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Child Support Noncustodial Parent Employment Demonstration (CSPED) Evaluation: Weighting Specifications

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**Child Support Noncustodial Parent Employment Demonstration (CSPED) Evaluation:
Weighting Specifications**

In Fiscal Year 2012, the Office of Child Support Enforcement (OCSE) within the Administration for Children and Families, U.S. Department of Health and Human Services (DHHS), used its grant-making authority under Section 1115 of the Social Security Act to launch the National Child Support Noncustodial Parent Employment Demonstration (CSPED). As described in the program's Funding Opportunity Announcement (FOA) (DHHS, 2012), OCSE sought to examine the effectiveness of child support-led employment programs for noncustodial parents. The goal of CSPED was to improve the reliable payment of child support in order to improve child well-being and avoid public costs.

In fall of 2012, OCSE competitively awarded grants to child support agencies in eight states to provide enhanced child support, employment, and parenting services to noncustodial parents who were having difficulty meeting their child support obligations. Grantees chose a total of 18 implementation sites, ranging from one county each in Ohio, Iowa, and California to five counties in Colorado. Upon selection, grantees began a one-year planning process to more fully develop participant recruitment and service delivery systems in consultation with OCSE, and form partnerships with other organizations to provide employment and parenting services. This planning process lasted from October 2012 through September 2013.

Also in 2012, OCSE competitively awarded a cooperative agreement to the Wisconsin Department of Children and Families to procure and manage an evaluation of CSPED through an independent third-party evaluator. The Wisconsin Department of Children and Families chose the Institute for Research on Poverty at the University of Wisconsin–Madison, along with its partner Mathematica Policy Research, to conduct the evaluation. The Institute for Research on Poverty also partnered with the University of Wisconsin Survey Center, which worked in

conjunction with Mathematica Policy Research to collect data from study participants. The evaluation used an experimental design in eight sites to compare outcomes for study participants. Grantees randomly assigned one-half of enrolled noncustodial parents to receive CSPED services (the treatment group), and the other half to a control group that did not receive the extra services. The CSPED evaluation has three components, each of which is documented in separate reports: (1) an implementation study; (2) an impact study; and (3) a benefit-cost study.

The impact and benefit-cost studies make use of data drawn from both administrative data and follow-up surveys conducted with study participants. Outcomes based on administrative data are available for all noncustodial parents who enrolled in the study, but outcomes based on survey data are available only for sample members who were randomly selected to be in the survey sample, were located by the survey data collection team, and responded to the follow-up survey. To account for this, the CSPED evaluation team developed survey weights for the analysis of survey-based outcomes.

This report discusses how the evaluation team constructed these weights. This process was based on standard weighted adjustment techniques. The weights were constructed so that data from the 4,282 survey respondents reflect the 10,134 eligible noncustodial parents enrolled in the study.¹ Additionally, the weights were constructed to accommodate analysis that is pooled across grantees, as well as analysis that is grantee-specific. Standard errors from the impact estimation models are calculated taking into account the variability associated with these weights.

The weights were constructed using the following steps:

¹Noncustodial parents were considered ineligible if they were deceased or had a physical impairment preventing them from completing the survey. We identified 22 ineligible cases during the data collection process.

1. **Construct an analysis file.** We created an analysis file containing each noncustodial parent's survey response status and baseline survey variables used as candidate explanatory variables for the weighting adjustment models.
2. **Develop models predicting survey response.** We developed separate logistic regression models predicting the three stages of survey response: (1) whether the participant was in the follow-up survey sample, (2) whether the follow-up sample member was located, and (3) whether the located sample member responded to the survey. Explanatory variables for these models included site, research group, and baseline demographic and socioeconomic characteristics. The models allowed us to identify the explanatory variables most strongly associated with each stage of survey response.
3. **Calculate survey response adjustment factors.** We created subgroups based on the factors most strongly predictive of each stage of survey response. We then created adjustment factors for each subgroup based on the ratio of total noncustodial parents in the subgroup to noncustodial parents that completed the relevant stage of survey response. At the end of this process, each survey respondent had three adjustment factors corresponding to the probabilities that (1) the participant was in the follow-up survey sample, (2) the follow-up sample member was located, and (3) the located sample member responded to the survey.
4. **Calculate the nonresponse weight.** The final response weight was calculated as the product of the three survey response adjustment factors.

Table 1 shows the distribution of the final weights and the design effect by grantee. After completing this process, the final nonresponse weights ranged in size from 1.485 to 5.124 with a median of 2.215, a mean of 2.367, and a standard deviation of 0.601. Differences in final weights

across grantees were modest, although they are somewhat larger on average for the grantees with the lowest percentages of eligible study participants who completed the survey (Texas and South Carolina). The design effect, which is the factor by which standard errors for impact estimates increases when taking into account the variability associated with the weights, is close to 1 overall and for all grantees. Thus the weighting adjustments do not substantially affect the precision of the impact estimates.

Table 1. Final weight distribution, by grantee

| Grantee | Distribution of the final weight | | | | | | Standard Deviation |
|----------------|----------------------------------|-----------------|-----------------|-----------------|------|------|--------------------|
| | Min | 25th Percentile | 50th Percentile | 75th Percentile | Max | Mean | |
| Overall | 1.49 | 2.00 | 2.22 | 2.52 | 5.12 | 2.37 | 0.60 |
| California | 1.67 | 1.84 | 1.92 | 1.99 | 2.23 | 1.93 | 0.15 |
| Colorado | 1.90 | 2.26 | 2.40 | 2.62 | 2.89 | 2.43 | 0.22 |
| Iowa | 1.85 | 2.16 | 2.33 | 2.47 | 2.83 | 2.32 | 0.26 |
| Ohio | 1.53 | 1.73 | 2.03 | 2.11 | 2.54 | 2.03 | 0.29 |
| South Carolina | 2.64 | 3.72 | 3.87 | 4.24 | 5.12 | 3.91 | 0.47 |
| Tennessee | 1.82 | 2.11 | 2.23 | 2.40 | 3.03 | 2.27 | 0.25 |
| Texas | 2.02 | 2.20 | 2.38 | 3.92 | 4.81 | 2.91 | 0.89 |
| Wisconsin | 1.49 | 1.92 | 2.18 | 2.43 | 3.31 | 2.25 | 0.42 |

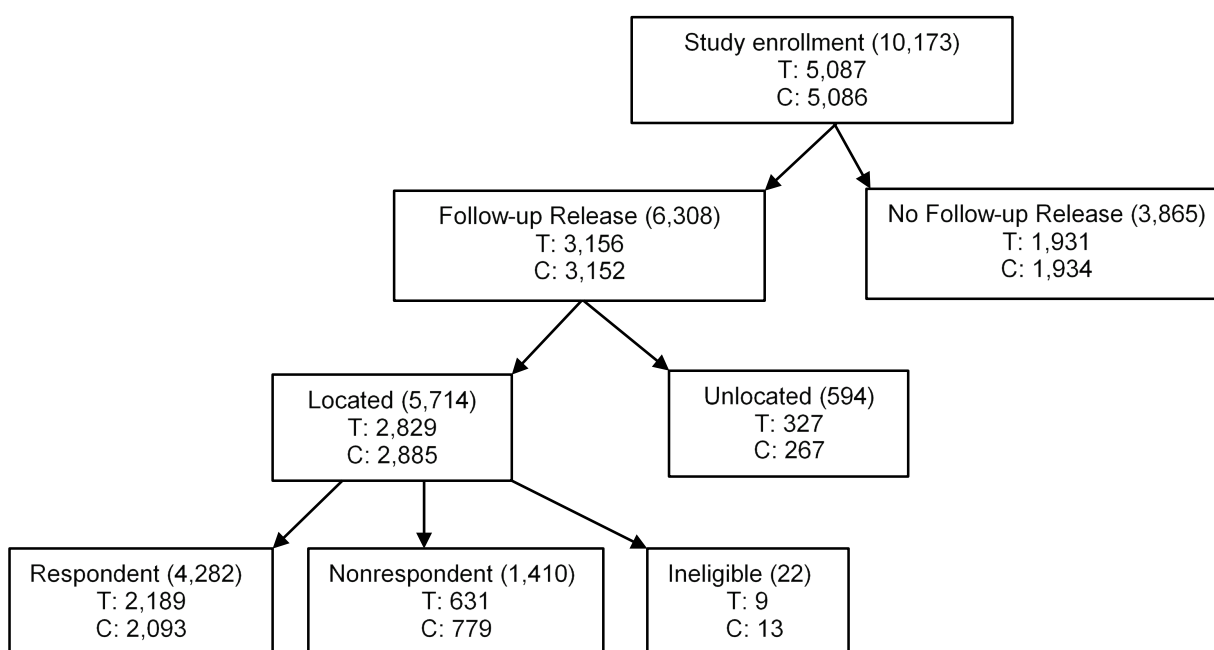
A. Background

The eight CSPED grantees recruited a total of 10,173 noncustodial parents. Half of these noncustodial parents were randomly assigned to the program group and the other half were randomly assigned to the control group. The evaluation team released a follow-up survey approximately one year after random assignment to the 6,308 NCPs who enrolled in the study from October 2013 through July 2015.²

²Follow-up surveys could not be administered to the 3,865 noncustodial parents who enrolled in the study from August 2015 through September 2016 due to project time and resource constraints. Because those who were randomly assigned later in the recruitment period could be different than those were randomly assigned earlier, we could not treat these noncustodial parents as missing at random.

Of the 6,308 NCPs in the follow-up survey release sample, 5,714 (90.6 percent) were located by survey data collection team.³ Among the 5,714 located noncustodial parents, 22 were ineligible to complete the follow-up survey—21 noncustodial parents were deceased and 1 had a physical impairment preventing this noncustodial parent from completing the survey. Consequently, there were a total of 5,692 located, eligible noncustodial parents of whom 4,282 (75.2 percent of those located and eligible) completed the follow-up survey. Figure 1 illustrates the flow of the survey response status by research group. Table 2 provides the total number of NCPs randomly assigned at baseline, the total number of follow-up surveys release, and the total number of follow-up surveys completed, overall and by grantee.

Figure 1. Flow of noncustodial parents from enrollment to survey response status



³For weighting purposes, all unlocated noncustodial parents were considered eligible for the survey because they had completed the baseline survey.

Table 2. Noncustodial parent baseline random assignment, follow-up release and follow-up complete counts, by grantee and research group indicator

| Grantee | Random assignment | | | Follow-up release | | | N Follow-up complete | | |
|----------------|-------------------|-------|--------|-------------------|-------|-------|----------------------|-------|-------|
| | T | C | Total | T | C | Total | T | C | Total |
| California | 664 | 666 | 1,330 | 464 | 464 | 928 | 352 | 333 | 685 |
| Colorado | 749 | 751 | 1,500 | 458 | 459 | 917 | 319 | 295 | 614 |
| Iowa | 637 | 636 | 1,273 | 413 | 411 | 824 | 280 | 266 | 546 |
| Ohio | 511 | 508 | 1,019 | 332 | 332 | 664 | 253 | 249 | 502 |
| South Carolina | 476 | 474 | 950 | 233 | 231 | 464 | 117 | 125 | 242 |
| Tennessee | 755 | 755 | 1,510 | 496 | 495 | 991 | 347 | 316 | 663 |
| Texas | 580 | 583 | 1,163 | 310 | 310 | 620 | 200 | 200 | 400 |
| Wisconsin | 715 | 713 | 1,428 | 450 | 450 | 900 | 321 | 309 | 630 |
| Total | 5,087 | 5,086 | 10,173 | 3,156 | 3,152 | 6,308 | 2,189 | 2,093 | 4,282 |

Note: T = Treatment Group; C = Control Group.

B. Constructing the Analysis File

To construct the weights, we created a noncustodial parent-level analysis file containing the survey response status, grantee, research group indicator, and the baseline survey variables considered for weighting adjustments. The baseline survey variables selected for this file are listed in Table 3. These variables were selected based on three criteria: (1) potential association with follow-up, location and response status, (2) small number of missing observations, and (3) availability for all noncustodial parents.⁴

⁴Noncustodial parents in Texas were administered a shortened version of the baseline survey. Because of the shortened survey provided to the Texas noncustodial parent sample and because of item nonresponse in all states, not all baseline variables were available for all noncustodial parents.

Table 3. Baseline variables included in weighting adjustment models

| Variable | Baseline survey question number | Description |
|-----------------------|---------------------------------|---|
| Statename | | State name |
| Siteid | | Site identifier |
| randomizationstatusid | | Research group indicator |
| b_gender | SC | Gender |
| b_age | A2 | What is your age? |
| b_phone | A6a | Do you have a cell phone? |
| b_ethnicity | B1 | Are you Hispanic, Latino, or of Spanish origin? |
| b_race | B1/B2 | What is your ethnicity/race? |
| b_bornus | B3 | Were you born in the United States? |
| b_marital | B5 | What is your marital status? |
| b_education | B6 | What is the highest level of education you have completed? |
| b_service | B7 | Have you ever served on active duty in the U.S. Armed Forces? |
| basechildren | C1 ^a | Number of biological children (deceased and non-deceased) from the baseline survey |
| b_work | E1 | Work can be any regular paid jobs, odd jobs, temporary jobs, work done in your own business, “under the table” work, “informal” work, or any other types of work you have done for pay. Thinking of all of these types of work, in the past 30 days, have you worked for pay? |
| b_snap | E11 | The next question asks about the Supplemental Nutritional Assistance Program or SNAP, which is also known as the Food Stamp Program. In the past 30 days, have you received SNAP or food stamp benefits? |
| b_residence | E14 | Do you currently live in the same place as any of your parents or grandparents? |
| b_crime | F7 | Have you ever been convicted of a crime? |

Note: SC = Screening Question.

^aThis variable is based primarily on baseline item C1 but is revised in the subsequent child rostering section in some cases.

We used two imputation approaches to temporarily impute missing observations for the baseline variables for weighting purposes. For variables with 30 or fewer missing observations, we recoded the missing values to the modal response option. For example, there were two observations in the baseline data file with missing responses to the baseline survey question E1, “Have you worked for pay in the past 30 days?” which were recoded to response option ‘yes,’ which accounted for the majority, 55.2 percent, of noncustodial parent responses to baseline survey question E1. For variables with more than 30 missing observations, we imputed the missing responses to be proportional to the non-missing responses. That is, we assigned a

uniformly distributed, random number to each of the missing observations, sorted the missing observations by the random numbers, and selected a sample from the missing observations proportional to each response option in the sorted order. There were two variables that were imputed using this approach: the combined B1/B2 survey question on ethnicity/race, and survey question F7 asking, “Have you ever been convicted of a crime?”

In order to minimize issues with small cells among some of the variables, categorical groups were constructed for five of the baseline variables:

- A2: Age. Three age groups were constructed based on a chi-square decision tree analysis:
 - Ages greater than or equal to 18 and less than 35
 - Ages greater than or equal to 35 and less than 42
 - Ages greater than or equal to 42
- B1/B2: Ethnicity/Race. Three ethnicity/race groups were constructed:
 - Hispanic, Latino, or Spanish Origin (responses 1–4 to question B1)
 - Not Hispanic Black or African American (response 0 to question B1 and response 3 to question B2)
 - Not Hispanic, White, Asian, and all others (response 0 to question B1 and response other than 3 to question B2)
- B5: Marital Status. Two marital status groups were constructed:
 - Ever Married (responses 1–4 to question B5)
 - Never Married (response 5 to question B5)
- B6: Highest Level of Education. Four education categories were constructed:
 - Never attended school, did not complete high school or GED (responses 1 or 10 to question B6)

- High school or GED (responses 2–3 to question B6)
- Some college or vocational school (response 4 to question B6)
- Vocational, 2-year, 4-year, or graduate degree (responses 5–9 to question B6)

The number of biological children (deceased and non-deceased) from the baseline survey, basechildren, was also considered for weighting adjustments. This variable is available for the 6,308 noncustodial parents that were randomly assigned between October 2013 and July 2015.

The following categorical group was constructed using the basechildren variable:

- Basechildren: Number of Biological Children. Four children categories were constructed:
 - Number of children = 1
 - Number of children = 2
 - Number of children = 3
 - Number of children = 4 or more

C. Weighting Cell Adjustment Factor

The explanatory variables from the analysis file used to construct the weighting cells for weighting adjustments were determined using stepwise logistic regression models. Separate models were fit for follow-up attempt, location, and response status adjustments though each model included noncustodial parents from all states and both research groups. The dependent variable for these models were:

- Follow-up status: 1 if the noncustodial parent was in the follow-up file, 0 if the noncustodial parent was in the baseline data file but not the follow-up data file.
- Location status for the noncustodial parents in the follow-up file: 1 if the noncustodial parent was located, 0 if the noncustodial parent was unable to be located.

- Response status for located, eligible noncustodial parents: 1 if the NCP was a respondent, 0 if the noncustodial parent was a nonrespondent.

The explanatory variables included in each model were all variables listed in Table 3.

The stepwise regression process kept variables that explained response variation and dropped variables that did not explain response variation.⁵ The weighting cells were constructed using the most significant variables from the stepwise logistic regression model to calculate the adjustment factors within cells. We discuss construction of adjustment factors pertaining to inclusion in the follow-up survey sample, location status, and survey response in turn in the sections below.

C.1. Follow-up Adjustment Factor

The follow-up weighting adjustment accounts for the 3,865 noncustodial parents who enrolled in the study from August 2015 through September 2016, but who were not included in the follow-up survey sample. For the follow-up model, the site identifier (siteid), an indicator for whether the noncustodial parent had received SNAP or food stamp benefits in the past 30 days (b_snap), an indicator for whether the noncustodial parent had a cell phone (b_phone), gender, an indicator for whether the noncustodial parent had been convicted of a crime (b_crime), and an indicator for whether the noncustodial parent had ever served on active duty (b_service) were all statistically significant (p-value less than 0.05). The variables are listed in order of significance (i.e. siteid was more significant in the model than b_snap and both siteid and b_snap are more significant than b_phone and so on). Note that an indicator for research group status (randomizationstatusid) was not significant in the model.

⁵The specifications for variable entry and exit for the stepwise regression were *p*-values of .30 and .35, respectively.

Before calculating the adjustments, we looked at the sample sizes for those noncustodial parents in the follow-up data file within cells based on the significant variables in the model. Because of the skewed proportions among several of the baseline variables (for example, females comprised roughly 10 percent of the baseline population; approximately 90 percent of the noncustodial parents in the baseline population had a cell phone), there were several cells that included fewer than 20 observations. Therefore, the follow-up weighting cell adjustments were implemented using only the site identifier and an indicator for whether the noncustodial parent had received SNAP or food stamp benefits in the past 30 days. There were still a few small cells for the Colorado (Boulder County) site so this site was collapsed with the Colorado (Jefferson County) site prior to calculating the follow-up cell adjustments.

For each of the 6,308 noncustodial parents in the follow-up data file, a follow-up adjustment factor was assigned. The follow-up adjustment factor is equal to the number of NCPs at baseline divided by the number of follow-up surveys released within each cell. The follow-up adjustment factors are listed in Table 4 and range from 1.24 to 2.66.

The follow-up adjustment factor variable was merged onto the analysis file and applied to all 6,308 noncustodial parents who were included in the follow-up survey sample. The 3,865 noncustodial parents for whom no follow-up survey was released, received a follow-up weight equal to 0. The sum of the follow-up weights is equal to 10,173 (the size of the inference population).

Table 4. Adjustment factor pertaining to inclusion in the follow-up survey sample, by grantee and an indicator for whether the noncustodial parent has received SNAP or food stamp benefits within 30 days

| Grantee | Indicator for whether an NCP has received SNAP or food stamp benefits in the past 30 days | Total number of NCPs at baseline (N = 10,173) | Total number of follow-up surveys released (N = 6,308) | Follow-up adjustment factor |
|------------------------------------|---|---|--|-----------------------------|
| California | No | 824 | 569 | 1.45 |
| California | Yes | 506 | 359 | 1.41 |
| Colorado (Arapahoe County) | No | 419 | 278 | 1.51 |
| Colorado (Arapahoe County) | Yes | 111 | 77 | 1.44 |
| Colorado (El Paso County) | No | 326 | 186 | 1.75 |
| Colorado (El Paso County) | Yes | 163 | 98 | 1.66 |
| Colorado (Jefferson County) | No | 273 | 164 | 1.66 |
| Colorado (Jefferson County) | Yes | 117 | 64 | 1.83 |
| Colorado (Prowers County) | No | 46 | 23 | 2.00 |
| Colorado (Prowers County) | Yes | 45 | 27 | 1.67 |
| Iowa | No | 657 | 409 | 1.61 |
| Iowa | Yes | 616 | 415 | 1.48 |
| Ohio | No | 593 | 354 | 1.68 |
| Ohio | Yes | 426 | 310 | 1.37 |
| Tennessee (Hamilton County) | No | 188 | 97 | 1.94 |
| Tennessee (Hamilton County) | Yes | 147 | 87 | 1.69 |
| Tennessee (Davidson County) | No | 247 | 165 | 1.50 |
| Tennessee (Davidson County) | Yes | 152 | 114 | 1.33 |
| Tennessee (Shelby County) | No | 466 | 310 | 1.50 |
| Tennessee (Shelby County) | Yes | 310 | 218 | 1.42 |
| Texas (Bell County) | No | 498 | 229 | 2.17 |
| Texas (Bell County) | Yes | 88 | 38 | 2.32 |
| Texas (Webb County) | No | 514 | 313 | 1.64 |
| Texas (Webb County) | Yes | 63 | 40 | 1.58 |
| Wisconsin (Kenosha County) | No | 437 | 214 | 2.04 |
| Wisconsin (Kenosha County) | Yes | 328 | 217 | 1.51 |
| Wisconsin (Brown County) | No | 377 | 239 | 1.58 |
| Wisconsin (Brown County) | Yes | 286 | 230 | 1.24 |
| South Carolina (Charleston County) | No | 374 | 168 | 2.23 |
| South Carolina (Charleston County) | Yes | 82 | 42 | 1.95 |
| South Carolina (Horry County) | No | 117 | 44 | 2.66 |
| South Carolina (Horry County) | Yes | 47 | 26 | 1.81 |
| South Carolina (Greenville County) | No | 255 | 142 | 1.80 |
| South Carolina (Greenville County) | Yes | 75 | 42 | 1.79 |

C.2. Location Adjustment Factor

The location weighting adjustment accounts for the 594 noncustodial parents who were in the follow-up survey sample, but who were not located by the survey data collection team. For the location model, the state (statename), age group (b_age), an indicator for whether the

noncustodial parent had been convicted of a crime (b_crime), an indicator for treatment or control group (randomizationstatusid), an indicator for whether the noncustodial parent had ever served on active duty (b_service), education level (b_education), and an indicator for whether the noncustodial parent lives in the same place as any of their parents or grandparents (b_residence) were all statistically significant (p-value less than 0.05). The variables are listed in order of significance.

The sample sizes for the located noncustodial parents included several cells with fewer than 20 observations based on the significant variables in the model. For this reason, the location cell adjustments were implemented using only state, age group, an indicator for whether the noncustodial parent had been convicted of a crime, and an indicator for research group status. To mitigate the remaining small cells, we collapsed the age group variable into two groups: noncustodial parents greater than or equal to 18 years old and less than 35 years old and noncustodial parents greater than or equal to 35 years old.

For each of the 5,714 located noncustodial parents, a location adjustment factor was assigned. The location adjustment factor is equal to the weighted⁶ number of follow-up surveys released divided by the weighted number of located noncustodial parents within each cell based on the combination of state, age group, an indicator for whether the noncustodial parent had been convicted of a crime, and an indicator for research group status. The location adjustment factors are listed in Table 5 and range from 1.00 to 1.40.

⁶The follow-up adjusted weight was used to construct the location adjustment.

Table 5. Adjustment factor pertaining to whether located by the survey data collection team, by grantee, age group, an indicator for whether the noncustodial parent has been convicted of a crime, and research group indicator

| Grantee | Age group | Indicator for whether NCP has been convicted of a crime | Research group indicator | Location adjustment factor |
|------------|-----------|---|--------------------------|----------------------------|
| California | 18-34 | No | T | 1.06 |
| California | 18-34 | No | C | 1.01 |
| California | 18-34 | Yes | T | 1.06 |
| California | 18-34 | Yes | C | 1.06 |
| California | 35+ | No | T | 1.07 |
| California | 35+ | No | C | 1.03 |
| California | 35+ | Yes | T | 1.05 |
| California | 35+ | Yes | C | 1.07 |
| Colorado | 18-34 | No | T | 1.05 |
| Colorado | 18-34 | No | C | 1.11 |
| Colorado | 18-34 | Yes | T | 1.09 |
| Colorado | 18-34 | Yes | C | 1.16 |
| Colorado | 35+ | No | T | 1.10 |
| Colorado | 35+ | No | C | 1.03 |
| Colorado | 35+ | Yes | T | 1.17 |
| Colorado | 35+ | Yes | C | 1.09 |
| Iowa | 18-34 | No | T | 1.08 |
| Iowa | 18-34 | No | C | 1.08 |
| Iowa | 18-34 | Yes | T | 1.19 |
| Iowa | 18-34 | Yes | C | 1.14 |
| Iowa | 35+ | No | T | 1.02 |
| Iowa | 35+ | No | C | 1.09 |
| Iowa | 35+ | Yes | T | 1.10 |
| Iowa | 35+ | Yes | C | 1.12 |
| Ohio | 18-34 | No | T | 1.06 |
| Ohio | 18-34 | No | C | 1.03 |
| Ohio | 18-34 | Yes | T | 1.06 |
| Ohio | 18-34 | Yes | C | 1.09 |
| Ohio | 35+ | No | T | 1.03 |
| Ohio | 35+ | No | C | 1.00 |
| Ohio | 35+ | Yes | T | 1.02 |
| Ohio | 35+ | Yes | C | 1.04 |
| Tennessee | 18-34 | No | T | 1.13 |
| Tennessee | 18-34 | No | C | 1.03 |
| Tennessee | 18-34 | Yes | T | 1.15 |
| Tennessee | 18-34 | Yes | C | 1.12 |
| Tennessee | 35+ | No | T | 1.09 |
| Tennessee | 35+ | No | C | 1.02 |
| Tennessee | 35+ | Yes | T | 1.07 |
| Tennessee | 35+ | Yes | C | 1.05 |
| Texas | 18-34 | No | T | 1.13 |
| Texas | 18-34 | No | C | 1.13 |
| Texas | 18-34 | Yes | T | 1.22 |
| Texas | 18-34 | Yes | C | 1.17 |
| Texas | 35+ | No | T | 1.09 |
| Texas | 35+ | No | C | 1.12 |
| Texas | 35+ | Yes | T | 1.08 |
| Texas | 35+ | Yes | C | 1.12 |

(table continues)

Table 5. Adjustment factor pertaining to whether located by the survey data collection team, by grantee, age group, an indicator for whether the noncustodial parent has been convicted of a crime, and research group indicator (continued)

| Grantee | Age group | Indicator for whether NCP has been convicted of a crime | Research group indicator | Location adjustment factor |
|----------------|-----------|---|--------------------------|----------------------------|
| Wisconsin | 18–34 | No | T | 1.08 |
| Wisconsin | 18–34 | No | C | 1.05 |
| Wisconsin | 18–34 | Yes | T | 1.18 |
| Wisconsin | 18–34 | Yes | C | 1.09 |
| Wisconsin | 35+ | No | T | 1.07 |
| Wisconsin | 35+ | No | C | 1.00 |
| Wisconsin | 35+ | Yes | T | 1.14 |
| Wisconsin | 35+ | Yes | C | 1.09 |
| South Carolina | 18–34 | No | T | 1.36 |
| South Carolina | 18–34 | No | C | 1.37 |
| South Carolina | 18–34 | Yes | T | 1.40 |
| South Carolina | 18–34 | Yes | C | 1.37 |
| South Carolina | 35+ | No | T | 1.32 |
| South Carolina | 35+ | No | C | 1.04 |
| South Carolina | 35+ | Yes | T | 1.28 |
| South Carolina | 35+ | Yes | C | 1.20 |

Note: T = Treatment Group; C = Control Group.

The location adjustment factor variable was merged onto the analysis file and multiplied by the follow-up adjustment factor for all 5,714 located noncustodial parents. The 594 unlocated noncustodial parents received a location weight equal to 0. The sum of the location weights (product of the location adjustment factor and the follow-up adjustment factor) is equal to 10,173 (the size of the inference population).

C.3. Response Adjustment Factor

Prior to adjusting for nonresponse, we dropped the 22 located, but ineligible noncustodial parents. The sum of the location weights among the eligible respondent and nonrespondent noncustodial parents is 10,134.34.

The response weighting adjustment accounts for the 1,410 nonrespondent noncustodial parents. For the response model, the site identifier (siteid), gender (b_gender), an indicator for research group status (randomizationstatusid), age group (b_age), an indicator for whether the

noncustodial parent had received SNAP or food stamp benefits in the past 30 days (b_snap), the number of biological children (f_child), an indicator for whether the noncustodial parent had ever served in the U.S. armed forces ($b_service$), and an indicator for whether the noncustodial parent had been convicted of a crime (b_crime) were all statistically significant (p -value less than 0.05). The variables are listed in order of significance.

The sample sizes for the respondent noncustodial parents included several cells with fewer than 20 observations based on the significant variables in the model. For this reason, the response cell adjustments were implemented using the site identifier, research group status indicator, and age group for those cells where the unweighted number of respondent observations was greater than 100. The response cell adjustments for those cells where the unweighted number of respondent observations was less than 100 were implemented using the site identifier and research group status indicator only. Due to a small cell for the Colorado (Boulder County) site, this site was collapsed with the Colorado (Jefferson County) site prior to the response cell adjustment calculations (a similar collapsing was done for the follow-up adjustment).

For each of the 4,282 responding noncustodial parents, a response adjustment factor was assigned. The response adjustment factor is equal to the weighted number of respondents and nonrespondents, divided by the weighted number of responding noncustodial parents within each cell, using the location weight in each case. The response adjustment factors for observations for which the unweighted count within the cell (defined as site identifier by the research group status indicator by age group) is greater than or equal to 100 are listed in Table 6. The response adjustment factors for observations for which the unweighted cell counts using all three variables was less than 100 (causing us to use only two of the variables to form the weighting cells) are listed in Table 7. Across both tables, the adjustment factors range from 1.04 to 1.70.

Table 6. Response adjustment factor, by site, research group indicator, and age group for cells with 100 or more respondents

| Site | Research group indicator | Age group | Response adjustment factor |
|----------------------------|--------------------------|-----------|----------------------------|
| California | T | 18–34 | 1.29 |
| California | T | 35–41 | 1.26 |
| California | T | 42+ | 1.13 |
| California | C | 18–34 | 1.23 |
| California | C | 35–41 | 1.41 |
| California | C | 42+ | 1.44 |
| Colorado (Arapahoe County) | T | 18–34 | 1.40 |
| Colorado (Arapahoe County) | T | 35–41 | 1.44 |
| Colorado (Arapahoe County) | T | 42+ | 1.25 |
| Colorado (Arapahoe County) | C | 18–34 | 1.56 |
| Colorado (Arapahoe County) | C | 35–41 | 1.46 |
| Colorado (Arapahoe County) | C | 42+ | 1.31 |
| Colorado (El Paso County) | T | 18–34 | 1.23 |
| Colorado (El Paso County) | T | 35–41 | 1.24 |
| Colorado (El Paso County) | T | 42+ | 1.04 |
| Iowa | T | 18–34 | 1.48 |
| Iowa | T | 35–41 | 1.22 |
| Iowa | T | 42+ | 1.22 |
| Iowa | C | 18–34 | 1.43 |
| Iowa | C | 35–41 | 1.33 |
| Iowa | C | 42+ | 1.34 |
| Ohio | T | 18–34 | 1.34 |
| Ohio | T | 35–41 | 1.19 |
| Ohio | T | 42+ | 1.19 |
| Ohio | C | 18–34 | 1.39 |
| Ohio | C | 35–41 | 1.21 |
| Ohio | C | 42+ | 1.12 |
| Tennessee (Shelby County) | T | 18–34 | 1.27 |
| Tennessee (Shelby County) | T | 35–41 | 1.38 |
| Tennessee (Shelby County) | T | 42+ | 1.20 |
| Tennessee (Shelby County) | C | 18–34 | 1.50 |
| Tennessee (Shelby County) | C | 35–41 | 1.53 |
| Tennessee (Shelby County) | C | 42+ | 1.36 |
| Texas (Webb County) | T | 18–34 | 1.18 |
| Texas (Webb County) | T | 35–41 | 1.24 |
| Texas (Webb County) | T | 42+ | 1.15 |
| Texas (Webb County) | C | 18–34 | 1.26 |
| Texas (Webb County) | C | 35–41 | 1.38 |
| Texas (Webb County) | C | 42+ | 1.15 |
| Wisconsin (Kenosha County) | T | 18–34 | 1.25 |
| Wisconsin (Kenosha County) | T | 35–41 | 1.33 |
| Wisconsin (Kenosha County) | T | 42+ | 1.07 |
| Wisconsin (Kenosha County) | C | 18–34 | 1.29 |
| Wisconsin (Kenosha County) | C | 35–41 | 1.49 |
| Wisconsin (Kenosha County) | C | 42+ | 1.28 |
| Wisconsin (Brown County) | T | 18–34 | 1.28 |
| Wisconsin (Brown County) | T | 35–41 | 1.17 |
| Wisconsin (Brown County) | T | 42+ | 1.11 |
| Wisconsin (Brown County) | C | 18–34 | 1.41 |
| Wisconsin (Brown County) | C | 35–41 | 1.26 |
| Wisconsin (Brown County) | C | 42+ | 1.48 |

Note: T = Treatment Group; C = Control Group.

Table 7. Response adjustment factor, by site and research group indicator (for cells with fewer than 100 respondents when including age group)

| Site | Research group indicator | Response adjustment factor |
|------------------------------------|--------------------------|----------------------------|
| Colorado (El Paso County) | C | 1.41 |
| Colorado (Jefferson County) | T | 1.31 |
| Colorado (Jefferson County) | C | 1.36 |
| Colorado (Prowers County) | T | 1.22 |
| Colorado (Prowers County) | C | 1.21 |
| Tennessee (Hamilton County) | T | 1.24 |
| Tennessee (Hamilton County) | C | 1.39 |
| Tennessee (Davidson County) | T | 1.35 |
| Tennessee (Davidson County) | C | 1.58 |
| Texas (Bell County) | T | 1.70 |
| Texas (Bell County) | C | 1.57 |
| South Carolina (Charleston County) | T | 1.41 |
| South Carolina (Charleston County) | C | 1.39 |
| South Carolina (Horry County) | T | 1.31 |
| South Carolina (Horry County) | C | 1.41 |
| South Carolina (Greenville County) | T | 1.69 |
| South Carolina (Greenville County) | C | 1.57 |

The response adjustment factor variable was merged onto the weighting analysis file and multiplied by the location weight for all 4,282 responding noncustodial parents. The 1,410 nonrespondent noncustodial parents received a response weight equal to 0. The sum of the response weights among respondents is equal to 10,134.34 (this is the size of the inference population minus the sum of the location weights among the 22 noncustodial parents deemed ineligible).

D. Final Weights Construction

As previously described, the final response weight is calculated as the product of the follow-up weight, the location adjustment factor, and the response adjustment factor, where the 22 ineligible noncustodial parents are assigned a weight equal to the location weight. A nonzero weight is assigned to the ineligibles so that the sum of the weights in the analysis file is equal to the sampling frame total, 10,173. Please see Table 1 for a summary of the final weights.