	1.3	1.4	1.5	1.3
MO	1.1	1.2	1.3	1.3
MT	0.9	1.0	1.1	1.3
NE	1.2	1.0	1.1	0.9
NV	1.2	1.1	1.1	1.4
NH	1.0	1.0	1.3	1.4
NJ	1.4	1.2	1.6	0.9
NM	1.5	1.4	1.4	1.3
NY	1.3	1.1	1.3	1.0
NC	1.6	1.0	1.6	1.0
ND	0.9	1.2	1.5	1.3
OH	1.4	1.2	1.4	1.0
OK	2.1	1.7	1.6	1.1
PA	1.4	1.3	1.3	1.3
RI	1.7	1.5	1.9	0.9
SC	1.3	0.9	1.3	0.8
SD	1.2	1.2	1.0	0.9
TN	1.1	1.2	1.0	1.0
TX	1.4	1.2	1.7	1.0
UT	0.6	1.0	1.2	0.9
VT	1.1	1.1	0.9	1.2
VA	1.3	1.1	1.6	1.2
WV	1.6	1.4	1.3	1.1
WI	1.2	0.9	1.0	1.3
WY	1.0	0.9	1.4	1.1

and Other: 1.4. The maximum DEFT for any racial category in any state is 3.2 (Massachusetts, American Indian).

Of all questions examined the Gender question provides the smallest DEFT suggesting that it has a smaller clustering effect. The DEFT nationally is 1.0, indicating that the complex sample design provides the same efficiency as a simple random sample. The extreme values are also smaller than the other questions with a minimum of 0.5 and a maximum of 1.2.

Finally, the data for the voter Party ID indicates a moderate clustering effect. Nationally in 2008 the Republican category has the smaller DEFT of 1.1 and the Democrats have the highest DEFT of 2.0.

The National Election Pool has set a crosstab threshold of 100 respondents on the row totals. Consequently, Edison Research does not provide cell estimates when there are fewer than 100 respondents (therefore simple random sample variance estimates are not available). The two highest age category DEFT where cell estimates are provided are Texas age category 75+ with a DEFT of 2.8 and Georgia age category 30-39 with a DEFT of 2.2. The highest race DEFT is New Mexico race category White with a DEFT 2.6.

4   Conclusion

The state-by-state analyses of design effect show a fairly wide range of values. It is important to note the design effect for all questions. Otherwise, the confidence interval may be inadequate and incorrect conclusions are possible. Simply assuming a sample design is a simple random sample and estimating the variance using a simple random sample design is not correct. This leads to a confidence interval that is too small and will increase the probability of a Type I error. Additionally, making the assumption that all characteristics from a questionnaire are evenly clustered throughout the population can lead to further mistakes. In the case of the 2008 NEP Exit Poll the DEFT varies

Table 4: DEFT for Obama Presidential Vote and AGE of Voter Response

State	18-24	25-29	30-39	40-44	45-49	50-59	60-64	65-74	75+
AL	1.3	1.1	1.6	1.4	1.4	1.1	1.3	1.3	1.0
AZ	1.0	1.8	1.6	1.3	1.4	1.5	0.9	1.0	0.6
AR	1.2	1.5	1.6	0.9	1.6	1.4	1.3	0.9	1.0
CA	1.2	1.5	1.9	1.7	1.4	1.3	1.0	1.3	1.2
CT	1.4	1.2	1.2	1.2	1.3	1.2	1.2	0.8	0.8
DE	1.3	1.5	1.4	1.3	0.9	1.6	1.4	0.9	1.3
FL	1.7	1.5	1.6	1.4	1.3	1.2	1.2	1.5	1.2
GA	1.5	1.5	2.2	1.4	1.3	1.8	1.1	1.1	0.8
ID	1.3	1.0	1.1	1.1	1.2	1.1	1.3	1.3	1.0
IL	1.3	0.9	1.4	1.6	1.4	1.5	1.0	1.1	1.3
IN	1.4	1.2	1.5	1.3	1.4	1.3	1.0	1.1	1.0
IA	1.4	1.4	1.7	1.1	1.2	1.1	1.2	1.0	1.1
KS	1.3	0.6	0.8	0.9	1.0	1.0	0.9	1.0	1.3
KY	1.2	1.2	1.4	0.9	1.2	1.5	1.0	1.5	0.8
LA	1.9	1.9	2.1	1.8	2.0	2.1	1.2	1.3	1.2
ME	1.4	1.2	1.5	1.3	1.3	1.2	1.2	1.1	1.0
MD	1.2	1.3	1.7	1.3	1.5	1.4	1.4	1.5	2.8
MA	0.8	1.0	1.1	1.2	1.2	1.0	1.0	0.9	1.4
MI	1.5	1.4	1.5	1.5	1.3	1.3	1.1	1.2	1.1
MN	1.2	1.3	1.6	1.2	1.4	1.5	1.1	1.2	1.3
MS	1.8	1.7	1.7	1.5	1.5	2.0	1.6	1.1	1.0
MO	1.3	1.3	1.5	1.5	1.4	1.5	0.9	1.2	1.3
MT	1.2	1.0	1.5	1.1	1.3	1.5	1.1	1.0	1.4
NE	1.3	0.9	1.4	1.3	1.1	1.4	1.2	0.8	1.1
NV	1.4	1.3	1.8	1.2	1.4	1.0	1.1	1.3	1.3
NH	1.2	0.9	1.1	1.0	1.2	1.4	1.1	1.0	1.2
NJ	1.6	1.4	1.9	1.3	1.4	1.3	1.1	1.0	1.0
NM	1.5	1.2	1.4	1.5	1.5	1.6	1.2	1.3	1.2
NY	1.6	1.5	2.1	1.8	1.4	1.7	1.3	1.7	1.1
NC	1.8	1.0	1.5	1.3	1.3	1.7	1.0	1.2	1.2
ND	1.5	1.0	0.9	1.3	0.9	1.5	1.4	1.0	1.5
OH	1.5	1.3	1.5	1.3	1.3	1.5	1.2	1.3	1.2
OK	1.4	1.1	1.1	1.4	1.3	0.9	1.1	1.3	0.5
PA	1.4	1.7	1.7	1.4	1.4	1.5	1.5	1.4	1.0
RI	0.8	1.5	1.3	1.2	1.4	1.1	1.4	1.0	0.5
SC	1.3	1.2	1.7	1.5	1.7	1.6	1.1	1.0	1.1
SD	1.4	1.1	1.3	1.3	1.1	1.3	1.5	1.3	0.8
TN	1.7	0.8	1.6	1.6	1.4	1.0	1.0	1.2	1.2
TX	1.6	1.4	1.7	1.6	1.4	1.7	1.9	1.7	2.8
UT	1.3	1.6	1.6	0.8	0.9	1.4	1.2	0.7	0.8
VT	0.8	1.5	1.1	1.1	1.0	1.0	0.8	1.3	0.9
VA	1.3	1.5	1.3	1.3	1.2	1.1	1.2	1.0	0.9
WV	1.0	0.6	1.2	1.3	0.9	0.8	1.0	1.0	1.1
WI	1.5	1.1	1.6	1.1	1.3	1.2	1.3	1.3	0.9
WY	0.9	1.7	1.2	1.2	1.3	1.4	1.4	1.1	1.0
State Mean	1.3	1.3	1.5	1.3	1.3	1.4	1.2	1.2	1.1
National (2004)	1.3	1.4	1.1	1.3	1.2	1.1	1.1	1.1	1.3
National (2008)	1.2	1.2	1.4	1.3	1.3	1.3	1.3	1.5	1.4

Table 5: DEFT for Obama Presidential Vote and RACE of Voter Response

State	White	Black	Hispanic	Asian	American Indian	Other
AL	1.0	1.2	0.8	2.0	1.0	0.8
AZ	2.5	2.1	1.8	0.8	3.9	1.5
AR	3.1	3.5	1.6	1.0	0.9	1.4
CA	3.7	2.8	2.7	3.8	1.0	1.4
CT	2.5	2.2	1.6	0.9	0.7	0.7
DE	2.3	2.4	1.2	1.0	0.7	1.1
FL	3.9	3.9	3.8	1.8	1.3	1.1
GA	2.2	2.4	0.9	1.1	1.1	1.3
ID	2.0	1.3	2.2	1.0	1.6	1.0
IL	3.3	3.7	2.3	1.4	1.0	0.8
IN	2.8	3.1	1.9	0.8	1.0	1.1
IA	2.9	3.3	1.1	1.1	1.1	1.0
KS	1.7	1.3	1.3	1.3	0.7	0.8
KY	3.6	4.0	1.6	1.0	1.1	1.1
LA	2.1	2.4	1.2	1.3	1.2	1.0
ME	1.4	1.0	1.1	0.9	1.2	1.2
MD	2.6	3.0	1.3	1.2	1.1	1.0
MA	2.8	2.3	1.4	2.4	2.2	1.2
MI	3.2	3.3	1.3	1.4	3.0	1.5
MN	2.3	1.6	1.4	1.5	3.9	1.2
MS	1.1	1.2	1.2	1.1	1.0	0.9
MO	3.3	3.7	1.5	1.0	1.3	1.1
MT	2.0	0.9	1.4	1.4	2.3	1.0
NE	1.7	2.1	0.9	0.8	1.2	1.0
NV	2.2	1.9	2.2	1.4	1.3	1.4
NH	1.6	1.2	1.4	1.3	1.5	0.9
NJ	3.1	3.3	1.9	2.0	1.1	1.4
NM	3.2	1.4	3.3	1.1	5.8	1.2
NY	4.1	4.4	1.5	1.5	1.2	1.1
NC	2.6	2.9	1.5	1.8	1.0	1.1
ND	2.4	1.7	0.8	0.9	2.9	0.8
OH	3.6	4.1	1.7	1.4	0.9	1.0
OK	1.6	2.1	1.1	0.7	1.1	0.8
PA	3.6	4.0	2.2	1.1	0.8	1.3
RI	2.8	2.6	1.5	1.1	1.1	1.6
SC	2.9	2.9	1.0	0.8	0.8	0.9
SD	3.9	0.8	1.0	0.9	4.4	1.2
TN	3.0	3.2	0.9	0.8	1.0	0.7
TX	2.8	2.5	3.6	1.2	1.0	1.2
UT	0.8	0.8	1.2	1.1	1.4	1.1
VT	1.5	NA	2.0	1.0	1.6	1.7
VA	2.5	2.9	1.9	1.8	1.0	1.1
WV	1.0	0.8	0.9	1.1	0.8	0.9
WI	3.3	3.9	1.3	1.2	1.7	1.1
WY	1.7	1.0	1.7	1.1	1.8	1.6
State Mean	1.8	1.4	1.3	1.3	1.4	1.2
National (2004)	1.8	1.4	1.9	1.9	NA	NA
National (2008)	1.8	1.5	2.2	1.4	2.6	1.4

Table 6: DEFT for Obama Presidential Vote and SEX of Voter Response

State	Male	Female
AL	1.9	2.1
AZ	1.3	1.8
AR	1.7	1.7
CA	1.9	2.0
CT	1.3	1.8
DE	1.4	1.7
FL	1.9	2.2
GA	2.0	2.7
ID	1.2	1.6
IL	2.0	2.0
IN	1.9	1.7
IA	1.6	1.8
KS	1.4	1.1
KY	1.5	2.1
LA	2.6	3.7
ME	1.4	1.5
MD	2.1	2.5
MA	1.5	1.2
MI	1.8	1.9
MN	1.5	2.0
MS	2.3	3.0
MO	2.0	2.0
MT	1.6	1.4
NE	1.5	2.1
NV	1.7	1.8
NH	1.3	1.6
NJ	1.8	2.1
NM	2.0	2.1
NY	2.3	2.8
NC	2.1	1.8
ND	1.4	1.4
OH	1.8	2.1
OK	1.4	1.1
PA	1.8	2.4
RI	1.3	1.4
SC	1.8	2.4
SD	1.4	1.8
TN	1.6	2.2
TX	2.7	2.5
UT	1.9	1.9
VT	1.5	1.6
VA	1.6	2.1
WV	0.8	1.2
WI	1.9	1.9
WY	1.3	1.8
State Mean	1.7	1.9
National (2004)	0.9	0.8
National (2008)	1.0	1.0

Table 7: DEFT for Obama Presidential Vote and PARTYID of Voter Response

State	Democrat	Republican	Independent	Something Else
AL	1.6	0.8	1.3	1.0
AZ	2.0	0.8	1.8	1.1
AR	1.6	1.1	1.0	1.3
CA	1.4	1.5	1.2	1.3
CT	1.2	1.2	1.1	1.2
DE	1.3	1.2	1.6	1.1
FL	2.8	1.3	1.3	1.0
GA	1.6	1.2	1.3	1.1
ID	1.1	1.1	1.3	1.3
IL	1.4	1.0	0.9	0.9
IN	1.6	1.2	1.0	1.0
IA	1.6	1.3	1.2	1.4
KS	1.2	0.9	1.1	1.2
KY	2.0	1.1	1.0	1.4
LA	3.0	1.1	1.9	1.3
ME	1.2	1.1	1.4	1.1
MD	1.7	1.4	1.3	1.2
MA	1.3	1.1	1.0	1.3
MI	1.3	0.9	1.2	1.4
MN	1.1	1.2	1.2	1.3
MS	2.3	1.4	1.7	1.6
MO	1.6	0.9	1.3	1.1
MT	1.3	1.1	1.5	1.0
NE	1.7	1.2	1.4	1.2
NV	1.1	1.1	1.2	1.3
NH	1.3	1.0	1.2	1.2
NJ	1.6	1.2	1.3	1.3
NM	1.5	1.4	1.4	1.2
NY	2.2	1.3	1.3	1.3
NC	1.8	1.2	1.3	1.4
ND	1.0	0.9	1.0	1.1
OH	1.4	1.1	1.4	0.9
OK	2.1	1.1	0.9	1.0
PA	1.7	1.2	1.2	1.1
RI	1.0	1.5	0.9	1.5
SC	1.6	0.9	1.3	1.2
SD	2.2	1.0	1.1	1.2
TN	1.6	1.0	1.2	1.6
TX	2.1	1.0	1.5	1.1
UT	0.8	1.1	1.6	0.9
VT	0.8	1.2	1.4	1.0
VA	1.3	1.1	1.3	1.3
WV	1.0	0.8	1.2	1.1
WI	1.4	0.9	1.2	0.9
WY	1.2	1.5	1.3	0.9
State Mean	1.5	1.1	1.3	1.2
National (2004)	1.5	1.3	1.2	1.2
National (2008)	2.0	1.1	1.2	1.2

widely from state to state. In most cases the DEFT of 1.5 will be adequate when characterizing the data. However, when making conclusions concerning a specific state where a high degree of accuracy is needed for a specific variable it is important to calculate the correct DEFT in order to obtain the most accurate confidence interval possible.