Exploring Paths to Child Support Compliance

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In recent decades, changes in family structure have led to a substantial increase in children who do not live with both of their parents. The child support program is designed to address one of the potential negative consequences for these children by ensuring that noncustodial parents contribute financially to their children's upbringing. However, the amount of uncollected child support (arrears) has increased to over $116 billion in the most recent data, FY 2016 (U.S. DHHS, 2018). A primary reason is that many of the noncustodial parents who owe support, including a disproportionate share of those whose children live in poverty, have limited earnings and ability to pay child support.

Difficulty collecting the child support that is due has motivated consideration of child support program redesign. 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), launched the National Child Support Noncustodial Parent Employment Demonstration (CSPED). Drawing on prior evaluation research on the types of programs that seemed promising, OCSE sought to examine the effectiveness of an integrated set of child support, employment, and parenting services for noncustodial parents who were struggling to maintain sufficient earnings to comply with their child support obligations, led by the child support program (U.S. DHHS, 2012). The primary goal was improving the reliable payment of child support in order to improve child wellbeing and avoid public costs. Wisconsin was one of the eight states selected to implement CSPED[1] and implemented its CSPED program, called Supporting Parents, Supporting Kids (SPSK), in Brown and Kenosha Counties.

CSPED was rigorously evaluated. The Wisconsin Department of Children and Families (DCF) was selected to procure and manage an evaluation and chose the Institute for Research on

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[1]The other seven states were California, Colorado, Iowa, Ohio, South Carolina, Tennessee, and Texas.

Poverty at the University of Wisconsin‑Madison, along with its partner Mathematica Policy Research, to conduct the evaluation. The primary measure of effectiveness was child support compliance, defined as the proportion of the amount due that was paid. The overall evaluation, which used the current best practice methods (based on a random-assignment design), concluded that CSPED did not significantly affect child support compliance (Cancian, Meyer, Wood, et al., 2019).

This report extends the basic impact evaluation (Cancian, Meyer, Wood, et al., 2019) by exploring why there was no impact on compliance when the program model was based on the best available research. We cannot answer these questions using causal analyses, but our analyses can suggest why the predicted relationship did not hold. Our exploration begins with the recognition that the logic of how the CSPED program would increase compliance was complicated, involving a series of interlocking paths. Participants were expected to receive a package of core services: enhanced child support, employment, and parenting (with these services coordinated through case management). Each of these services was expected to have an effect on an intermediate outcome. The model predicted that, first, CSPED participants would receive different (better) child support services, which would then change their attitude towards and cooperation with the child support program. Second, participants would receive employment services, which would then lead to more earnings. Third, participants would receive parenting services through peer support, which would then lead to an increased sense of responsibility for children. Finally, these three intermediate outcomes—increased satisfaction with the child support program, increased earnings, and increased responsibility for children—would cumulatively lead to a higher level of compliance with child support orders.

The lack of an impact on compliance has raised the question: where did the logic fail? Did participants not receive services? Were services not effective in achieving the predicted intermediate outcomes? Were the intermediate outcomes not effective in achieving increased compliance? This report explores these questions, focusing on the experience of SPSK, the CSPED program in Wisconsin, with selected information on the full eight states in CSPED.

The remainder of this report consists of four sections. We first provide background, including the design of CSPED and the main impact evaluation results. The next section provides an overview of the data and describes the two approaches we use to examine the paths to compliance. The final two sections present results and conclusions.

BACKGROUND: THE DESIGN OF CSPED AND THE IMPACT EVALUATION

While CSPED was informed by several previous demonstrations and evaluations, three were particularly highlighted in the program funding announcement (U.S. DHHS, 2012): Parents' Fair Share, the Strengthening Families through Stronger Fathers Initiative, and the Noncustodial Parent Choices program, all of which were found to have an effect on child support outcomes (Miller and Knox, 2001; Schroeder and Doughty, 2009; Sorenson and Lippold, 2012).

The Funding Opportunity Announcement (U.S. DHHS, 2012), contained a brief review of several previous programs. The conclusions were:

- Based on this research, it appears that if employment programs for noncustodial parents are going to be successful they must include individualized case management and intensive employment services that include job placement and retention services. (U.S. DHHS, 2012, p. 3)

- Experience from these programs also shows that fully integrating responsive child support practices into employment interventions for noncustodial parents is critical; in fact, programs led by child support agencies have had better outcomes. (U.S. DHHS, 2012, p. 3)

- Research suggests that greater involvement in children's lives may be a motivating factor behind greater financial support. The fatherhood component has varied, but the most successful model appears to be a peer support model. (U.S. DHHS 2012, p. 4)

These program elements—case management, intensive employment services, responsive child support practices and peer support and parenting—became the main features of the CSPED design. OCSE required that grantees (states) enroll participants who had established paternity, were being served by the child support program, and were either not regularly paying child support or were expected to have difficulty making payments due to lack of regular employment. Using these eligibility criteria, grantees set out to find and recruit eligible noncustodial parents. Recruitment into the CSPED study began in October 2013 and continued through September 2016. Recruitment efforts culminated in grantees enrolling 10,161 eligible noncustodial parents into the study, of whom 1428 were in Wisconsin.

While OCSE required some particular services and prohibited the use of grant funds for some other services, grantees also had some level of flexibility in the types of services provided. Core services included:

- *Case Management*. Each CSPED participant was to be assigned a case manager to assess their needs, assist them in obtaining services, and monitor their progress.

- *Enhanced Child Support Services*. OCSE directed grantees to offer expedited review of child support orders, order modification if appropriate, and temporary abeyance of certain enforcement tools while participants were actively engaged in the program. In addition, OCSE encouraged CSPED grantees to negotiate potential reductions in past-due amounts owed to the government (state-owed arrears) when participants successfully met program goals.

- *Employment*. OCSE expected all programs to include job search assistance, job readiness training, job placement services, job retention services, and rapid reemployment services immediately following job loss. OCSE also encouraged grantees to include: short-term job skills training, on-the-job training, vocational training, education directly related to employment, and work supports, such as transportation assistance.

- *Parenting*. CSPED grantees were to provide participants with 16 hours of parenting classes with peer support that covered personal development, responsible fatherhood, parenting skills, relationship skills, and domestic violence.

Grantees were also required to develop a domestic violence plan, in consultation with domestic violence experts. Documentation of the services offered by each grantee and the organizations that delivered them (since child support agencies contracted with other agencies for selected services) can be found in the implementation report (Noyes, Vogel, & Howard, 2018). Grantees provided these services through September 2017.

The CSPED impact evaluation, described in Cancian, Meyer and Wood (2019) and with more detail in Cancian, Meyer, Wood, et al. (2019), used a random assignment research design. At study enrollment, program applicants were randomly placed into one of two research groups: (1) an extra services group that was eligible for CSPED services; or (2) a regular services group that was not. Study participants were divided equally across the two groups. A random assignment design ensures that, on average, the initial characteristics of the research groups are very similar. Therefore, any differences that emerge between the groups that are too large to be due to chance can be attributed to the effect of the program.

Over the three-year period, across all the grantees, more than 5,000 noncustodial parents were randomly assigned to the extra services group and more than 5,000 to the regular services group. We compared the groups across a wide variety of characteristics to see if they were equivalent at the point of random assignment (Cancian, Meyer, Wood, et al., 2019, Table 1.1). The groups were statistically equal on baseline measures of nearly all variables tested.[2] The results suggest that the randomization process worked. The evaluation estimates "intent-to-treat" impacts, wherein all sample members are included in the analysis regardless of the amount of service they received. Intent-to-treat impact estimates preserve the integrity of the random

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[2] There were small differences in the proportion with three nonresident children and mean Temporary Assistance for Needy Families (TANF) benefits received by custodial parents associated with participants. We control for these characteristics in all impact estimates.

assignment research design and answer the question: "What is the effect of offering program services to eligible participants?" The evaluation uses a regression model that controls for the characteristics of participants measured at baseline to improve the precision of estimates. It weights the estimated impacts of the eight grantees equally to measure the average effect of CSPED across the eight grantees. Separate results are also calculated for Wisconsin (and each of the grantees).

The impact analysis examined whether those in the extra services group actually received more services than those in the regular services group, using noncustodial parent reports of various types of services received in the 12-month follow-up survey. The analysis showed that CSPED did increase the amount of child support, employment, and parenting services noncustodial parents received, and reduced the likelihood of punitive child support enforcement actions during the first year.

Consistent with current best practice (Schochet, 2009), we selected a small number of confirmatory outcomes in advance of analysis, choosing 14 outcomes in three areas: (1) child support, (2) employment and earnings, and (3) parenting. Nine outcomes were measured over the first year after random assignment, the remaining five were measured over the first two years. We used both administrative records and responses to a follow-up survey (taken about one year after random assignment), as each data source has strengths and weaknesses.

The full set of results for all grantees can be found in the CSPED impact report (Cancian, Meyer and Wood, 2019) and are summarized here (all reported results $p < .05$, except where noted):

- CSPED had no effect on the confirmatory measure of child support compliance.
- CSPED reduced current child support orders by $15 to $16 per month.

- CSPED led to a small reduction in current child support payments, of about $4 to $6 per month over the first two years. ($p < .10$)

- CSPED increased satisfaction with child support services.

- CSPED had no effect on the confirmatory measures of participants' employment.

- CSPED increased participants' earnings by about 4 percent in the first year, based on administrative data. CSPED had no significant effect on earnings in the first year, based on survey data.

- CSPED increased noncustodial parents' sense of responsibility for children.

The CSPED impact report also includes results for Wisconsin's SPSK program (Appendix Table A.8). In Wisconsin, the only statistically significant result was for satisfaction with child support services: 70 percent of those in the extra services group were satisfied, compared to 53 percent of those in the regular services group ($p < .01$). Although there was not a statistically significant impact on compliance, in the first year after entering the program, payments averaged 39.4 percent of what was due among those in the extra services group, compared to 38.3 percent of those in the regular services group.

DATA, MEASUREMENT, AND ANALYTIC STRATEGY

Data

Our data are drawn from the CSPED impact analysis (Cancian, Meyer, and Wood, 2019). Specifically, we use CSPED baseline and follow-up survey data, linked to administrative child support records, for CSPED extra services (treatment) and regular services (control) group participants. The baseline survey was collected at the time of CSPED randomization. It provides demographic and other information that we use as covariates in our analyses. Participants who enrolled in the first 22 months of the three-year CSPED enrollment period were included in the

follow-up survey, conducted approximately 12 months after enrollment.[3] The follow-up survey

includes questions related to services received since randomization, as well as information about

experiences with the child support program, earnings, employment, and parenting attitudes and

behaviors. The state administrative records provide data related to child support actions (e.g.,

order modification, license suspensions and reinstatements), as well as child support paid and

owed and child support order compliance both before and after enrollment. As in the CSPED

impact analysis, we conduct our analyses using five multiply-imputed datasets to account for

missing data on the key variables of interest. Our measures are consistent with those from the

national CSPED impact evaluation.[4]

Sample

Our primary sample includes all Wisconsin CSPED participants who completed the

follow-up survey and had non-missing data for child support, employment, and parenting service

receipt (these variables were not imputed for the CSPED impact study). This results in an

analytic sample of 590 Wisconsin cases: 296 in the extra services group and 294 in the regular

services group.[5] We also provide limited information on analyses with an analogous sample of

participants from all eight grantees—that is, those in the eight-state CSPED sample who

completed the follow-up survey and for whom we have non-missing data for all measures of

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[3]Ninety percent of participants who completed the follow-up survey in Wisconsin did so between 12 and 19 months after randomization.

[4]For a complete description of the data, see Cancian, Meyer, Wood, et al. 2019.

[5]A total of 1,428 participants were randomized in Wisconsin, with 715 assigned to the extra services group and 713 assigned to the regular services group. From this sample, we exclude 528 participants (265 in the extra services group and 263 in the regular services group) who did not enroll in CSPED in the first 22 months (the sampling frame for the survey). We also exclude those in the sampling frame who did not complete the survey (270 participants, of whom 129 were extra services and 141 were regular services) and 40 cases with missing service receipt data (25 extra services and 15 regular services). Service receipt data was not imputed for the CSPED impact analyses.

service receipt as well as child support compliance (N= 3,898; 1,981 in the extra services group and 1,917 in the regular services group).

Overview of Approach

As in the CSPED impact report analyses, we are interested in the average impact of CSPED for all noncustodial parents assigned to the extra services group, regardless of whether they actually participated in (took up) CSPED services. As such, estimates for the effect of extra services on any of the outcomes represent *intent-to-treat* effects rather than *treatment-on-the-treated* effects.

Measurement

Outcomes

Our analyses are focused on selected intermediate outcomes from the CSPED impact evaluation—satisfaction with child support services, earnings, and sense of responsibility for children—and the primary outcome, child support compliance. We examine these outcomes one year after enrollment, measuring them in the same way they were measured in the CSPED impact report:

- *Satisfaction with child support services* consists of a binary indicator (1 = yes) that the participant "agreed" or "strongly agreed" with the statement "I am satisfied with the experiences I have had with the child support program since [random assignment date]."

- *Earnings* are measured using self-reported survey data on total amount earned from all sources during the 12-months following random assignment. We use survey, rather than administrative, data because the survey data captures formal and informal earnings, whereas administrative records include only formal earnings. Earnings are scaled in $1,000 increments.

- *Sense of responsibility for children* is assessed via a four-item index that asked about noncustodial parents' attitudes towards (1) whether noncustodial parents should support their children financially; (2) whether they should be involved in their children's lives; (3) whether they should provide financial support for their children, even if the custodial parent has a new partner; and (4) whether they should provide financial support for their

children even if the custodial parent has a child with a new partner. Each item was measured on a 5-point Likert-like scale. We average responses across index items to produce an overall measure of sense of responsibility for children.

- *Child support compliance* is measured as the ratio of the amount of child support paid to the amount due in the first year (12 months) following random assignment. Specifically, compliance is calculated as total current child support payments divided by total amount of current child support ordered across the 12 months after randomization.

Service Receipt

To get information on all the services received (by both those in the regular services group and those in the extra services group), we cannot use CSPED workers' reports of the services they delivered (since these were systematically recorded only for those in the extra services group and those in the regular services group may have received some similar services). As a result, we measure service receipt by noncustodial parent reports, as we did in the impact evaluation.

- *Child support services received* is measured as the number of hours of child support services respondents reported receiving over the period since randomization. (The question is framed as "contact with a specific person in the child support program who helped you address issues related to your child support case.") We also conducted supplemental analyses for the Wisconsin sample using two alternative measures of child support service receipt drawn from the administrative data: (1) a measure of child support services received by the noncustodial parent that the individual may feel are supportive; and (2) a measure of child support services to which the noncustodial parent was subjected that the individual may feel are punitive. Both of these are measured in the year after randomization. We construct these measures by summing dichotomous indicators of whether specific types of child support actions occurred. For our measure of supportive service receipt, we sum indicators for whether the individual had an order decreased or a license suspension removed; if both of these actions occurred for an individual, this measure would be equal to two. Our measure of punitive service receipt sums indicators for whether the individual was subjected to bench warrants, contempt hearings, license suspensions, order increases, liens, and levies; individuals experiencing all of these types of services would have a punitive service measure equal to six.

- *Employment services received* is measured as the total number of hours respondents reported participating in (1) job readiness classes, (2) one-on-one job readiness assistance, and (3) a job training program, during the period since randomization.

- *Parenting services received* is measured as the number of hours respondents reported participating in parenting services, which could include time spent in parenting classes, groups, or workshops, during the period since randomization.

These measures do not capture all services received (for example, case management is not included), but they are the best measures available because they are consistently measured across grantees and across those assigned to the regular services and the extra services groups.

Covariates

Our regression models adjust for the baseline covariates used in the CSPED impact analysis. Covariates were selected because of their potential relationship to child support compliance, earnings, parenting outcomes, or satisfaction with child support services. Covariates drawn from the baseline survey include demographic characteristics (for example, the noncustodial parent's sex, age, race and ethnicity, and marital status at baseline), measures of economic status and potential (for example, educational attainment, whether the noncustodial parent received Supplemental Nutrition Assistance Program (SNAP) benefits, their reported level of depression, and whether they were ever convicted of a crime), and measures of relationships with children (for example, whether children are marital or nonmarital and whether the noncustodial parent provided informal child support in the 30 days prior to enrollment). We also include as covariates measures of CSPED's confirmatory outcome variables that cover the period prior to enrollment, including the percentage of quarters that the noncustodial parent was employed and their total formal earnings, both measured in the year before enrollment and taken from administrative employment records, and the average monthly child support owed and paid and the compliance rate in the year before enrollment, taken from administrative records of the child support program. For analyses using all grantees, we also control for state. The full set of covariates is listed on Table 1.

Table 1. Descriptive Statistics for Wisconsin

	Statistical significance of difference in means		
	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage	
Service Receipt, Intermediate Outcomes, and Primary Outcome			
Employment service hours	27.65	13.94	***
	(3.22)	(2.64)	
Child support services	1.84	0.46	***
	(0.25)	(0.10)	
Number of types of punitive child support actions	0.71	0.85	*
	(0.05)	(0.05)	
Number of types of supportive child support actions	0.37	0.29	+
	(0.03)	(0.03)	
Parenting service hours	8.95	0.97	***
	(1.07)	(0.30)	
Earnings (not rescaled)	$12,776.81	$12,352.81	
	($895.34)	($846.59)	
Satisfaction with the child support system	71.33%	53.68%	***
Sense of responsibility for children	4.24	4.26	
	(0.03)	(0.03)	
Child support compliance	41.78%	37.07%	+
	(1.88%)	(1.67%)	
Covariates			
Male	84.93%	87.46%	
Age			
<25	14.72%	13.95%	
25–40	54.13%	66.34%	**
>40	31.15%	19.71%	**
Race/ethnicity			
Hispanic/Latinx	13.37%	12.47%	
Non-Hispanic white	51.56%	49.01%	
Non-Hispanic black	27.39%	31.84%	
Non-Hispanic other, multiracial, don't know, refused	7.68%	6.68%	
Marital status			
Married	11.59%	6.94%	+
Divorced/separated/widowed	28.96%	28.99%	
Never married	59.46%	64.08%	
Educational attainment			
<HS diploma	26.11%	29.00%	
HS diploma or GED	41.84%	42.68%	
Some college/associate's degree	29.82%	27.09%	
Bachelor's degree or more	2.24%	1.23%	
Marital or nonmarital children[a]			
All children nonmarital	71.53%	76.93%	
All children marital	14.18%	10.87%	
Both nonmarital and marital	13.68%	12.20%	

(table continues)

Table 1, continued

	Statistical significance of difference in means	
	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Number of custodial parents for minor children [a]		
1 partner	47.93%	47.24%
2 partners	31.46%	33.54%
3 partners	12.97%	13.57%
4+ partners	7.03%	5.65%
Number of nonresident children [a]		
No nonresident children	5.46%	5.19%
1	44.46%	38.83%
2	24.43%	29.88%
3	13.42%	14.59%
4+	11.61%	11.45%
Number of coresident children [a]		
No coresident children	66.67%	71.15%
1	20.75%	20.33%
2	7.24%	4.05%
3	3.68%	2.36%
4+	1.05%	2.10%
Age of youngest nonresident child [a]		
<5	34.50%	36.06%
5–9	26.64%	31.71%
10–14	24.25%	19.11%
15–18	8.54%	7.93%
No noresident children	5.46%	5.19%
Age of oldest nonresident child [a]		
<5	16.32%	15.67%
5–9	25.11%	28.29%
10–14	30.04%	26.79%
15–18	22.46%	24.06%
No noresident children	5.46%	5.19%
Average monthly current child support paid in year before random assignment (administrative records)	$1,137.54 ($88.51)	$1,041.93 ($79.68)
Average monthly child support owed in year before random assignment (administrative records)	$3,306.40 ($133.04)	$3,147.68 ($126.41)
Child support compliance in year before random assignment (amt paid/amt owed) (administrative records)	31.12% (1.78%)	32.14% (1.77%)
Provided informal cash or noncash support to any child in the last 30 days	69.70%	70.02%
Percentage of quarters employed in year before random assignment (administrative records)	51.25% (2.27%)	51.04% (2.27%)

(table continues)

Table 1, continued

	Statistical significance of difference in means	
	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Total earnings in year before random assignment (administrative records)	$6,886.07	$6,166.68
	($662.21)	($538.16)
Received SNAP in 30 days before random assignment	52.70%	47.99%
Average monthly TANF benefits received by CP in year before random assignment (administrative records)	$69.23	$58.12
	($11.04)	($9.06)
Ever convicted	76.41%	73.63%
Noncustodial parent reported depression		
Not depressed	69.97%	71.64%
Major depression	25.87%	23.66%
Severe major depression	4.16%	4.70%
Motivation to participate in CSPED		
Not at all/a little/somewhat	12.24%	12.54%
Very	44.97%	42.59%
Extremely	42.79%	44.88%
N	296	294

Notes: Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10. Weighted proportions and means presented.
[a]Does not sum to 100% for extra services group because a small number of noncustodial parents (<1%) had no minor children.

Analytic Strategy

As noted above, the CSPED theoretical model of change included several sequential

steps hypothesized to ultimately increase compliance with child support orders. Specifically, the

model predicts five paths of change:

(1)   the extra services group would receive more enhanced child support, employment, and
        parenting services than the regular services group;

(2)   enhanced child support services would improve participants' attitudes about (satisfaction
        with) the child support program;

(3)   increased employment services would lead to higher earnings;

(4)   increased parenting services would lead to an increased sense of responsibility for
        children; and,

(5)   these intermediate outcomes (satisfaction, earnings, sense of responsibility) would result
        in greater compliance with child support orders.

Our analyses of the Wisconsin CSPED sample aim to further unpack the findings from

the national CSPED impact report by focusing explicitly on each step in the theorized change

process. To do this, we first present weighted simple bivariate mean differences in service

receipt, the intermediate outcomes, and child support compliance, as well as the baseline

covariates, by extra services or regular services group status. Given that families were randomly

assigned to extra services or regular services conditions, the mean differences in outcomes

should accurately reflect the effect of CSPED assignment. Nonetheless, as was done in the main

CSPED impact report, we control in our regression models for a number of background

characteristics for two reasons. First, doing so adjusts for any small differences in these

characteristics across randomization groups that result from chance. Second, doing so improves

the precision of the estimates.

We estimate a series of multivariate analyses to examine the extent to which service receipt and the intermediate outcomes may act as mechanisms linking extra services assignment with child support compliance. Our main estimation strategy is a (pseudo) path analysis—estimated using ordinary least square (OLS) regression—in which we examine the various components of the CSPED model. Following Yoshikawa and colleagues (2010), we use an interaction approach to explore total effects and examine indirect effects when we include the hypothesized mediators (services and intermediate outcomes).[6] All models are weighted using revised CSPED survey weights.[7]

We begin in Model 1 by estimating separate equations in which we regress a specific type of service receipt (child support, employment, and parenting) on the indicator that the participant was assigned to the extra services group and the full set of covariates. This is our test of the first path, whether those who were in the extra services group actually received more services. Second, we estimate the effect of being in the extra services group on each intermediate outcome (satisfaction, earnings, and sense of responsibility) by regressing the outcome on extra services status and the covariates (Model 2). This is the test of paths 2, 3, and 4, examining the effect of CSPED extra services group assignment on each intermediate outcome. Models 1 and 2 are essentially the models used for the main analysis in the CSPED impact report.

In our next two models, we begin to estimate relationships across random-assignment groups, services received, and the intermediate outcomes. In Model 3, we individually regress each intermediate outcome (satisfaction, earnings, and sense of responsibility) on being in the

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[6] We formally test for mediation using the bias-corrected bootstrap confidence interval method recommended by Hayes and Scharkow (2013). Estimates confirm results presented in OLS analysis.

[7] See Appendix 1 for more information about weighting used in these analyses.

extra services group and the receipt of the service hypothesized to affect it (child support, employment, and parenting). This allows us to examine whether receipt of that service has a direct influence on the related intermediate outcome, as well as whether the estimated effect of being in the extra services group is altered when accounting for service receipt. For example, if the estimated effect of extra services on satisfaction with the child support program is reduced in magnitude when child support services received is entered into the model, this would suggest that child support services are a mechanism (mediator) through which CSPED impacts satisfaction with the child support program (as was expected). In addition, if the coefficient of service receipt on the intermediate outcome is positive and significant, this implies that services were at least partially successful in reaching their aim. In Model 4, we add to Model 3 an interaction term between extra services status and service receipt. The interaction term captures the effect of receipt of the specific service in the context of being offered the full set of CSPED services. This approach provides insight into whether the effect of CSPED differs for those who participated in greater or lesser amounts of a particular service. For example, in addition to expecting that the link between experimental-group status and satisfaction with the child support system may be partially or fully accounted for by extra services receipt, we might also expect extra services participants who received more services to experience more satisfaction with the child support system than extra services participants who received fewer services.

After exploring the links among extra services assignment, service receipt, and the intermediate outcomes, we turn our focus to how extra services status, service receipt, and the intermediate outcomes may cumulatively affect child support compliance. Again we estimate a series of linear regression models. Model 1 is a regression of child support compliance on the extra services status indicator (and covariates), which produces the overall effect of CSPED extra

services assignment on compliance and is essentially the impact that was shown in the main report. In Model 2 we (simultaneously) add the child support, employment, and parenting service receipt measures to examine whether such services are potential mechanisms linking extra services status and compliance. This model estimates the full association of each type of service receipt with compliance, without adjusting for the possibility that some portion of that association may operate through the intermediate outcomes In Model 3, we replace the service receipt measures with the intermediate outcomes (satisfaction, earnings, sense of responsibility) to assess whether they may be potential mechanisms by which CSPED affects compliance. This model also helps us assess a feature of the theory of change model, exploring whether compliance is related to satisfaction with child support services, earnings, and sense of responsibility. The model assesses the full association of each intermediate outcome with compliance, without adjusting for the possibility that some portion of that association may reflect differences in service receipt.

Model 4 simultaneously includes both the service receipt and intermediate outcome measures (along with experimental-group status and the covariates). Comparing estimates across models allows us to examine the extent to which the full associations of extra services status (Model 1), service receipt (Model 2), and the intermediate outcomes (Model 3) may be partially or fully explained by the other factors. If the coefficient on (for example) child support services were significantly related to compliance in Model 2, but not in Model 4, this suggests that services affect satisfaction, and satisfaction affects compliance, but that the link between services received and compliance is fully explained by increased satisfaction. Model 5 adds an interaction between extra services status and service receipt and between extra services status and intermediate outcomes, and Model 6 adds interactions between service receipt and intermediate

outcomes and between extra services status and service receipt and intermediate outcome. In this way, we can examine whether extra services group assignment is associated with increases in child support, employment, and parenting services, as well as satisfaction, earnings, and sense of responsibility for children, and whether any of these pathways lead to increased compliance. As was the case with our analyses of the intermediate outcomes, this strategy allows us to examine whether any link between extra services status and compliance is, for example, greater for extra services group members who received more services and/or experienced greater increases in satisfaction than extra services group members who did not.

In addition to our OLS analyses, we estimate a systematic path model using a structural equation modeling (SEM) approach (Kline, 2011). This strategy allows us to simultaneously estimate all of the pathways described above in a single model that can be easily pictorially presented so as to lend itself to more intuitive interpretation, particularly with respect to indirect effects, than the OLS strategy. Our conceptual model is presented in Figure 1. Notably, the model is quite complex and produces 16 direct effects and an additional 12 indirect effects of interest. It also allows us to account for potential correlations among the service receipt measures, as well as among the intermediate outcomes (shown as gray arrows in the figure; we do not present these estimates). We use the delta method (Sobel test) to evaluate indirect effects.

There is an ongoing debate as to which SEM fit statistics are preferable, as well as what values indicate good, adequate, and poor fit, in particular circumstances (Kline, 2011). As such, we present a range of fit statistics for each model, including the Bayesian information criterion (BIC), Akaike information criterion (AIC), chi-square statistic, comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean-square residual (SRMR). Following the recommendations of Kaplan

Figure 1. Full Estimation Model
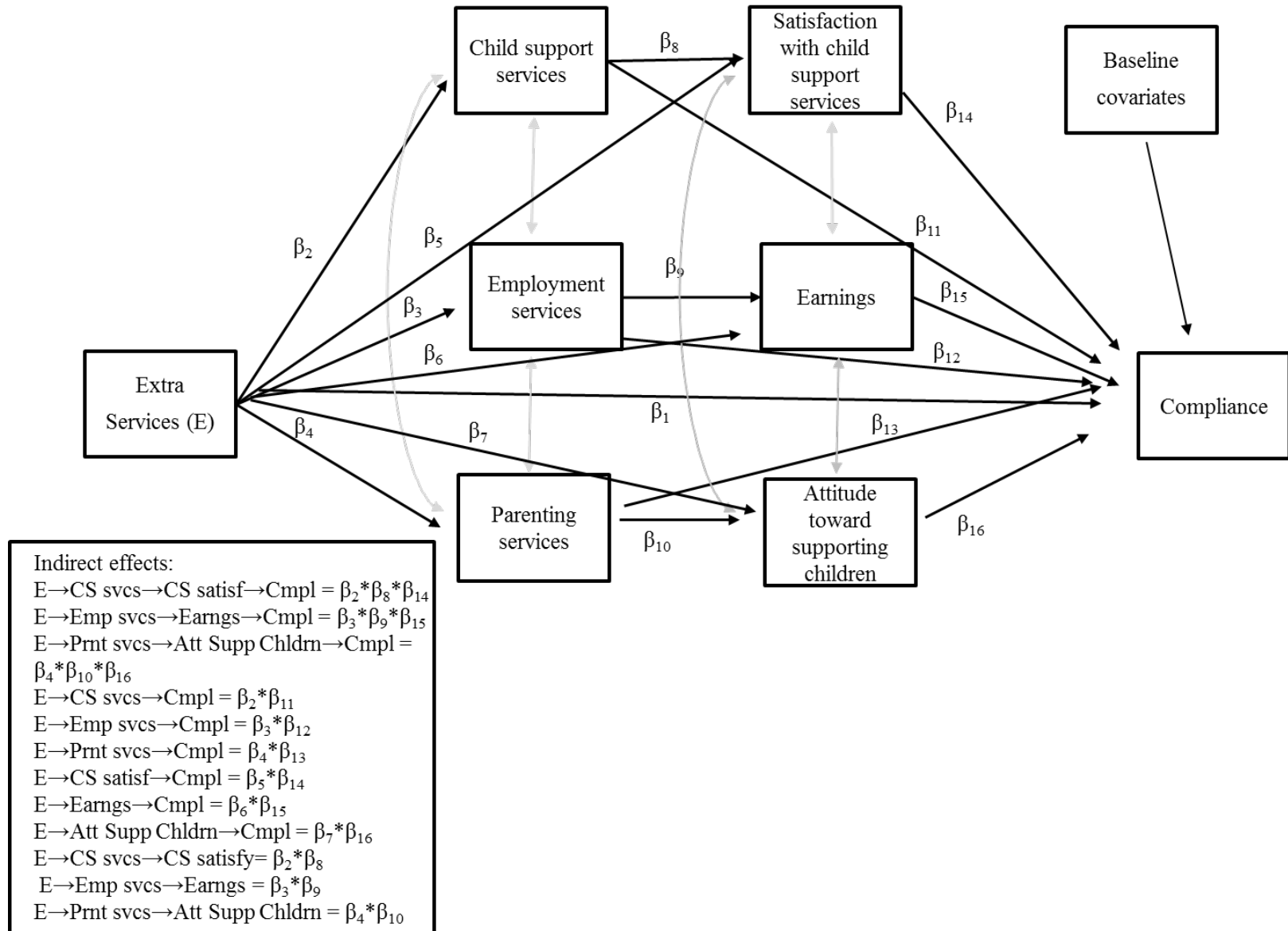
(2009) and MacKinnon (2008), however, we rely most heavily on the RMSEA, for which a value of less than .05 is generally considered to indicate good fit.

In summary, the previously-published impact analysis did not find that CSPED had an effect on compliance. This report extends that analysis by examining the CSPED theory of change in which CSPED was supposed to lead to more services, which would then lead to intermediate outcomes, culminating in higher child support compliance (the amount paid divided by the amount owed). In this report we use two types of analyses to examine these paths, exploring why the CSPED program did not achieve its intended result.

RESULTS

Descriptive Statistics

Descriptive statistics for the CSPED extra services and regular services groups in Wisconsin are presented in Table 1. The raw data indicate that participants in the extra services group received significantly more hours of child support services (1.8 versus .5), employment services (27.7 versus 13.9), and parenting services (9.0 versus 1.0) than those in the regular services group. For our alternative measures of child support services, those in the extra services group received marginally significantly (p<.10) more supportive child support services (.37 versus .29) and slightly fewer punitive child support services (.71 versus .85). In terms of the intermediate outcomes, the extra services group reported significantly higher satisfaction with the child support program (71 percent versus 54 percent). However, there were no differences in earnings or sense of responsibility for children. Finally, in contrast to the results in the CSPED impact report for the full Wisconsin sample, the raw data for those who entered SPSK in the first 22 months suggest that the extra services group had a marginally significantly ($p < .10$) higher level of child support compliance than the regular services group (42 percent versus 37 percent).

Most Wisconsin CSPED participants were male (85 percent). CSPED participants are a very disadvantaged sample, as noted in other reports on CSPED participants (Cancian, Guarin, Hodges, and Meyer, 2018). More than two-thirds had a high school education or less, and more than a quarter had not attained a high school diploma or GED. Total earnings in the year before random assignment were, on average, less than $7,000 and, on average, sample members had been employed in only two of the four quarters prior to random assignment; about half of respondents received SNAP in the 30 days prior to randomization. In addition, roughly three-quarters of respondents had been convicted of a crime at some point in their lives, and more than a quarter reported symptoms of major or severe depression. Child support compliance in the year prior to randomization was also low; noncustodial parents in the sample, on average, paid just under a third of what they owed. For the most part, there were no significant differences between the extra services and regular services groups on the background characteristics, with the exception of age and marital status: those in the extra services group were more likely to be older (over age 40) and marginally significantly ($p < .10$) more likely to be married (12 percent versus 7 percent).[8] Including age and marital status in our models controls for these differences that occurred (presumably) by chance.[9]

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[8]These differences are larger in the Wisconsin sample than in the full eight-state CSPED sample (see Appendix 3, Table 1).

[9]With 57 covariates and a statistical significance threshold of .05 and, we would expect chance differences between the extra services and regular services groups for three covariates, but there are only two. With a statistical significance threshold of .10, we would expect six of the 57 covariates to differ by chance; only three do.

Regression Results

Child Support Services and Satisfaction with the Child Support Program

Table 2 shows results from our first set of regressions, which focus on links among extra services group assignment, child support services received, and satisfaction with the child support program. The estimate from Model 1 indicates that the extra services group did receive more hours of child support services than the regular services group. The difference in hours is highly statistically significant, but not particularly large, representing 1.5 hours over the course of approximately a year. In contrast, the Model 2 estimate shows that the extra services group was 17 percentage points (31 percent) more likely to report being satisfied with the child support program than the regular services group—a large and statistically significant difference. These estimates are comparable to those reported in the CSPED impact report.

Model 3 examines whether child support service hours potentially mediate the effect of extra services group assignment on satisfaction; that is, whether the reason the extra services group had higher satisfaction was that they received more child support services. The results provide little support for that hypothesis. Comparing Model 2 and 3, the extra services coefficient is only slightly attenuated with the introduction of service receipt to the model, and the coefficient for service receipt is small and marginally significant ($p < .10$). That child support service receipt does not mediate the association of extra services group assignment and satisfaction is echoed by the results from Model 4, which indicate that the extra services group had higher satisfaction than the regular services group, but that those in the extra services group

Table 2. OLS regression results for child support services and satisfaction with the child support program in Wisconsin

	Model 1	Model 2	Model 3	Model 4
	Effect of CSPED on Service Receipt	Effect of CSPED on Satisfaction	Effect of CSPED and Services on Satisfaction	Interactive Effect of CSPED and Services on Satisfaction
Extra Services Group (E)	1.499***	0.169***	0.154***	0.154***
	(0.302)	(0.040)	(0.041)	(0.043)
Child Support Service Hours			0.010+	0.009
			(0.005)	(0.008)
E X Child Support Service Hours				0.000
				(0.010)
Constant	-0.729	0.521**	0.544**	0.528**
	(1.052)	(0.181)	(0.172)	(0.181)
Observations	590	590	590	590

Notes: Robust standard errors in parentheses.
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
All models include all control variables in Table 1.

who received more services experienced no more satisfaction than extra services group members who received fewer services.[10]

We conducted three sets of supplemental analyses for these models. First, since satisfaction is a dichotomous variable, we estimated the models for satisfaction using logit instead of OLS regressions. Results were substantively consistent with those from the OLS models (see Appendix 2, Table 1). Second, we examined the sensitivity of these results to two alternative measures of child support services: punitive service receipt (bench warrants, contempt hearings, license suspensions, order increases, liens, levies) and supportive service receipt (order decreases, removal of license suspensions). These results are presented in Appendix 2, Table 2. We found that the extra services group received .12 (16 percent) fewer punitive services than the regular services group (marginally significant at $p < .10$) but no more supportive services. We also found punitive services, in general, to be associated with decreased satisfaction with the child support program, regardless of random assignment group, but found no association of supportive services with satisfaction with the child support program. Finally, we found little evidence to suggest that punitive or supportive services are significant pathways linking extra services receipt with satisfaction. As a whole, the results from these sensitivity analyses generally confirm those from our primary analyses: both sets of analyses show that the extra services group received more services and that those in the extra services group were more satisfied, even when the level of services is controlled for.

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[10]For the most part, these results are substantively consistent between the Wisconsin and eight-state CSPED samples: in the full CSPED sample, the extra services group received more hours of service and were more likely to be satisfied (even when services were included in the model), and those who received more services were more likely to satisfied. One difference is that, in the eight-state sample, hours of services were not significantly related to satisfaction for those in the regular services group (see Appendix 3, Table 2).

Employment Services and Earnings

Table 3 shows results from regressions focusing on links among being in the extra services group, employment services, and earnings. Here, we find that the extra services group received approximately 13.6 (98 percent) more hours of employment services than the regular services group (Model 1), but that there was no difference between groups in earnings over the year following randomization (Model 2). We also find no evidence linking employment service hours to earnings, nor linking being in the extra services group to earnings via increased employment service receipt (Models 3 and 4).[11] Thus, while it is clear that the extra services group received more employment services, the predicted pathways to higher earnings are not supported.

Parenting Services and Sense of Responsibility for Children

Results from models examining links among extra services assignment, parenting services receipt, and sense of responsibility for children are presented in Table 4. The extra services group reported approximately 8 more hours of parenting services than the regular services group (Model 1), which received an average of about one hour of parenting services in the period following random assignment. At the time of the follow up survey, the groups did not differ in their sense of responsibility for children. Moreover, we find no evidence that increased parenting services are associated with a greater sense of responsibility for children, nor that they serve as a mechanism linking extra services group status to sense of responsibility for children (Models 3 and 4). Thus, while it is clear that the extra services group received more parenting

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[11]These results are substantively consistent with those for the eight-state CSPED sample (see Appendix 3, Table 3). One exception is that in the full sample, Model 3 shows a small negative relationship between hours of service and earnings ($p < .10$). Some employment interventions have shown negative effects in the short term, with those who are spending more time with service providers having less earnings in the short term.

Table 3. OLS regression results for employment services and earnings in Wisconsin

	Model 1	Model 2	Model 3	Model 4
	Effect of CSPED on Service Receipt	Effect of CSPED on Earnings	Effect of CSPED and Services on Earnings	Interactive Effect of CSPED and Services on Earnings
Extra Services Group (E)	13.62**	-0.668	-0.673	-0.400
	(4.458)	(1.161)	(1.165)	(1.264)
Employment Service Hours			0.000	0.008
			(0.012)	(0.017)
E X Employment Service Hours				-0.014
				(0.024)
Constant	-16.09	-2.192	-2.187	-2.423
	(21.45)	(5.738)	(5.762)	(5.796)
Observations	590	590	590	590

Notes: Robust standard errors in parentheses.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$
All models include all control variables in Table 1.

Table 4. OLS regression results for parenting services and sense of responsibility for children in Wisconsin

Variables	Model 1 Effect of CSPED on Service Receipt	Model 2 Effect of CSPED on Sense of Responsibility	Model 3 Effect of CSPED and Services on Sense of Responsibility	Model 4 Interactive Effect of CSPED and Services on Sense of Responsibility
Extra Services Group (E)	8.005***	-0.020	-0.039	-0.034
	(1.124)	(0.048)	(0.051)	(0.052)
Parenting Service Hours			0.002	0.005
			(0.002)	(0.005)
E X Parenting Service Hours				-0.003
				(0.005)
Constant	-5.758	3.810***	3.825***	3.819***
	(4.803)	(0.224)	(0.225)	(0.225)
Observations	590	590	590	590

Notes: Robust standard errors in parentheses.
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
All models include all control variables in Table 1.

services, the predicted pathways to more responsibility are not supported in Wisconsin (though more support for this hypothesis is found in the full CSPED sample). [12]

Compliance

The final set of OLS models examines potential mediators through which extra services group assignment may ultimately affect child support compliance (see Table 5). None of these models indicate a statistically significant effect of being in the extra services group on compliance. While Table 1 (the simple comparison) showed a marginally statistically significant 4.7 percentage point difference in compliance between those in the extra services and regular services groups during the year after random assignment, the addition of control variables in Model 1 results in a smaller difference (3.4 percentage points) that is no longer statistically significant. [13]

Model 2 indicates that there are no significant associations between the amount of child support, employment, or parenting services received and compliance. In Model 3, we find that the intermediate outcomes of earnings and satisfaction are related to compliance, as predicted. Greater earnings of $10,000 are associated with 5 percentage points (14 percent) greater compliance, and reporting being satisfied with the child support program is associated with 6

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[12]The full CSPED sample also shows more parenting services for those in the extra services group (6.1 hours); see Appendix 3, Table 4. Other results are less consistent with those in Wisconsin. Specifically, in the full CSPED sample, extra services group assignment is associated with a greater sense of responsibility for children in Model 2, and this relationship holds when services are added in Model 3 (though it becomes marginally significant, $p < .10$). Hours of parenting services are associated with a significantly greater sense of responsibility for children in Model 3, though not when we add interactions in Model 4.

[13]In the CSPED impact report, the difference in compliance between the two groups in Wisconsin (1.1 percentage points) was also not significant. The higher estimate of 3.4 percentage points in Model 1 is largely because the impact was greater among those who entered during the first 22 months (the sample here) than among those who entered during the full three-year intake period.

Table 5. OLS regression results for pathways from CSPED to compliance in Wisconsin

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Effect of CSPED on Compliance	Effect of CSPED and Service Receipt on Compliance	Effect of CSPED and Intermediate Outcomes on Compliance	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance w/ Treatment*Service Receipt and Treatment*Intermediate Outcome Interactions	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance: All Paths
Extra Services Group (E)	0.034	0.037	0.028	0.036	0.008	-0.001
	(0.024)	(0.025)	(0.023)	(0.024)	(0.176)	(0.187)
Earnings			0.005***	0.005***	0.004**	0.003*
			(0.001)	(0.001)	(0.001)	(0.001)
Satisfaction			0.055*	0.058*	0.018	0.015
			(0.024)	(0.024)	(0.033)	(0.034)
Attitude to Supporting Children			0.022	0.025	0.032	0.032
			(0.021)	(0.021)	(0.029)	(0.030)
E X Earnings					0.003	0.002
					(0.002)	(0.002)
E X Satisfaction					0.092+	0.112*
					(0.050)	(0.052)
E X Responsibility					-0.013	-0.013
					(0.041)	(0.044)
Employment Service Hours		-0.000		-0.000+	-0.000	-0.001*
		(0.000)		(0.000)	(0.000)	(0.000)
Child Support Service Hours		-0.001		-0.003	-0.005	-0.006
		(0.004)		(0.003)	(0.007)	(0.035)
Parenting Service Hours		0.001		0.000	0.001	-0.012
		(0.001)		(0.001)	(0.002)	(0.019)
E X Employment Service Hours					-0.000	-0.000
					(0.001)	(0.001)
E X Child Support Service Hours					0.001	0.011
					(0.008)	(0.036)
E X Parenting Services Hours					-0.000	0.012
					(0.002)	(0.021)

(table continues)

Table 5, continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Effect of CSPED on Compliance	Effect of CSPED and Service Receipt on Compliance	Effect of CSPED and Intermediate Outcomes on Compliance	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance w/ Treatment*Service Receipt and Treatment* Intermediate Outcome Interactions	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance: All Paths
Employment Service Hours X Earnings						0.000+
						(0.000)
Child Support Service Hours X Satisfaction						0.003
						(0.036)
Parenting Service Hours X Responsibility						0.003
						(0.004)
E X Earnings X Employment Service Hours						-0.000
						(0.000)
E X Satisfaction X Child Support Service Hours						-0.014
						(0.037)
E X Responsibility X Parenting Services Hours						-0.003
						(0.004)
Constant	0.172	0.167	0.072	0.051	0.074	0.069
	(0.112)	(0.110)	(0.136)	(0.136)	(0.163)	(0.166)
Observations	590	590	590	590	590	590

Notes: Robust standard errors in parentheses.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$
All models include all control variables in Table 1.

percentage points (16 percent) greater compliance. These findings are robust to the inclusion of child support, employment, and parenting service hours in the model (Model 4).

Estimates from Model 5, in which interactions between being in the extra services group and services received and between being in the extra services group and intermediate outcomes are added to the model, reveal that the association of greater satisfaction with greater compliance is particular to the extra services group (marginally significant at $p < .10$), while the association between earnings and compliance does not vary between the groups. Results from Model 6, in which we examine the full set of potential mediators linking extra service group assignment to child support compliance, provide little evidence to support our mediation hypotheses, with the exception that the modest link between extra services group assignment, increased satisfaction, and increased compliance seen in Model 5 continues. Again, although earnings remain significantly associated with child support compliance, there are no differences in this association for extra versus regular services group status. In addition, we find a small association of greater employment service hours with less child support compliance (as in Model 4), which also does not vary between the extra services and regular services groups.[14] We note that the results from this model should be viewed with particular caution given the large numbers of interactions estimated using a relatively small sample, which leads to limited cell sizes and statistical power to detect effects.[15]

On the whole, the OLS results lead us to conclude that the hypothesized change model is only partially supported. Those in the extra services group did receive extra services of each

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[14]This is conceptually similar to the relationship between employment service hours and earnings in the full CSPED sample, which was seen in Appendix 3, Table 3.

[15]The effect of being in the extra services group on compliance is considerably smaller in the eight-state CSPED sample (see Appendix 3, Table 5) than it is in Wisconsin.

type, and they did have higher satisfaction with the child support program, but they did not have higher earnings or sense of responsibility for children. Finally, while earnings and satisfaction are linked to compliance, these results provide no evidence that the extra services group had higher compliance, and few of the links that were anticipated were strongly supported.

SEM Results

Figure 2 presents results from our SEM path analysis model, in which we simultaneously estimate the full set of hypothesized pathways linking extra services status, service receipt, the intermediate outcomes, and compliance. The model demonstrates adequate fit, with an RMSEA of .04. Figure 2 shows the paths that are statistically significant, including marginal significance ($p < .10$), as solid lines and those that are not statistically significant as dashed lines. Appendix 2, Table 3 displays estimates for all direct and indirect paths along with the corresponding 90% and 95% confidence intervals. Consistent with the OLS results (Model 1 in Tables 2–4), we find that extra services assignment is significantly linked to greater receipt of all three services—child support, employment, and parenting. We also find a direct effect of extra services group assignment with greater satisfaction with the child support program which, again, is consistent with our OLS estimate (Table 2, Model 2). In contrast to the OLS findings (and the impact analysis), those in the extra services group have marginally significantly ($p < .10$) greater compliance. This effect size, 4.3 percentage points (12 percent), is of relatively similar order of magnitude as that from Models 1–4 in Table 5, although the OLS estimates (Table 5) do not attain statistical significance. In interpreting the difference between the OLS and SEM results, it is important to consider that the SEM approach simultaneously estimates each segment of the full set of pathways potentially linking treatment to compliance. As such, relative to the OLS approach, the SEM approach more completely adjusts for the full range of associations among

Figure 2. Full Estimation Model Results: Wisconsin

Indirect effects:
Sum of indirect Tmt→Cmpl = -0.001
E→CS svcs→CS satisf→Cmpl = 0.001
E→Emp svcs→Earngs→Cmpl = 0.000
E→Prnt svcs→Att Supp Chldrn→Cmpl = 0.001
E→CS svcs→Cmpl = -0.005
E→Emp svcs→Cmpl = -0.005
E→Prnt svcs→Cmpl = -0.003
E→CS satisf→Cmpl = 0.010*
E→Earngs→Cmpl = -0.002
E→Att Supp Chldrn→Cmpl = -0.002
E→CS svcs→CS satisfy = 0.014+
E→Emp svcs→Earngs = 0.021
E→Prnt svcs→Att Supp Chldrn = 0.029*

Fit statistics:
AIC = 20896.549
BIC = 21154.976
χ^2 = 288.256
df = 144
RMSEA = 0.041
CFI = 0.687
TLI = 0.589
SRMR = 0.066

all of the components (treatment, service receipt, intermediate outcomes, and compliance) of the model. This includes adjusting for correlation between the error terms (representing shared unobserved factors) in estimation of each of the intermediate pathways for the service receipt categories as well as the intermediate outcomes. Thus, the difference between the direct treatment effect on compliance in the OLS and SEM approaches likely reflects that the SEM estimate includes unobserved factors (i.e., factors that are not included in the models) linking treatment assignment to compliance. In other words, the treatment group may have had other experiences or behavioral changes that are linked to compliance, but that we have not been able to measure.

Considering the other direct effects, the SEM estimates indicate that receiving more child support services is associated with greater satisfaction with the child support program (marginally significant at $p < .10$), and that receiving more parenting services is associated with greater responsibility for children. We find no association between employment services and earnings. In addition, the model suggests no significant links between either child support services or parenting services and compliance and, while receiving more employment services is marginally significantly associated with less compliance ($p < .10$), the effect size is too small to be substantively meaningful. Finally, the model reveals that greater satisfaction and greater earnings are both associated with greater compliance. These direct effect estimates are generally of the same direction as the OLS results, although more associations are statistically significant in the SEM.

The SEM approach also helps us see a few significant indirect effects, which are not estimated in the OLS model; these are shown at the bottom of Figure 2. For example, we see that in addition to a direct link between extra services group assignment and greater satisfaction,

there is also a marginally significant indirect link in that the extra services group received more child support services, which then led to more satisfaction. While there is no direct effect of being in the extra services group on sense of responsibility for children, there is an indirect effect in that those in the extra services group received more parenting services, and those with more parenting services exhibited more sense of responsibility for children. Finally, in addition to the marginally significant direct link between being in the extra services group and higher compliance, there is also an indirect link in that the extra services group has higher satisfaction, which then leads to higher compliance. On the whole, however, the totality of indirect effects (the sum of all of the indirect effects of extra services on compliance) for the full set of paths (mediators) hypothesized to link extra services group assignment to compliance is small, negative, and nonsignificant, providing very little support for the hypothesized model of change.[16]

SUMMARY, LIMITATIONS AND IMPLICATIONS

CSPED was a new approach to providing child support services to noncustodial parents who were behind in their payments and having difficulty with employment. Based on prior research, the intervention included enhanced child support services, employment services, and parenting services, all coordinated through case management. The approach was consistent with an underlying model in which each of these types of services would impact a different intermediate outcome: enhanced child support services would affect satisfaction with (and

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[16]The eight-state sample estimates shown in Appendix 3, Figure 1 are substantively consistent with the Wisconsin estimates (though they differ somewhat in magnitude), with one important exception. In Wisconsin, there is a marginally statistically significant direct effect in which those in the extra services group had higher compliance (4.3 percentage-point difference, $p < .10$); in the full CSPED sample, there is no direct effect of extra services on compliance (0.1 percentage-point difference). Appendix 3, Table 6 presents 95 percent and 90 percent confidence intervals for all estimates.

cooperation with) the child support program; employment services would lead to higher earnings; and parenting services would increase the sense of responsibility for children. These intermediate outcomes would then combine to increase compliance with child support orders. The intervention was evaluated using a random-assignment design and current best-practice methods. While the CSPED impact report found increases in each of the services and increases in satisfaction with the child support program, it found no effect on compliance, and no effect of the Wisconsin program on two of the three intermediate outcomes; earnings and sense of responsibility for children. This report extends the CSPED impact report by exploring the Wisconsin effects in more detail, examining the predicted paths to compliance using two different methods.

Across both methods, we find that those in the extra services group received more services than those in the regular services group, a result that held for each of the three types of services (child support, employment, and parenting). Thus, the intervention was successful in delivering more services to those in the extra services group than were received by those in the regular service group. However, we note that although the extra services group did receive significantly more services, the level of services received was generally small. For example, those in the extra services group, a very disadvantaged group, reported that since random assignment (about one year), they received 2 hours of child support services, 28 hours of employment services, and 9 hours of parenting services. The only level of services set by OCSE was in parenting, where they expected at least 16 hours of service, so the only benchmark given was not met. Thus, the CSPED intervention itself may not have been intensive enough to have large effects.

The theory of change predicted that those in the extra service group would have higher satisfaction with the child support program, more earnings, and an increased sense of responsibility for children. In Wisconsin, direct effects were found in both analysis types only for satisfaction with the child support program. These effects were relatively large in magnitude, suggesting that CSPED increased satisfaction by roughly 30 percent. Satisfaction was also related to the amount of child support services received, though the magnitude of the effect was very small. For sense of responsibility for children, there were no effects in the OLS analyses. Although the SEM did not show a direct effect, its results showed that the extra services group received more parenting services, and that more parenting services were linked to an increased sense of responsibility for children: thus, the SEM results indicate an indirect effect on sense of responsibility for children, although this effect was, again, very small in magnitude. In neither analysis was there a link between the extra services group assignment and earnings; although more employment services were received by the extra services group, these services (as measured here) did not lead to increases in earnings.

The theory of change also predicted that satisfaction with the child support program, earnings, and sense of responsibility for children would all be related to compliance. A consistent finding across both types of analyses is that earnings and satisfaction with the child support program are linked to compliance, but sense of responsibility for children is not.

Of central importance is whether those in the extra services group had higher compliance. The basic model in the CSPED impact report found no effect in Wisconsin (or elsewhere). Similarly, the OLS interaction models tested here also find no effect; although the coefficient shows that those in the extra services group had higher compliance, the difference was not statistically significant. In contrast, the SEM shows that those in the extra services group did

have higher compliance, by 4.3 percentage points, and the difference was marginally statistically significant ($p < .10$).

The OLS and SEM estimates are not fully comparable. The OLS approach estimates the association of each element of the model (extra services status, services, intermediate outcomes) with compliance after adjusting (controlling) for the association of each of the other elements with compliance. However, it does not explicitly estimate the full set of inter-relations (pathways) among all of the key factors (extra services status, service receipt, intermediate outcomes, compliance) considered, despite our inclusion of extensive interactions among them. The SEM approach estimates effects for each of the direct and indirect pathways linking the full set of elements. Specifically, the SEM approach partials any difference between the extra services and the regular services group in compliance across all of the hypothesized pathways.

While the direct effect of extra services on compliance is slightly larger (and marginally significant) in the SEM approach than in OLS Models 1–4 in Table 5, it is of the same general order of magnitude (though nonsignificant in the OLS estimation). In OLS Models 5 and 6 (Table 5), which include all of the potential mediators (services and intermediate outcomes) and interactions of those mediators with extra services status, the main effect of extra services is nonsignificant and essentially of zero magnitude. Note, that in these OLS specifications the "treatment" estimate (main effect) represents the effect of extra services on compliance for extra services members constituting the reference category for the full set of interactions; the total direct effect of extra services on compliance for the overall extra services group is represented by the sum of estimates for the extra services main effect and all of the extra services interactions. However, a test of the joint significance of these estimates failed to reject the null hypothesis that there was no significant extra services effect on compliance.

In contrast, the direct effect of extra services estimated by the SEM constitutes the proportion of the difference in compliance between the extra services and the regular services groups that is not explained by the indirect pathways. As noted above, the sum of all of the indirect effects linking extra services to compliance is small, negative, and nonsignificant, indicating that the total indirect effect of extra services group assignment through the full set of hypothesized paths is -0.1 percentage points. This reflects that the individual indirect path estimates differ in magnitude and direction, such that some are positive and others negative, resulting in offsetting indirect effects. For example, we find extra services assignment to be associated with greater child support service hours, but greater child support service hours to be associated with less compliance (not statistically significant). This may imply that extra services group members who experienced greater contact with their child support workers did so precisely because they were having difficulty complying. As a result, the indirect effect from extra services group to compliance through child support services is negative (but not statistically significant). In all, that we find a null (near zero in magnitude and nonsignificant) effect of the indirect pathways hypothesized to link program participation with compliance is due to offsetting positive and negative effects among the hypothesized mechanisms (service receipt and intermediate outcomes). Thus, in actuality, the two approaches do not lead to substantively different conclusions regarding our hypothesized model.

Hence, our overarching conclusions in terms of the five paths described earlier, based on both types of analyses in Wisconsin, are as follows:

(1)   the extra services group did receive more enhanced child support, employment, and parenting services than the regular services group;

(2)   enhanced child support services did improve participants' attitudes about the child support program;

(3)   increased employment services did not lead to higher earnings;

(4)   increased parenting services did not lead to a meaningful increase in sense of responsibility for children; and,

(5)   two of the intermediate outcomes (satisfaction and earnings, but not sense of responsibility for children) were associated with greater compliance with child support orders; however, because CSPED did not increase earnings, the only plausible pathway linking the program to compliance is through child support services. This pathway was not enough on its own to produce a substantively meaningful change in compliance.

These results are part of several research efforts attempting to use the data gathered in CSPED to learn more about the effects of the child support program, and some of the related research also helps in interpreting these results. For example, Meyer, Kim and Cancian (2019) examine only those in the CSPED's regular services group and find some relationship between child support services and satisfaction with the child support program, but no relationship between satisfaction and later child support payments. The findings in this report, particularly those from Models 5 and 6 of Table 5, highlight that it may be only those in the extra services group for whom satisfaction is related to compliance. In addition, Berger, Cancian, Guarin, Hodges, and Meyer (2019) also examine the regular services group in CSPED to examine the types of barriers to employment individuals face, and to see whether different barriers to employment are related to both labor market outcomes and child support outcomes. Many noncustodial parents face barriers, with more than half the parents reporting each of three different barriers that made it hard to find or keep a job: transportation difficulties, having a criminal record, and a lack of job skills. Moreover, more than one-third report each of two different barriers that made it hard to find or keep a job: housing instability and caregiving responsibilities. Some of the barriers to employment, especially transportation difficulties and having a criminal record, are linked to child support outcomes, even when controlling for their relationship with labor market outcomes. This suggests that, if service providers could address a wide range of barriers, there may be beneficial effects on compliance.

These results can also inform Wisconsin's expansion of the SPSK program (now called Elevate). Our findings suggest that SPSK's child support services were effective, but that employment services may need to be more intensive (or to contain a different balance of services) to achieve earnings gains. While SPSK's level of parenting services were not found to be effective for compliance, the overall CSPED impact analysis found impacts on child contact; thus, we do not recommend eliminating these services at this time. Rather, Wisconsin might consider increasing their intensity to assess whether higher dosage impacts compliance.

These results should be seen in the light of several limitations. To begin with, although the experimental analyses of CSPED assignment on each outcome can be interpreted as causal estimates (given randomization to the extra services or regular services group), the mediation estimates do not lend themselves to causal interpretation. It is not possible to experimentally test each separate component of the CSPED package because all of the services are offered in tandem and participants then select into various levels of participation in each. In other words, while program assignment is random, participants' levels on the mediators are not random, and the hypothesized pathways are intercorrelated. As such, our SEM analyses are informative for considering potential pathways linking CSPED to child support compliance, but do not offer causal evidence about these pathways.

There are also limitations in the measures available to us. We do not have administrative measures of services provided (in part because of the difficulty of getting such measures for those in the regular services group, who may be more likely to receive services in the community). Using respondent reports of services received probably means we are undercounting services because a respondent is not always aware of service hours provided behind the scenes. Another measurement issue is the scale we used for sense of responsibility for

children: because we did not believe we could measure commitment to one's own children, the questions we used are general attitude questions and may not perfectly reflect a noncustodial parent's sense of responsibility for his or her own children. Other limitations are common to interventions of this type. CSPED was implemented in selected counties during a particular time period, so broader generalizability is not known, and evaluating a similar program at a different time period or in different counties could add to knowledge. Second, although there was a planning period before CSPED was implemented, the programs were fairly new; the implementation report (Noyes et al., 2018) documents some of the difficulties in running the program that may have been lessened as workers and managers gained more experience; this means that there may be different impacts if the programs were implemented for longer periods. Finally, it is important to note that we are unable to account for bidirectionality among services and outcomes in our estimation. That is, both services and outcomes are measured across the same period of observation. Thus, for example, those whose earnings decreased over the observation period may also have taken up more employment services in response. Likewise, as noted above, those who are having trouble complying with their child support orders may respond by taking up more child support services. Bidirectional relations of these types may have implications regarding the negative indirect paths within our hypothesized model of change.

The Wisconsin Department of Children and Families has begun a program expansion, building on Wisconsin's experience with CSPED implementation. Three new counties are implementing the program, and it will be implemented in a different time period, so this will provide new data on generalizability. Moreover, Brown and Kenosha—the two Wisconsin counties that implemented SPSK as part of CSPED—are also implementing the expansion, so we will have information on whether program learning leads to different effects. The expanded

program began in January 2020, and evaluation is ongoing. As a result, we may have new

information on whether an improved program can affect child support compliance.

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APPENDIX 1: WEIGHTS FOR THE CSPED FOLLOW-UP SURVEY

All CSPED participants completed the baseline survey. We did not, however, intend or expect that all participants would complete the follow-up survey. For example, in Wisconsin, 1,428 participants enrolled and completed the baseline survey, while 630 completed the follow-up survey. Only participants enrolled in the first 22 months of the program were included for eligibility in the survey (N=900 in Wisconsin). From this group, some participants could not be located to complete the survey (N=87 in Wisconsin). Finally, some participants did not complete the survey, even though they were located (N=183 in Wisconsin). Survey respondents are likely to differ from the full CSPED sample. For example, we find that more advantaged enrollees may be more likely to respond to the survey and/or may be more likely to be located.

As a result of these anticipated differences, we developed weights to be used in conjunction with the follow-up survey. The weights used in the CSPED impact report were intended to address differences between the follow-up survey sample and the full sample so that analyses using the follow-up survey sample could be representative of the full sample. More detail on these original weights can be found in Herard-Tsiagbey, Weaver, and Moore (2019).

In our initial analyses for this report, we noticed differences in estimates on impacts for all Wisconsin CSPED participants, the unweighted survey sample, and the weighted survey sample. Because we believe that conceptually the weighted survey sample should be equivalent to the full sample, we conducted multiple checks of the original weights. We then developed new, revised weights. The original weights were based on subgroup characteristics; the revised weights are based on individual characteristics.

The new weights are designed so that the data from the follow-up survey respondents is representative of the sample of participants enrolled in the first 22 months of the program.

Though the original weights attempted to equivalize the survey respondents and the full sample (enrolled for all 36 months), our analysis suggests that, in Wisconsin, the impacts for early enrollees and late enrollees differ. Thus, given these potential differences and difficulties in mixing analyses, we focused weights to adjust respondents to the early enrollee sample only. In developing the revised weights, we follow the literature on survey weighting and nonresponse analysis (Lohr, 2010; Valliant, Dever, & Kreuter, 2013). Below, we outline the steps taken to create and check the revised weights.

First, we developed models that predicted: (1) whether a participant was located and could be contacted for the follow-up survey; and (2) whether the participant responded to the survey. Our models included characteristics from administrative data and the baseline survey that we thought may be related to these outcomes. We included additional characteristics that were not in the original weighting models, such as pre-baseline earnings. In addition to participant characteristics, these weighting models, like the original models, account for CSPED site and service group assignment. Because the purpose of these models is to attain the best fit (rather than test hypotheses), we use stepwise logistic regression. Results of these models are in Appendix 1, Table 1.

Next, using these models, we estimated the probability that (1) the participant was located, and (2) the participant responded to the survey. An adjustment factor for each was assigned to every participant. We then created the final revised weight by multiplying these two adjustment factors together. Finally, we conducted checks of the weights. The revised weights make characteristics of survey respondents comparable to the baseline characteristics of the early entrants, both overall and within research groups. Appendix 1, Table 2a shows results for CSPED as a whole; no baseline characteristics tested show significant differences at the $p < .05$

level, either for the full sample or within research groups. Appendix 1, Table 2b shows results for Wisconsin; there is only one characteristic that differs between the weighted respondent sample and all early entrants, the proportion having two coresident children in the regular services group.

We also confirmed that the new person-specific weights make extra service group participants and regular services group participants comparable on baseline characteristics both overall and within grantees, with fewer differences than would be expected by chance. These calculations are shown in Appendix 1, Table 3a (all states) and Table 3b (for Wisconsin).

Appendix 1, Table 1: Weighting Models

Parameter	Model 1 Stepwise Logistic Regression Modeling Probability that Noncustodial Parent was Located for Follow-up Survey		Model 2 Stepwise Logistic Regression Modeling Probability that Noncustodial Parent Responded to Follow-up Survey	
	Estimate		Estimate	
State				
CA	0.639	***	—	
	(0.142)		—	
CO	-0.0996		—	
	(0.1098)		—	
IA	-0.188	+	—	
	(0.117)		—	
OH	0.8575	***	—	
	(0.1708)		—	
SC	-1.0653	***	—	
	(0.1099)		—	
TN	0.1227		—	
	(0.1164)		—	
TX	-0.2641	*	—	
	(0.1219)		—	
WI	omitted		—	
Site				
Site: CA	—		0.2056	*
	—		(0.0926)	
Site: CO, Arapahoe County	—		-0.1978	
	—		(0.1267)	
Site: CO, Boulder County	—		-0.5366	
	—		(0.3473)	
Site: CO, El Paso County	—		0.1132	
	—		(0.1518)	
Site: CO, Jefferson County	—		0.1389	
	—		(0.1799)	
Site: CO, Powers County	—		0.4988	
	—		(0.3732)	
Site: IA	—		-0.0801	
	—		(0.096)	
Site: OH	—		0.3351	**
	—		(0.1072)	
Site: SC, Charleston County	—		-0.0822	
	—		(0.1727)	
Site: SC, Greenville County	—		-0.5521	**
	—		(0.1732)	
Site: SC, Horry County	—		-0.0264	
	—		(0.3092)	

(table continues)

Appendix 1, Table 1, continued

Parameter	Model 1 Stepwise Logistic Regression Modeling Probability that Noncustodial Parent was Located for Follow-up Survey Estimate		Model 2 Stepwise Logistic Regression Modeling Probability that Noncustodial Parent Responded to Follow-up Survey Estimate	
Site: TN, Davidson County	—		-0.243	+
	—		(0.1371)	
Site: TN, Hamilton County	—		0.0856	
	—		(0.1807)	
Site: TN, Shelby County	—		-0.0816	
	—		(0.1081)	
Site: TX, Bell County	—		-0.5229	***
	—		(0.1401)	
Site: TX, Webb County	—		0.6324	***
	—		(0.1551)	
Site: WI, Brown County	—		0.0899	
	—		(0.1232)	
Site: WI, Kenosha County	—		omitted	
Extra services group	0.2261	*	-0.2663	***
	(0.0884)		(0.067)	
Male	0.2254		0.5317	***
	(0.1626)		(0.1247)	
Age	0.3426	***	0.1906	***
	(0.0618)		(0.0422)	
Race (black)	—		0.0518	
			(0.0483)	
Has mobile phone	0.2046		—	
	(0.1306)			
Education level	0.122	*	—	
	(0.0523)			
Military service	-0.4308	*	0.3412	*
	(0.1687)		(0.1372)	
Percentage of quarters employed in year before random assignment (administrative records)	0.1367		0.0703	
	(0.0905)		(0.0642)	
Received SNAP in 30 days before random assignment	0.1603		0.3019	***
	(0.0999)		(0.0697)	
Resides with parent or grandparent	0.2513	***	—	
	(0.0981)			
Ever convicted	-0.4024	**	-0.1488	*
	(0.1065)		(0.0715)	
Total earnings in year before random assignment (administrative records)	0.0439		—	
	(0.0364)			

(table continues)

Appendix 1, Table 1, continued

Parameter	Model 1 Stepwise Logistic Regression Modeling Probability that Noncustodial Parent was Located for Follow-up Survey Estimate		Model 2 Stepwise Logistic Regression Modeling Probability that Noncustodial Parent Responded to Follow-up Survey Estimate	
Number of children	—		-0.0836	**
			(0.0291)	
Average monthly current child support paid in year before random assignment (administrative records)	—		0.2541	***
			(0.067)	
Constant	0.7343		0.811	
	(0.3244)		(0.313)	
N	6,308		5,714	

Notes: Standard errors in parentheses. Characteristics are measured at baseline unless otherwise noted. Model 1 includes 9 participant determined to have been originally ineligible and dropped from subsequent analyses. The following characteristics did not meet the significance criteria for entrance into Model 1: Site, Ethnicity, Race, Nativity status, Marital status, Number of children, Average monthly child support paid in year before enrollment. The following characteristics did not meet the significance criteria for entrance into Model 2: Ethnicity, Nativity status, Marital status, Education level, Mobile phone Status, Resides with parent or grandparent, Earnings in year before enrollment.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$
— Parameter did not meet significance criteria for entrance in to the model.

Appendix 1, Table 2a: Comparability of Early Entrants and Weighted Respondents Using Revised Weights

	Full Sample		Extra Services Group			Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents		Early Entrants	Weighted Respondents
Extra services group	50.1%	50.0%	100.0%	100.0%		0.0%	0.0%
Male	90.3%	90.3%	90.1%	90.5%		90.5%	90.2%
Age							
<25	8.6%	8.5%	9.3%	8.7%		7.9%	8.2%
25–40	63.7%	63.6%	63.3%	62.5%		64.0%	64.7%
>40	27.7%	27.9%	27.4%	28.8%		28.1%	27.0%
Race/ethnicity							
Hispanic/Latinx	21.8%	22.1%	21.9%	21.8%		21.7%	22.4%
Non-Hispanic white	32.6%	33.1%	32.6%	32.8%		32.7%	33.5%
Non-Hispanic black	39.7%	39.3%	39.8%	40.2%		39.7%	38.4%
Non-Hispanic other/multiracial/don't know/refused	5.8%	5.5%	5.7%	5.7%		6.0%	5.7%
Marital status							
Married	13.3%	13.9%	13.7%	14.9%	+	12.8%	12.9%
Divorced/separated/widowed	39.3%	39.1%	38.5%	38.3%		40.1%	40.0%
Never married	47.5%	47.0%	47.8%	46.8%		47.1%	47.1%
Educational attainment							
<HS diploma	25.5%	25.5%	26.1%	25.8%		24.8%	25.2%
HS diploma or GED	42.7%	42.5%	41.9%	41.3%		43.4%	43.6%
Some college/associate's degree	29.0%	29.1%	29.2%	30.2%		28.9%	28.1%
Bachelor's degree or more	2.8%	2.9%	2.8%	2.7%		2.9%	3.1%
Marital or nonmartial children							
All children nonmarital	62.1%	62.0%	61.5%	61.5%		62.7%	62.4%
All children marital	11.7%	11.6%	11.9%	11.9%		11.6%	11.3%
Both nonmarital and marital	15.4%	15.7%	15.9%	16.0%		15.0%	15.4%
No minor children	1.0%	0.9%	1.0%	0.9%		1.0%	1.0%
Texas, N/A	9.8%	9.8%	9.8%	9.7%		9.7%	9.9%

(table continues)

Appendix 1, Table 2a, continued

	Full Sample		Extra Services Group		Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents
Number of custodial parents for minor children						
1	41.3%	41.4%	40.9%	40.9%	41.8%	41.9%
2	28.9%	29.2%	29.4%	29.9%	28.4%	28.5%
3	12.6%	12.7%	12.5%	12.6%	12.8%	12.8%
4 or more	6.3%	6.0%	6.4%	6.0%	6.3%	6.0%
No minor children	1.0%	0.9%	1.0%	0.9%	1.0%	0.9%
Texas, N/A	9.8%	9.8%	9.8%	9.7%	9.7%	9.9%
Number of nonresident children						
No nonresident children	4.3%	4.2%	4.1%	4.0%	4.5%	4.4%
1	35.2%	35.5%	35.1%	35.4%	35.4%	35.5%
2	24.4%	24.4%	25.0%	25.5%	23.7%	23.2%
3	13.7%	13.7%	13.2%	13.2%	14.1%	14.2%
4+	11.7%	11.5%	11.8%	11.3%	11.6%	11.8%
No minor children	1.0%	0.9%	1.0%	0.9%	1.0%	0.9%
Texas, N/A	9.8%	9.8%	9.8%	9.7%	9.7%	9.9%
Number of coresident children						
No coresident children	61.9%	61.8%	62.1%	62.4%	61.8%	61.1%
1	15.7%	16.0%	15.5%	15.7%	15.9%	16.3%
2	7.0%	6.8%	7.1%	7.3%	6.9%	6.3%
3	2.8%	3.0%	2.7%	2.7%	2.9%	3.3%
4+	1.7%	1.7%	1.7%	1.4%	1.7%	2.0%
No minor children	1.0%	0.9%	1.0%	0.9%	1.0%	1.0%
Texas, N/A	9.8%	9.8%	9.8%	9.7%	9.7%	9.9%

(table continues)

Appendix 1, Table 2a, continued

	Full Sample		Extra Services Group			Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents		Early Entrants	Weighted Respondents
Age of youngest nonresident child							
<5	27.7%	26.9%	27.9%	26.4%		27.6%	27.4%
5–9	29.9%	30.6%	29.5%	30.5%		30.3%	30.7%
10–14	19.6%	19.9%	20.0%	20.6%		19.2%	19.1%
15–18	7.7%	7.7%	7.7%	7.9%		7.7%	7.4%
No nonresident children	4.3%	4.2%	4.1%	4.0%		4.5%	4.4%
No minor children	1.0%	0.9%	1.0%	0.9%		1.0%	1.0%
Texas, N/A	9.8%	9.8%	9.8%	9.7%		9.7%	9.9%
Age of oldest nonresident child							
<5	11.2%	11.1%	10.9%	10.9%		11.3%	11.3%
5–9	23.0%	22.9%	23.4%	22.6%		22.5%	23.2%
10–14	27.9%	28.4%	27.9%	28.5%		27.9%	28.3%
15–18	22.9%	22.7%	22.8%	23.5%		23.0%	21.9%
No nonresident children	4.3%	4.2%	4.1%	4.0%		4.5%	4.4%
No minor children	1.0%	0.9%	1.0%	0.9%		1.0%	1.0%
Texas, N/A	9.8%	9.8%	9.8%	9.7%		9.7%	9.9%
Average monthly current child support paid in year before random assignment (administrative records)	$1,066.34	$1,083.89	$1,051.04	$1,100.58		$1,081.68	$1,067.21
Average monthly child support owed in year before random assignment (administrative records)	$3,731.42	$3,689.34	$3,736.00	$3,728.87		$3,726.00	$3,649.84
Child support compliance in year before random assignment (amount paid/amount owed) (administrative records)	28.37%	29.08%	28.30%	29.33%	+	28.44%	28.83%
Provided informal cash or noncash support to any child in the last 30 days	63.4%	63.2%	62.6%	62.5%		64.2%	64.0%
Percentage of quarters employed in year before random assignment (administrative records)	46.0%	46.2%	45.7%	46.1%		46.2%	46.4%
Total earnings in year before random assignment (administrative records)	$7,303.05	$7,322.17	$7,160.14	$7,295.45		$7,446.45	$7,348.86

(table continues)

Appendix 1, Table 2a, continued

	Full Sample		Extra Services Group		Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents
Received SNAP in 30 days before random assignment	38.2%	38.2%	38.6%	37.9%	37.8%	38.5%
Average monthly TANF benefits received by custodial parent in year before random assignment (administrative records)	$74.81	$72.91	$76.13	$71.60	$73.48	$74.21
Ever convicted	69.2%	69.1%	69.9%	69.9%	68.5%	68.3%
Noncustodial parent depression categories						
Not depressed	69.9%	69.1%	70.3%	69.0%	69.6%	69.3%
Major depression	17.4%	18.0%	17.0%	18.2%	17.8%	17.8%
Severe major depression	2.9%	3.0%	2.9%	3.1%	2.8%	3.0%
Texas, N/A	9.8%	9.8%	9.8%	9.7%	9.7%	9.9%
Motivation to participate in CSPED						
Not at all/a little/somewhat	7.9%	8.2%	8.0%	7.9%	7.8%	8.5%
Very	33.1%	33.2%	33.3%	34.2%	32.9%	32.2%
Extremely	49.2%	48.9%	48.8%	48.3%	49.5%	49.4%
Texas, N/A	9.8%	9.8%	9.8%	9.7%	9.8%	9.9%
N	6,299	4,304	3155	2,198	3,144	2,106

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 1, Table 2b: Comparability of Early Entrants and Weighted Respondents Using Revised Weights, Wisconsin

	Full Sample		Extra Services Group		Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents
Extra services group	50.0%	49.9%	100.0%	100.0%	0.0%	0.0%
Male	86.0%	85.4%	84.2%	84.8%	87.8%	86.1%
Age						
<25	13.3%	13.9%	13.6%	14.3%	13.1%	13.5%
25–40	61.4%	61.0%	59.3%	56.0%	63.6%	66.0%
>40	25.2%	25.1%	27.1%	29.7%	23.3%	20.5%
Race/ethnicity						
Hispanic/Latinx	13.6%	13.3%	14.4%	13.5%	12.7%	13.2%
Non-Hispanic white	47.1%	49.6%	48.9%	50.3%	45.2%	48.9%
Non-Hispanic black	31.6%	29.9%	28.8%	28.2%	34.3%	31.6%
Non-Hispanic other/multiracial/don't know/refused	7.8%	7.2%	7.8%	8.0%	7.8%	6.3%
Marital status						
Married	9.1%	9.2%	10.2%	11.5%	8.0%	6.8%
Divorced/separated/widowed	28.2%	29.2%	29.1%	29.1%	27.3%	29.3%
Never married	62.7%	61.6%	60.7%	59.4%	64.7%	63.9%
Educational attainment						
<HS diploma	29.2%	27.7%	28.4%	26.4%	29.9%	29.0%
HS diploma or GED	42.0%	42.3%	42.0%	41.9%	42.1%	42.7%
Some college/associate's degree	27.1%	28.2%	27.8%	29.3%	26.4%	27.1%
Bachelor's degree or more	1.7%	1.8%	1.8%	2.4%	1.6%	1.2%
Marital or nonmarital children						
All children nonmarital	75.5%	74.8%	73.2%	72.3%	77.8%	77.3%
All children marital	11.0%	11.9%	12.5%	13.5%	9.6%	10.3%
Both nonmarital and marital	13.3%	13.0%	13.9%	13.6%	12.7%	12.5%
No minor children	0.2%	0.3%	0.4%	0.6%	0.0%	0.0%

(table continues)

Appendix 1, Table 2b, continued

	Full Sample		Extra Services Group		Regular Services Group		
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	
Number of custodial parents for minor children							
1 partner	46.7%	47.1%	47.1%	47.4%	46.2%	47.0%	
2 partners	31.7%	33.1%	30.9%	32.8%	32.4%	33.3%	
3 partners	14.2%	13.2%	14.4%	12.5%	14.0%	13.8%	
4+ partners	7.2%	6.4%	7.1%	6.8%	7.3%	6.0%	
No minor children	0.2%	0.3%	0.4%	0.6%	0.0%	0.0%	
Number of nonresident children							
No nonresident children	5.2%	5.3%	5.1%	5.3%	5.4%	5.2%	
1	40.4%	41.4%	41.3%	43.7%	39.4%	39.2%	
2	26.7%	27.4%	25.1%	25.1%	28.2%	29.7%	
3	14.9%	14.4%	15.1%	13.9%	14.7%	14.8%	
4+	12.6%	11.3%	12.9%	11.5%	12.3%	11.1%	
No minor children	0.2%	0.3%	0.4%	0.6%	0.0%	0.0%	
Number of coresident children							
No coresident children	68.9%	68.6%	68.9%	67.1%	68.8%	70.2%	
1	18.9%	20.7%	18.7%	20.8%	19.2%	20.5%	
2	7.4%	5.7% +	7.8%	7.2%	7.1%	4.1%	**
3	2.6%	2.8%	2.7%	3.4%	2.4%	2.2%	
4+	2.0%	2.0%	1.6%	1.0%	2.4%	3.0%	
No minor children	0.2%	0.3%	0.4%	0.6%	0.0%	0.0%	
Age of youngest nonresident child							
<5	36.8%	35.2%	36.4%	34.3%	37.2%	36.0%	
5–9	28.3%	29.0%	26.7%	26.8%	29.9%	31.2%	
10–14	21.0%	21.9%	23.6%	24.9%	18.5%	18.9%	
15–18	8.4%	8.4%	7.8%	8.1%	9.1%	8.7%	
No noresident children	5.2%	5.3%	5.1%	5.3%	5.4%	5.2%	
No minor children	0.2%	0.3%	0.4%	0.6%	0.0%	0.0%	

(table continues)

Appendix 1, Table 2b, continued

	Full Sample		Extra Services Group		Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents
Age of oldest nonresident child						
<5	16.6%	16.3%	16.2%	16.4%	16.9%	16.1%
5–9	25.0%	26.5%	24.7%	25.4%	25.3%	27.6%
10–14	28.8%	27.9%	31.3%	30.0%	26.3%	25.9%
15–18	24.2%	23.8%	22.2%	22.3%	26.1%	25.2%
No noresident children	5.2%	5.3%	5.1%	5.3%	5.4%	5.2%
No minor children	0.2%	0.3%	0.4%	0.6%	0.0%	0.0%
Average monthly current child support paid in year before random assignment (administrative records)	$1,037.20	$1,088.20	$1,065.61	$1,146.43	$1,008.80	$1,030.27
Average monthly child support owed in year before random assignment (administrative records)	$3,298.51	$3,215.69	$3,372.98	$3,304.44	$3,224.04	$3,127.42
Child support compliance in year before random assignment (amount paid/amount owed) (administrative records)	30.16%	31.84%	29.94%	31.86%	30.38%	31.83%
Provided informal cash or noncash support to any child in the last 30 days	68.7%	69.0%	70.0%	69.1%	67.4%	68.8%
Percentage of quarters employed in year before random assignment (administrative records)	50.0%	50.5%	49.9%	50.9%	50.0%	50.1%
Total earnings in year before random assignment (administrative records)	$6,138.66	$6,525.21	$6,420.49	$6,930.47	$5,856.83	$6,122.12
Received SNAP in 30 days before random assignment	49.7%	50.9%	52.4%	53.8%	46.9%	48.0%
Average monthly TANF benefits received by custodial parent in year before random assignment (administrative records)	$65.34	$61.80	$65.12	$65.89	$65.56	$57.73
Ever convicted	77.7%	75.0%	78.6%	76.7%	76.8%	73.4%
Noncustodial parent depression categories						
Not depressed	71.8%	70.8%	71.8%	70.4%	71.8%	71.1%
Major depression	24.0%	25.1%	24.2%	25.8%	23.8%	24.5%
Severe major depression	4.2%	4.1%	3.1%	3.8%	4.4%	4.5%

(table continues)

Appendix 1, Table 2b, continued

	Full Sample		Extra Services Group		Regular Services Group	
	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents	Early Entrants	Weighted Respondents
Motivation to participate in CSPED						
Not at all/ a little/somewhat	11.9%	12.5%	11.8%	12.5%	12.0%	12.5%
Very	42.7%	44.4%	41.8%	45.1%	43.6%	43.6%
Extremely	45.4%	43.1%	46.4%	42.4%	44.4%	43.9%
N	900	636	450	324	450	312

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 1,Table 3a: Comparability of Extra Services and Control Groups Using Revised Weights

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage	
Extra services group	50.0%	100.0%	0.0%	
Male	90.3%	90.5%	90.1%	
Age				
<25	8.5%	8.7%	8.2%	
25–40	63.6%	62.5%	64.7%	
>40	27.9%	28.8%	27.0%	
Race/ethnicity				
Hispanic/Latinx	22.1%	21.8%	22.4%	
Non-Hispanic white	33.1%	32.8%	33.5%	
Non-Hispanic black	39.3%	40.2%	38.4%	
Non-Hispanic other/multiracial/don't know/refused	5.5%	5.2%	5.7%	
Marital status				
Married	13.9%	14.9%	12.9%	+
Divorced/separated/widowed	39.1%	38.3%	39.9%	
Never married	47.0%	46.8%	47.1%	
Educational attainment				
<HS diploma	25.5%	25.8%	25.2%	
HS diploma or GED	42.5%	41.3%	43.6%	
Some college/associate's degree	29.1%	30.2%	28.1%	
Bachelor's degree or more	2.9%	2.7%	3.1%	
Marital or nonmartial children				
All children nonmarital	62.5%	61.5%	62.4%	
All children marital	11.2%	11.9%	11.3%	
Both nonmarital and marital	15.4%	16.0%	15.4%	
No minor children	0.9%	0.9%	1.0%	
Texas, N/A	9.8%	9.7%	9.9%	

(table continues)

Appendix 1,Table 3a, continued

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage	
Number of custodial parents for minor children				
1	41.4%	40.9%	41.9%	
2	29.2%	29.9%	28.5%	
3	12.7%	12.6%	12.8%	
4 or more	6.0%	6.0%	6.0%	
No minor children	0.9%	0.9%	1.0%	
Texas, N/A	9.8%	9.7%	9.9%	
Number of nonresident children				
No nonresident children	4.2%	4.0%	4.4%	
1	35.5%	35.4%	35.5%	
2	24.4%	25.5%	23.2%	
3	13.7%	13.2%	14.2%	
4+	11.5%	11.3%	11.8%	
No minor children	0.9%	0.9%	1.0%	
Texas, N/A	9.8%	9.7%	9.9%	
Number of coresident children				
No coresident children	61.8%	62.4%	61.1%	
1	16.0%	15.7%	16.3%	
2	6.8%	7.3%	6.3%	
3	3.0%	2.7%	3.3%	
4+	1.7%	1.4%	2.0%	+
No minor children	0.9%	0.9%	1.0%	
Texas, N/A	9.8%	9.7%	9.9%	

(table continues)

Appendix 1,Table 3a, continued

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Age of youngest nonresident child			
<5	26.9%	26.4%	27.4%
5–9	30.6%	30.5%	30.7%
10–14	19.9%	20.6%	19.1%
15–18	7.7%	7.9%	7.4%
No nonresident children	4.2%	4.0%	4.4%
No minor children	0.9%	0.9%	1.0%
Texas, N/A	9.8%	9.7%	9.9%
Age of oldest nonresident child			
<5	11.1%	10.9%	11.3%
5–9	22.9%	22.6%	23.2%
10–14	28.4%	28.5%	28.3%
15–18	22.7%	23.5%	21.9%
No nonresident children	4.2%	4.0%	4.4%
No minor children	0.9%	0.9%	1.0%
Texas, N/A	9.8%	9.7%	9.9%
Average monthly current child support paid in year before random assignment (administrative records)	$1,083.89	$1,100.58	$1,067.21
Average monthly child support owed in year before random assignment (administrative records)	$3,689.34	$3,728.87	$3,649.84
Child support compliance in year before random assignment (amount paid/amount owed) (administrative records)	29.08%	29.33%	28.83%
Provided informal cash or noncash support to any child in the last 30 days	63.2%	62.5%	64.0%
Percentage of quarters employed in year before random assignment (administrative records)	46.2%	46.1%	46.4%
Total earnings in year before random assignment (administrative records)	$7,322.17	$7,295.45	$7,348.86

Appendix 1,Table 3a, continued

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Received SNAP in 30 days before random assignment	38.2%	37.9%	38.5%
Average monthly TANF benefits received by custodial parent in year before random assignment (administrative records)	$72.91	$71.60	$74.21
Ever convicted	69.1%	69.9%	68.3%
Noncustodial parent depression categories			
Not depressed	69.1%	69.0%	69.3%
Major depression	18.0%	18.2%	17.8%
Severe major depression	3.0%	3.1%	3.0%
Texas, N/A	9.8%	9.7%	9.9%
Motivation to participate in CSPED			
Not at all/a little/somewhat	8.2%	7.9%	8.5%
Very	33.2%	34.2%	32.2%
Extremely	48.9%	48.3%	49.4%
Texas, N/A	9.8%	9.7%	9.9%
N	4,304	2,198	2,106

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$

Appendix 1, Table 3b: Comparability of Extra Services and Control Groups Using Revised Weights, Wisconsin

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage	
Extra services group	49.9%	100.0%	0.0%	
Male	85.4%	84.8%	86.1%	
Age				
<25	13.9%	14.3%	13.5%	
25–40	61.0%	56.0%	66.0%	**
>40	25.1%	29.7%	20.5%	**
Race/ethnicity				
Hispanic/Latinx	13.3%	13.5%	13.2%	
Non-Hispanic white	49.6%	50.3%	48.9%	
Non-Hispanic black	29.9%	28.2%	31.6%	
Non-Hispanic other/multiracial/don't know/refused	7.2%	8.0%	6.3%	
Marital status				
Married	9.2%	11.5%	6.8%	*
Divorced/separated/widowed	29.2%	29.1%	29.3%	
Never married	61.6%	59.4%	63.9%	
Educational attainment				
<HS diploma	27.7%	26.4%	29.0%	
HS diploma or GED	42.3%	41.9%	42.7%	
Some college/associate's degree	28.2%	29.3%	27.1%	
Bachelor's degree or more	1.8%	2.4%	1.2%	
Marital or nonmarital children				
All children nonmarital	74.8%	72.3%	77.3%	
All children marital	11.9%	13.5%	10.3%	
Both nonmarital and marital	13.0%	13.6%	12.5%	
No minor children	0.3%	0.6%	0.0%	

(table continues)

Appendix 1, Table 3b, continued

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage	
Number of custodial parents for minor children				
1 partner	47.1%	47.4%	47.0%	
2 partners	33.1%	32.8%	33.3%	
3 partners	13.2%	12.5%	13.8%	
4+ partners	6.4%	6.8%	6.0%	
No minor children	0.3%	0.6%	0.0%	
Number of nonresident children				
No nonresident children	5.3%	5.3%	5.2%	
1	41.4%	43.7%	39.2%	
2	27.4%	25.1%	29.7%	
3	14.4%	13.9%	14.8%	
4+	11.3%	11.5%	11.1%	
No minor children	0.3%	0.6%	0.0%	
Number of coresident children				
No coresident children	68.6%	67.1%	70.2%	
1	20.7%	20.8%	20.5%	
2	5.7%	7.2%	4.1%	+
3	2.8%	3.4%	2.2%	
4+	2.0%	1.0%	3.0%	
No minor children	0.3%	0.6%	0.0%	
Age of youngest nonresident child				
<5	35.2%	34.3%	36.0%	
5–9	29.0%	26.8%	31.2%	
10–14	21.9%	24.9%	18.9%	+
15–18	8.4%	8.1%	8.7%	
No noresident children	5.3%	5.3%	5.2%	
No minor children	0.3%	0.6%	0.0%	

(table continues)

Appendix 1, Table 3b, continued

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Age of oldest nonresident child			
<5	16.3%	16.4%	16.1%
5–9	26.5%	25.4%	27.6%
10–14	27.9%	30.0%	25.9%
15–18	23.8%	22.3%	25.2%
No noresident children	5.3%	5.3%	5.2%
No minor children	0.3%	0.6%	0.0%
Average monthly current child support paid in year before random assignment (administrative records)	$1,088.20	$1,146.43	$1,030.27 ($77.53)
Average monthly child support owed in year before random assignment (administrative records)	$3,215.69	$3,304.44	$3,127.42 ($122.44)
Child support compliance in year before random assignment (amount paid/amount owed) (administrative records)	31.84%	31.86%	31.83% (1.72%)
Provided informal cash or noncash support to any child in the last 30 days	69.0%	69.1%	68.8% (2.6%)
Percentage of quarters employed in year before random assignment (administrative records)	50.5%	50.9%	50.1% (2.2%)
Total earnings in year before random assignment (administrative records)	$6,525.21	$6,930.47	$6,122.12 (531.27)
Received SNAP in 30 days before random assignment	50.9%	53.8%	48.0% (2.8%)
Average monthly TANF benefits received by custodial parent in year before random assignment (administrative records)	$61.80	$65.89	$57.73 ($8.72)
Ever convicted	75.0%	76.7%	73.4%
Noncustodial parent depression categories			
Not depressed	70.8%	70.4%	71.1%
Major depression	25.1%	25.8%	24.5%
Severe major depression	4.1%	3.8%	4.5%

(table continues)

Appendix 1, Table 3b, continued

	Full Sample Mean/Percentage	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Motivation to participate in CSPED			
Not at all/ a little/somewhat	12.5%	12.5%	12.5%
Very	44.4%	45.1%	43.6%
Extremely	43.1%	42.4%	43.9%
N	636	324	312

Note: Standard errors in parentheses.
*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.1$

APPENDIX 2

Appendix 2, Table 1. Logit regression results for child support services and satisfaction with the child support program

	Model 1	Model 2	Model 3	Model 4
		Logit (coefficients)		
	Effect of CSPED on Service Receipt (OLS)	Effect of CSPED on Satisfaction (logit)	Effect of CSPED and Services on Satisfaction (logit)	Interactive Effect of CSPED and Services on Satisfaction (logit)
Extra Services Group (E)	1.499***	0.851***	0.766***	0.752***
	(0.302)	(0.202)	(0.211)	(0.214)
Child Support Service Hours			0.059	0.060
			(0.041)	(0.079)
Treatment X Child Support Service Hours				0.001
				(0.090)
Constant	-0.729	0.052	0.069	0.152
	(1.052)	(0.886)	(0.882)	(0.830)
Observations	590	588	588	588

Notes: Robust standard errors in parentheses.
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
All models include all control variables in Table 1.

Appendix 2, Table 2. OLS regression results for child support services and satisfaction with the child support program - alternative child support services measures

Variables	May be perceived as punitive				May be perceived as supportive			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
	Effect of CSPED on Service Receipt	Effect of CSPED on Satisfaction	Effect of CSPED and Services on Satisfaction	Interactive Effect of CSPED and Services on Satisfaction	Effect of CSPED on Service Receipt	Effect of CSPED on Satisfaction	Effect of CSPED and Services on Satisfaction	Interactive Effect of CSPED and Services on Satisfaction
Extra Services Group (E)	-0.124+	0.169***	0.163***	0.174**	0.057	0.169***	0.165***	0.185***
	(0.070)	(0.040)	(0.040)	(0.053)	(0.043)	(0.040)	(0.040)	(0.048)
Count CS Services			-0.048*	-0.042			0.061	0.093
			(0.025)	(0.032)			(0.041)	(0.063)
Treatment X CS Services				-0.014				-0.060
				(0.048)				(0.080)
Constant	0.872**	0.521**	0.563**	0.557**	0.647***	0.521**	0.512**	0.511**
	(0.319)	(0.181)	(0.181)	(0.183)	(0.187)	(0.181)	(0.181)	(0.181)
Observations	590	590	590	590	590	590	590	590

Notes: Robust standard errors in parentheses.
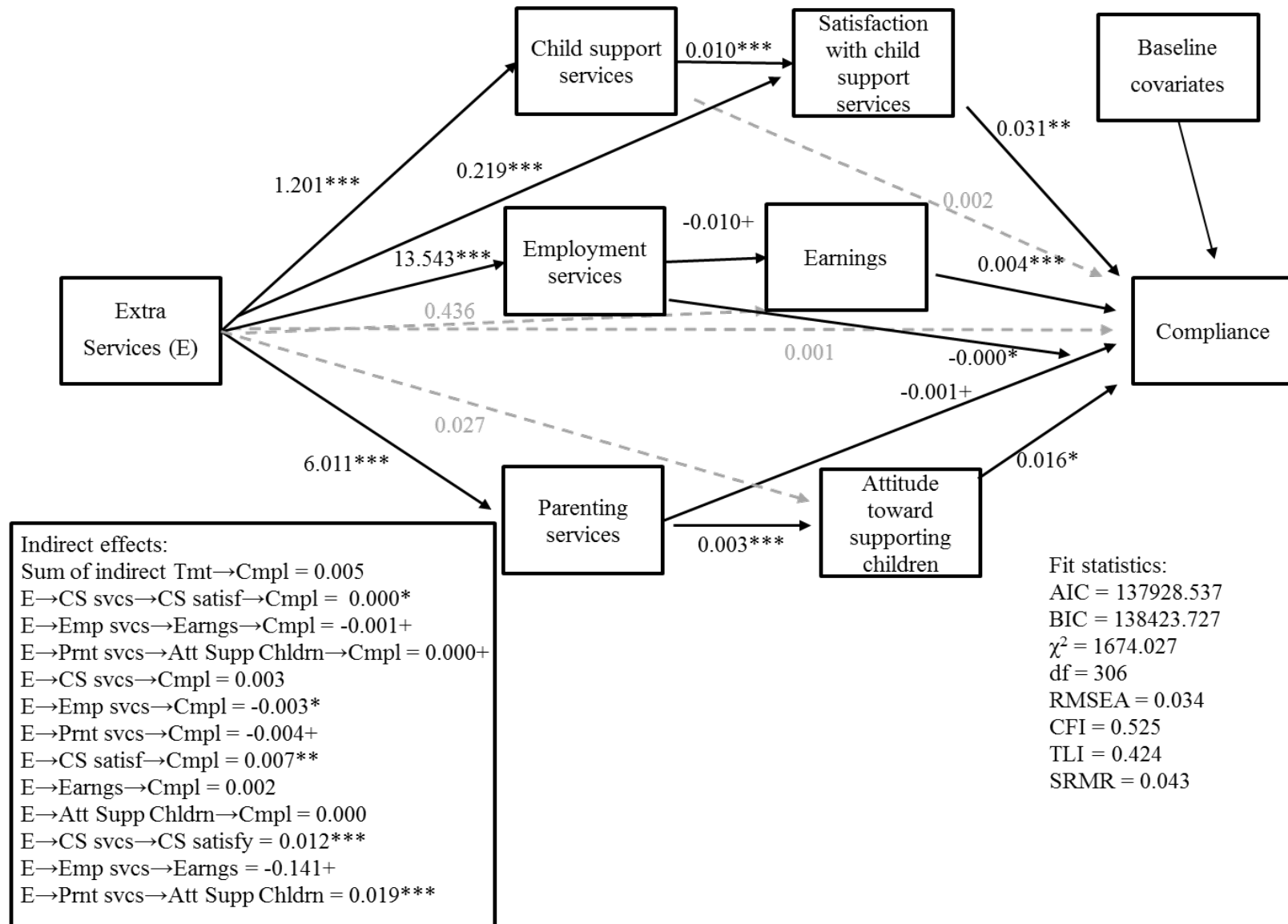*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 2, Table 3. SEM Estimates with 95% and 90% Confidence Intervals

	Path	Estimate	95% Confidence Interval	90% Confidence Interval
β_1	E→Compliance	0.043	(-0.003, 0.089)	(0.004, 0.082)
β_2	E→CS services	1.375	(0.841, 1.908)	(0.927, 1.822)
β_3	E→Emp services	13.679	(5.530, 21.829)	(6.840, 20.519)
β_4	E→Parenting services	7.980	(5.807, 10.153)	(6.156, 9.804)
β_5	E→CS satisfaction	0.163	(0.085, 0.242)	(0.097, 0.229)
β_6	E→Earnings	-0.445	(-2.867, 1.976)	(-2.478, 1.587)
β_7	E→Attitude toward supporting children	-0.057	(-0.155, 0.041)	(-0.139, 0.025)
β_8	CS services→CS satisfaction	0.010	(0.000, 0.020)	(0.001, 0.018)
β_9	Emp services→Earnings	0.002	(-0.023, 0.026)	(-0.019, 0.022)
β_{10}	Parenting services→Attitude toward supporting children	0.004	(0.001, 0.007)	(0.001, 0.006)
β_{11}	CS services→Compliance	-0.004	(-0.011, 0.003)	(-0.010, 0.002)
β_{12}	Emp services→Compliance	-0.000	(-0.000, 0.000)	(-0.000, -0.000)
β_{13}	Parenting Services→Compliance	0.000	(-0.001, 0.002)	(-0.001, 0.002)
β_{14}	CS satisfaction→Compliance	0.058	(0.013, 0.104)	(0.021, 0.096)
β_{15}	Earnings→Compliance	0.005	(0.003, 0.008)	(0.004, 0.007)
β_{16}	Attitude toward supporting children→Compliance	0.028	(-0.011, 0.067)	(-0.005, 0.061)

		Indirect Effects		
Sum of indirect	E→Cmpl	-0.001	(-0.023, 0.055)	(-0.019, 0.018)
$\beta_2*\beta_8*\beta_{14}$	E→CS svcs→CS satisf→Cmpl	0.001	(0.000, 0.002)	(0.000, 0.002)
$\beta_3*\beta_9*\beta_{15}$	E→Emp svcs→Earngs→Cmpl	0.000	(-0.002, 0.002)	(-0.001, 0.002)
$\beta_4*\beta_{10}*\beta_{16}$	E→Prnt svcs→Att Supp Chldrn→Cmpl	0.001	(-0.001, 0.002)	(0.000, 0.002)
$\beta_2*\beta_{11}$	E→CS svcs→Cmpl	-0.005	(-0.015, 0.005)	(-0.14, 0.003)
$\beta_3*\beta_{12}$	E→Emp svcs→Cmpl	-0.005	(-0.012, 0.002)	(-0.011, 0.001)
$\beta_4*\beta_{13}$	E→Prnt svcs→Cmpl	0.003	(-0.009, 0.014)	(-0.007, 0.012)
$\beta_5*\beta_{14}$	E→CS satisf→Cmpl	0.010	(0.001, 0.018)	(0.002, 0.017)
$\beta_6*\beta_{15}$	E→Earngs→Cmpl	-0.002	(-0.016, 0.011)	(-0.014, 0.009)
$\beta_7*\beta_{16}$	E→Att Supp Chldrn→Cmpl	-0.002	(-0.005, 0.002)	(-0.005, 0.001)
$\beta_2*\beta_8$	E→CS svcs→CS satisfy	0.014	(0.000, 0.027)	(0.002, 0.025)
$\beta_3*\beta_9$	E→Emp svcs→Earngs	0.021	(-0.314, 0.357)	(-0.260, 0.303)
$\beta_4*\beta_{10}$	E→Prnt svcs→Att Supp Chldrn	0.029	(0.004, 0.055)	(0.008, 0.050)

Note: Confidence intervals calculated using Delta method (Sobel test)

APPENDIX 3

Appendix 3 Figure 1. Full Estimation Model Results: All States

Indirect effects:
Sum of indirect Tmt→Cmpl = 0.005
E→CS svcs→CS satisf→Cmpl = 0.000*
E→Emp svcs→Earngs→Cmpl = -0.001+
E→Prnt svcs→Att Supp Chldrn→Cmpl = 0.000+
E→CS svcs→Cmpl = 0.003
E→Emp svcs→Cmpl = -0.003*
E→Prnt svcs→Cmpl = -0.004+
E→CS satisf→Cmpl = 0.007**
E→Earngs→Cmpl = 0.002
E→Att Supp Chldrn→Cmpl = 0.000
E→CS svcs→CS satisfy = 0.012***
E→Emp svcs→Earngs = -0.141+
E→Prnt svcs→Att Supp Chldrn = 0.019***

Fit statistics:
AIC = 137928.537
BIC = 138423.727
χ^2 = 1674.027
df = 306
RMSEA = 0.034
CFI = 0.525
TLI = 0.424
SRMR = 0.043

Appendix 3, Table 1. Descriptive Statistics in the Eight CSPED States

	Statistical significance of difference in means		
	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage	
Employment services	26.43	12.88	***
	(1.21)	(0.95)	
Child support services	1.72	0.53	***
	(0.09)	(0.05)	
Parenting services	7.45	1.44	***
	(0.35)	(0.18)	
Earnings (not rescaled)	$13,125.92	$12,830.11	
	($403.62)	($364.75)	
Satisfaction with the child support system	68.56%	45.51%	***
Sense of responsibility for children	4.27	4.23	*
	(0.01)	(0.01)	
Child support compliance	37.97%	37.60%	
	(0.71%)	(0.71%)	
Male	90.38%	90.76%	
Age			
<25	8.82%	8.36%	
25–40	61.92%	64.52%	+
>40	29.26%	27.12%	
Race/Ethnicity			
Hispanic/Latinx	22.75%	23.52%	
Non-Hispanic white	33.95%	34.16%	
Non-Hispanic black	37.91%	36.42%	
Non-Hispanic other, multiracial, don't know, refused	5.39%	5.90%	
Marital Status			
Married	15.10%	12.99%	+
Divorced/separated/widowed	39.10%	40.42%	
Never married	45.81%	46.59%	
Educational attainment			
<HS diploma	24.36%	24.47%	
HS diploma or GED	41.81%	44.18%	
Some college/associate's degree	30.95%	28.02%	*
Bachelor's degree or more	2.89%	3.34%	
Marital or nonmarital children[a]			
Texas (N/A)	10.12%	10.50%	
All children nonmarital	60.34%	61.78%	
All children marital	12.24%	11.70%	
Both nonmarital and marital	16.37%	15.06%	

(table continues)

Appendix 3, Table 1, continued

	Statistical significance of difference in means	
	Extra Services Group	Regular Services Group
	Mean/Percentage	Mean/Percentage
Number of custodial parents for minor children a		
Texas (N/A)	10.12%	10.50%
1 partner	41.63%	42.07%
2 partners	29.20%	28.49%
3 partners	12.24%	12.24%
4+ partners	5.87%	5.74%
Number of nonresident children [a]		
Texas (N/A)	10.12%	10.50%
No nonresident children	4.05%	4.05%
1	35.66%	35.84%
2	24.81%	23.49%
3	13.26%	13.72%
4+	11.17%	11.44%
Number of coresident children [a]		
Texas (N/A)	10.12%	10.50%
No coresident children	62.46%	61.09%
1	15.09%	16.24%
2	7.36%	6.27%
3	2.54%	3.24%
4+	1.48%	1.71%
Age of youngest nonresident child [a]		
Texas (N/A)	10.12%	10.50%
<5	26.34%	26.67%
5–9	30.05%	30.79%
10–14	20.27%	19.50%
15–18	8.20%	7.50%
No noresident children	4.07%	4.08%
Age of oldest nonresident child [a]		
Texas (N/A)	10.12%	10.50%
<5	10.80%	11.39%
5–9	22.21%	23.15%
10–14	28.82%	27.99%
15–18	23.03%	21.93%
No noresident children	4.07%	4.08%
Average monthly current child support paid in year before random assignment (administrative records)	$1,150.84 ($35.73)	$1,124.46 ($35.54)
Average monthly child support owed in year before random assignment (administrative records)	$3,937.55 ($68.78)	$3,853.31 ($68.48)

(table continues)

Appendix 3, Table 1, continued

	Statistical significance of difference in means	
	Extra Services Group Mean/Percentage	Regular Services Group Mean/Percentage
Child support compliance in year before random assignment (amt paid/amt owed) (administrative records)	30.53%	30.56%
	(0.69%)	(0.72%)
Provided informal cash or noncash support to any child in the last 30 days	63.83%	65.91%
Percentage of quarters employed in year before random assignment (administrative records)	46.31%	51.04%
	(0.91%)	(0.93%)
Total earnings in year before random assignment (administrative records)	$7,342.98	$7,358.29
	($264.96)	($272.51)
Received SNAP in 30 days before random assignment	38.69%	38.43%
Average monthly TANF benefits received by custodial parent in year before random assignment (administrative records)	$75.90	$75.99
	($3.87)	($4.07)
Ever convicted	69.29%	68.24%
Noncustodial parent depression categories		
Texas (N/A)	10.12%	10.50%
Not depressed	68.13%	68.66%
Major depression	18.57%	18.01%
Severe major depression	3.19%	2.83%
Motivation to participate in CSPED		
Texas (N/A)	10.12%	10.50%
Not at all/ a little/somewhat	8.05%	8.69%
Very	34.15%	31.88%
Extremely	47.68%	48.93%
State (grantee)		
California	15.72%	15.73%
Colorado	15.55%	15.30%
Iowa	13.84%	13.83%
Ohio	10.95%	11.34%
South Carolina	2.22%	2.57%
Tennessee	16.99%	15.79%
Texas	10.12%	10.50%
Wisconsin	14.60%	14.95%
N	1,981	1,917

Notes:
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.10$ weighted means and proportions presented
[a] Does not sum to 100% because a small number of noncustodial parents in both groups (<1%) had no minor children.

Appendix 3, Table 2. OLS regression results for child support services and satisfaction with the child support program in the eight CSPED states

	Model 1	Model 2	Model 3	Model 4
	Effect of CSPED on Service Receipt	Effect of CSPED on Satisfaction	Effect of CSPED and Services on Satisfaction	Interactive Effect of CSPED and Services on Satisfaction
Extra services group (E)	1.193***	0.232***	0.218***	0.204***
	(0.101)	(0.015)	(0.016)	(0.016)
Child support service hours			0.011***	-0.004
			(0.002)	(0.005)
Ex child support service hours in the eight CSPED states				0.019***
				(0.005)
Constant	-0.008	0.593***	0.593***	0.604***
	(0.390)	(0.068)	(0.068)	(0.068)
N	3,898	3,898	3,898	3,898

Notes: Robust standard errors in parentheses. All models include all control variables in Table 1.
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 3, Table 3. OLS regression results for employment services and earnings in the eight CSPED states

	Model 1 Effect of CSPED on Service Receipt		Model 2 Effect of CSPED on Earnings		Model 3 Effect of CSPED and Services on Earnings		Model 4 Interactive Effect of CSPED and Services on Earnings	
Extra services group (E)	13.425	***	0.340		0.475		0.578	
	(1.536)		(0.518)		(0.526)		(0.574)	
Employment service hours					-0.010+		-0.006	
					(0.005)		(0.008)	
E x employment service hours							-0.006	
							(0.011)	
Constant	5.885		7.743	***	7.802	***	7.749	***
	(6.502)		(2.333)		(2.334)		(2.343)	
N	3,898		3,898		3,898		3,898	

Notes: Robust standard errors in parentheses. All models include all control variables in Table 1.
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 3, Table 4. OLS regression results for parenting services and sense of responsibility for children in the eight CSPED states

Variables	Model 1 Effect of CSPED on Service Receipt	Model 2 Effect of CSPED on Sense of Responsibility	Model 3 Effect of CSPED and Services on Sense of Responsibility	Model 4 Interactive Effect of CSPED and Services on Sense of Responsibility
Extra services group (E)	6.083***	0.049**	0.034+	0.035+
	(0.387)	(0.019)	(0.020)	(0.020)
Parenting service hours			0.002**	0.002
			(0.001)	(0.003)
E x parenting service hours				-0.000
				(0.003)
Constant	-1.759	4.011***	4.014***	4.014***
	(1.566)	(0.081)	(0.080)	(0.081)
N	3,894	3,897	3,893	3,893

Notes: Robust standard errors in parentheses. All models include all control variables in Table 1.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$

Appendix 3, Table 5. OLS regression results for pathways from CSPED to compliance in the eight CSPED states

	Model 1 Effect of CSPED on Compliance	Model 2 Effect of CSPED and Service Receipt on Compliance	Model 3 Effect of CSPED and Intermediate Outcomes on Compliance	Model 4 Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance	Model 5 Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance w/ Treatment*Service Receipt and Treatment*Intermediate Outcome Interactions	Model 6 Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance: All Paths
Extra services group (E)	0.006	0.011	-0.003	0.002	0.088	0.073
	(0.009)	(0.010)	(0.009)	(0.010)	(0.065)	(0.070)
Earnings			0.004***	0.004***	0.004***	0.004***
			(0.001)	(0.001)	(0.001)	(0.001)
Satisfaction			0.030**	0.029**	0.026*	0.023+
			(0.009)	(0.009)	(0.013)	(0.013)
Attitude to supporting children			0.015+	0.016*	0.027*	0.026*
			(0.008)	(0.008)	(0.011)	(0.011)
E x earnings					-0.000	0.000
					(0.001)	(0.001)
E x satisfaction					0.004	0.004
					(0.019)	(0.020)
E x responsibility					-0.022	-0.019
					(0.015)	(0.016)
Employment service hours		-0.000**		-0.000*	-0.000	-0.000*
		(0.000)		(0.000)	(0.000)	(0.000)
Child support service hours		0.003+		0.002	-0.004+	-0.006*
		(0.001)		(0.001)	(0.002)	(0.002)
Parenting service hours		-0.001+		-0.001+	-0.001+	-0.001
		(0.000)		(0.000)	(0.001)	(0.003)
E x employment service hours					-0.000	0.000
					(0.000)	(0.000)
E x child support service hours					0.008**	0.007+
					(0.003)	(0.004)
E x parenting services hours					0.001	0.003
					(0.001)	(0.005)
Employment service hours x earnings						0.000*
						(0.000)

(table continues)

Appendix 3, Table 5, continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Effect of CSPED on Compliance	Effect of CSPED and Service Receipt on Compliance	Effect of CSPED and Intermediate Outcomes on Compliance	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance w/ Treatment*Service Receipt and Treatment*Intermediate Outcome Interactions	Effect of CSPED, Service Receipt, and Intermediate Outcomes on Compliance: All Paths
Child support service hours x satisfaction						0.005
						(0.005)
Parenting service hours x responsibility						0.000
						(0.001)
E x earnings x employment service hours						-0.000
						(0.000)
E x satisfaction x child support service hours						-0.002
						(0.006)
E x responsibility x parenting services hours						-0.000
						(0.001)
Constant	0.407***	0.407***	0.296***	0.294***	0.253***	0.258***
	(0.042)	(0.042)	(0.051)	(0.051)	(0.059)	(0.060)
N	3,898	3,894	3,897	3,893	3,893	3,893

Notes: Robust standard errors in parentheses. All models include all control variables in Table 1.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$

Appendix 3, Table 6. SEM Estimates with 95% and 90% Confidence Intervals: All States

	Path	Estimate	95% Confidence Interval	90% Confidence Interval
$\beta 1$	E→Compliance	0.001	(-0.018, 0.019)	(-0.015, 0.016)
$\beta 2$	E→CS services	1.201	(0.997, 1.405)	(1.029, 1.372)
$\beta 3$	E→Emp services	13.543	(10.522, 16.563)	(11.007, 16.078)
$\beta 4$	E→Parenting services	6.011	(5.237, 6.785)	(5.361, 6.660)
$\beta 5$	E→CS satisfaction	0.219	(0.187, 0.250)	(0.193, 0.245)
$\beta 6$	E→Earnings	0.436	(-0.649, 1.522)	(-0.475, 1.347)
$\beta 7$	E→Attitude toward supporting children	0.027	(-0.011, 0.066)	(-0.005, 0.060)
$\beta 8$	CS services→CS satisfaction	0.010	(0.005, 0.014)	(0.006, 0.013)
$\beta 9$	Emp services→Earnings	-0.010	(-0.021, 0.001)	(-0.020, -0.001)
$\beta 10$	Parenting services→Attitude toward supporting children	0.003	(0.002, 0.005)	(0.002, 0.005)
$\beta 11$	CS services→Compliance	0.002	(-0.001, 0.005)	(0.000, 0.005)
$\beta 12$	Emp services→Compliance	-0.000	(-0.000, -0.000)	(-0.000, -0.000)
$\beta 13$	Parenting Services→Compliance	-0.001	(-0.002, 0.000)	(-0.001, -0.000)
$\beta 14$	CS satisfaction→Compliance	0.031	(0.013, 0.050)	(0.016, 0.047)
$\beta 15$	Earnings→Compliance	0.004	(0.003, 0.005)	(0.004, 0.005)
$\beta 16$	Attitude toward supporting children→Compliance	0.016	(0.001, 0.031)	(0.003, 0.029)
		Indirect Effects		
Sum of indirect	E→Cmpl	0.005	(-0.003, 0.013)	(-0.002, 0.011)
$\beta 2*\beta 8*\beta 14$	E→CS svcs→CS satisf→Cmpl	0.000	(0.000, 0.001)	(0.000, 0.001)
$\beta 3*\beta 9*\beta 15$	E→Emp svcs→Earngs→Cmpl	-0.001	(-0.001, 0.000)	(-0.001, -0.000)
$\beta 4*\beta 10*\beta 16$	E→Prnt svcs→Att Supp Chldrn→Cmpl	0.000	(0.000, 0.001)	(0.000, 0.001)
$\beta 2*\beta 11$	E→CS svcs→Cmpl	0.003	(-0.001, 0.006)	(0.000, 0.006)
$\beta 3*\beta 12$	E→Emp svcs→Cmpl	-0.003	(-0.005, -0.000)	(-0.005, -0.001)
$\beta 4*\beta 13$	E→Prnt svcs→Cmpl	-0.004	(-0.009, 0.000)	(-0.008, -0.000)
$\beta 5*\beta 14$	E→CS satisf→Cmpl	0.007	(0.003, 0.011)	(0.003, 0.010)
$\beta 6*\beta 15$	E→Earngs→Cmpl	-0.141	(-0.292, 0.011)	(-0.268, -0.014)
$\beta 7*\beta 16$	E→Att Supp Chldrn→Cmpl	0.019	(0.009, 0.030)	(0.011, 0.028)
$\beta 2*\beta 8$	E→CS svcs→CS satisfy	0.012	(0.006, 0.018)	(0.007, 0.017)
$\beta 3*\beta 9$	E→Emp svcs→Earngs	-0.141	(-0.292, 0.011)	(-0.268, -0.014)
$\beta 4*\beta 10$	E→Prnt svcs→Att Supp Chldrn	0.019	(0.009, 0.030)	(0.011, 0.028)

Note: Confidence intervals calculated using Delta method (Sobel test)