W-2 Child Support Demonstration Evaluation

Technical Report 6

Nonresponse in the Survey of Wisconsin Works Families

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Nonresponse pervades survey samples of households, and devising methods to handle survey nonresponse continues to receive substantial attention among statisticians and econometricians.[1] Interest centers on whether the data are missing completely at random (MCAR), missing at random (MAR, alternatively known as ignorable nonresponse or selection on observables), or missing nonrandomly (MNR, also known as nonignorable nonresponse or selection on unobservables). The distinction is important because unadjusted estimates of model parameters (e.g., unweighted means or least squares coefficients) are consistent when the data are MCAR; however, if the data are MAR or MNR then some adjustment (e.g., bounds, weights, instruments, or assumptions about the missingness process) is needed for consistent estimation.

The objective of this technical report is twofold. First, as background material we provide a survey of common methods used to address unit nonresponse, making sharp distinctions between data that are MCAR, MAR, and MNR. The methods described are useful in a variety of situations where social scientists confront contaminated data. Second, and more specific to the Child Support Demonstration Evaluation (CSDE), we describe briefly the Survey of Wisconsin Works Families (SWWF), a survey of resident parents (RP) and nonresident parents (NRP) associated with the CSDE, and then estimate models of survey response in order to construct weights for use in the RP and NRP surveys.[2] The weights are designed for use in summary statistics of survey outcomes and in models that assume the nonresponse process is MAR. Researchers may wish to check their weighted model estimates against some more flexible alternatives under the MNR assumption detailed in the next section.

Common Solutions for Survey Nonresponse

To fix ideas we begin with a discussion of unit nonresponse in the context of cross-sectional data, and then extend it to panel data. Our discussion draws heavily from the surveys by Heckman and Robb (1985a,b) and Vella (1998), and the interested reader is directed there for a more complete treatment. The statistical model of interest takes the following form:

[1] We thank Greg Duncan and Robert Moffitt for helpful comments on an earlier version of this report.

[2] Although item nonresponse may prove to be an issue in the SWWF, a review of methods to deal with this problem is beyond the scope of the current paper. See Madow, Nisselson, and Olkin (1983) and Little and Rubin (1987) for an extensive discussion of item nonresponse.

(1) $y_i^* = x_i' \beta + u_i, \qquad i = 1, 2, \ldots, N$

(2) $r_i^* = z_i' \delta + e_i, \qquad i = 1, 2, \ldots, N$

(3) $r_i^* > 0 \Rightarrow r_i = 1; \; r_i = 0$ otherwise

(4) $y_i = r_i \times y_i^*,$

where y_i^* is a latent outcome of interest with observed counterpart y_i, r_i^* is an index function for the latent propensity to participate in the survey with r_i the observed participation decision, and x_i and z_i are $K \times 1$ and $M \times 1$ vectors of observed regressors with the assumed properties of $E[u_i \mid x_i] = 0$ and $E[e_i \mid z_i] = 0$.[3] We assume that z_i is available for both respondents and nonrespondents, while we will discuss situations in which x_i is not available for nonrespondents. Left unspecified at this point is the potential stochastic dependence between u_i and z_i as well as between u_i and e_i. This forms the basis of the following sections.

A) Missing Completely at Random, $E[u_i \mid e_i] = 0$ and $E[u_i \mid z_i] = 0$

In the situation in which u_i is stochastically independent of both z_i and e_i the data are said to be missing completely at random (MCAR), or that selection is exogenous. If we specify a probability mechanism for the sample, $Pr(r_i \mid y_i)$, then MCAR implies that $Pr(r_i \mid y_i) = Pr(r_i)$; that is, the sample is unconfounded (Rubin, 1983). This is clearly the best-case scenario when data are missing because estimating the model on the subsample for which $r_i = 1$ yields consistent estimates of the parameters of interest, β, without the need of specifying the missing data process, $Pr(r_i \mid y_i)$, or imposing distributional assumptions on u_i. Unfortunately, MCAR is rarely satisfied in practice, making it necessary to consider alternative formulations.

B) Missing at Random, $E[u_i \mid e_i] = 0$ and $E[u_i \mid z_i] \neq 0$

When we relax the conditional mean independence assumption between z_i and u_i we obtain the situation known as missing at random (MAR), or selection on observables. This approach is common in the statistics literature (e.g., Little and Rubin, 1987; Robins and Rotnitzky, 1995; Rosenbaum and Rubin, 1983), but with the exception of Barnow et al. (1980) and Heckman and Robb (1985a,b) it has received

[3] Although some extend the participation decision into a sequential model of the probability of locating the sample member followed by the conditional probability of participation given location (e.g., Groves and Couper, 1998; Lin et al., 1999), we focus on the more common binary specification given the very low refusal rate in the SWWF.

little attention among econometricians until the recent work of Fitzgerald et al. (1998), Heckman et al. (1997, 1998, 1999), Hahn (1998), and Hirano et al. (2000). Ignoring this selection mechanism and estimating the model in equation 1 via least squares on the subsample for which $r_i = 1$ yields *inconsistent* estimates of the parameters of interest, β. That is, MAR implies that z_i not only affects the probability of response but it also affects the density of y_i conditional on x_i, or, as suggested by Fitzgerald et al. (1998, p. 260), "z is endogenous to y."

A variety of methods have been proposed in the literature to deal with data that are MAR. Most often these methods are developed for treatment-effects models when data for the control group do not come from a randomized trial. Early efforts at correcting for MAR bias are attributed to Rubin (1977, 1979), who proposed the method of "matching" observations from the nonexperimental comparison group to those in the treatment group on the basis of a covariate, or vector of covariates. In many situations the number of covariates can be quite large, leading to the missing data version of the "curse of dimensionality." To solve the dimensionality problem, Rosenbaum and Rubin (1983) make the common assumption that $E[e_i \mid z_i] = 0$, which implies that the selection model is of the reduced-form variety, in order to write $Pr(r_i = 1 \mid z_i) = 1 - F(-z_i' \delta)$, where $F(.)$ is a proper cdf. This yields the "propensity score," which in the treatment-effects literature is defined as the probability of assignment to treatment conditional on the pretreatment covariates. Instead of matching on a possibly large vector of covariates, the match occurs on the single probability of assignment. The inverse of the propensity score is then used as a weight for calculating means, variances, and possibly regression parameters.

An analogy to the propensity score applies to the case of unit nonresponse. With unit nonresponse one simply estimates equation 2 for the probability of response with either parametric or nonparametric methods, retains the fitted probabilities, $\hat{p}_i$, and then estimates equation 1 for the subsample for which $r_i = 1$ via weighted least squares with $\hat{p}_i^{-1}$ as weights. A critical requirement for this approach to work is that the z_i's must be available for both respondents and nonrespondents (Fitzgerald et al., 1998; Wooldridge, 1999). Provided that selection occurs only on observables this approach is very attractive because of its computational convenience. Recent work by Hahn (1998) and Hirano et al. (2000) attempts to improve of the efficiency of the inverse probability weighting method, but for those researchers most concerned about consistency of point estimates, the latter approach is direct and readily available in most statistical packages.

A critical issue in the propensity score approach is proper identification of the probability of response (treatment) as opposed to the parameters in the model of interest. If z_i and x_i contain the same elements, then identification is achieved provided that *F(.)* is nonlinear, thus ruling out the linear probability model. Identification is likely to be more powerful if there are credible exclusion restrictions

that can be exploited. For example, in the SWWF described below, there are administrative data available prior to the survey for both respondents and nonrespondents. In addition, there are variables specific to the survey instrument that are likely to affect the probability of survey participation but not the outcomes of interest, particularly in the NRP survey. These include, among others, the number of phone calls made to reach survey households and the replicate structure that determines whether the NRP is eligible for in-person interviews.

Wooldridge (1999) provides an eloquent overview and asymptotic theory underlying inverse probability weighting methods of the type described herein. Although his application is to variable probability samples, such as the oversampling of low-income households in the University of Michigan's Panel Study of Income Dynamics, the methods are applicable to situations of unit nonresponse and panel attrition.[4] Specifically, Wooldridge (1999) defines the problem in terms of **weighted M-estimators**, which stands for "maximum likelihood-like estimators" such as maximum likelihood, linear and nonlinear least squares, and quasi-maximum likelihood.

In terms of the notation in equations (1)–(4) above, define the objective function as

(5) $$\sum_{i=1}^{N_r} \hat{p}_i^{-1} q(x_i, y_i, \beta),$$

where N_r refers to the subsample of survey respondents, and $q(.)$ is the objective function to be minimized. In equation 1, $q(x_i, y_i, \beta) = (y_i - x_i\beta)^2$ for scalar x_i. This formulation can readily accommodate other, more complicated models than the linear one in equation 1. For example, suppose that in place of equation 1 we have

(6) $$y_i = m(x_i, \beta) + u_i,$$

where $m(x_i, \beta)$ is some nonlinear function of the parameters, say the Box-Cox transformation, then the objective function is $q(x_i, y_i, \beta) = (y_i - m(x_i\beta))^2$. Alternatively, if $m(x_i, \beta)$ is a model for the median of $y_i|x_i$, then $q(x_i, y_i, \beta) = |(y_i - m(x_i\beta))|$. Finally, the weighted M-estimator can accommodate binary choice models whereby $q(x_i, y_i, \beta) = -(y_i \log(G(x_i\beta)) + (1 - y_i)\log(1 - G(x_i\beta)))$, and where $y_i = 1$ for a "yes" and $G(x_i\beta)$ is the response probability.

[4] An early use of inverse probability weighted estimators can be found in the choice-based sampling literature of Manski and Lerman (1977), Cosslett (1981), and Hausman and Wise (1981).

Wooldridge (1999) proves that the weighted M-estimator is consistent and asymptotically normally distributed with variance-covariance matrix $\hat{A}^{-1}\hat{B}\hat{A}^{-1}$, i.e.,

(7) $$\left(\sum_{i=1}^{N_r}\hat{p}_i^{-1}\nabla_\beta^2 q_i(\beta)\right)^{-1}\left(\sum_{i=1}^{N_r}\hat{p}_i^{-2}\nabla_\beta q_i(\beta)'\nabla_\beta q_i(\beta)\right)\left(\sum_{i=1}^{N_r}\hat{p}_i^{-1}\nabla_\beta^2 q_i(\beta)\right)^{-1},$$

where ∇_β stands for the gradient of the function with respect to β and ∇_β^2 refers to the second gradient. In the case of OLS, the variance-covariance is given as

(8) $$\left(\sum_{i=1}^{N_r}\hat{p}_i^{-1}x_i' x_i\right)^{-1}\left(\sum_{i=1}^{N_r}\hat{p}_i^{-2}\hat{u}_i^2 x_i' x_i\right)\left(\sum_{i=1}^{N_r}\hat{p}_i^{-1}x_i' x_i\right)^{-1},$$

where $\hat{u}_i = y_i - x_i\hat{\beta}_{wls}$ is the weighted least squares residual. Note the resemblance to the White (1980) heteroskedasticity robust variance-covariance matrix; however, in this case the correction is for variable probability sampling. A slight modification is needed for the case of the binary choice model; see p. 1396 of Wooldridge (1999) for details.

As an alternative to weighted least squares, Barnow et al. (1980) extend the sample selection correction ideas of Heckman (1976) (discussed in the next section) to the case of selection on observables. Specifically, observe that the expected value of y_i given x_i and z_i is

(9) $$E[y_i \mid x_i, z_i] = x_i'\beta + E[u_i \mid z_i],$$

where $E[u_i \mid z_i] \neq 0$ when the data are MAR. Thus, if we specify the joint distribution of u_i and z_i, or the conditional mean of u_i given z_i, then we can parameterize $E[u_i \mid z_i]$ and estimate equation 9 with linear or nonlinear least squares depending on the functional form of $E[u_i \mid z_i]$. For example, one choice is to write $E[u_i \mid z_i] = z_i'\pi$ and to estimate via OLS. This model is identified provided that z_i is not a strict subset of x_i.[5]

C) Nonignorable Nonresponse, $E[u_i \mid e_i] \neq 0$ *and* $E[u_i \mid z_i] = 0$

The standard in the econometrics literature is to assume that $E[u_i \mid e_i] \neq 0$, which implies that there is selection on unobservables, or that nonresponse is nonignorable (Heckman, 1976, 1979). Similar to the case of MAR, estimation of equation 1 for the subsample of households for which $r_i = 1$ yields biased and inconsistent parameter estimates. Conceptually, the methods designed to handle selection on unobservables are applicable to selection on observables, thus making selection on unobservables the

[5] Another solution to the MAR problem is to employ the nonparametric bootstrap (Efron, 1994). The bootstrap, while offering improvements over asymptotic confidence intervals, is computationally demanding compared to the methods discussed in the text.

leading case among econometricians. The literature on this form of sample selection bias is massive, and is ably surveyed by Heckman and MaCurdy (1986) and Vella (1998). Unfortunately, no straightforward application of weighted least squares is available in this case, and more complicated methods of bias correction are necessary.[6]

To fix ideas, consider estimation on the subsample of respondents; that is,

(10) $$E[y_i \mid x_i, z_i, r_i = 1] = x_i' \beta + E[u_i \mid x_i, z_i, r_i = 1] = x_i' \beta + E[u_i \mid z_i, r_i = 1].$$

The prototypical solution to the nonrandom sample selection problem is to assume that u_i and e_i are jointly normally distributed. In this case, Heckman (1976) shows that

(11) $$E[u_i \mid z_i, r_i = 1] = \frac{\sigma_{ue}}{\sigma_e^2} \frac{\phi(z_i' \delta)}{\Phi(z_i' \delta)},$$

where σ_{ue} is the covariance between u and e, σ_e^2 is the variance of e, and $\phi(z_i' \delta)$ and $\Phi(z_i' \delta)$ are the pdf and cdf of the standard normal distributions, respectively. The ratio of the standard normal pdf and cdf in equation 11 is known as the inverse Mills ratio. By substituting equation 11 into equation 10, estimation can proceed via nonlinear least squares, or one can specify the full model and estimate by maximum likelihood.[7] More commonly, however, a two-step estimation method is employed whereby in the first step a reduced-form probit model of the probability of response is estimated, and in the second step the fitted values of the pdf and cdf replace the true values in the inverse Mills ratio and the model is estimated via OLS. Under the null of no selection on unobservables, $\frac{\sigma_{ue}}{\sigma_u^2} = 0$, and the usual OLS standard errors are consistent (although there may be good cause to correct for heteroskedasticity of unknown form à la White, 1980). If the null hypothesis is rejected, then all of the standard errors have to be corrected for the presence of the generated regressor; that is, White standard errors are not enough to purge the standard errors of the bias from the generated regressor (Heckman, 1979; Greene, 1981).

Over the years the two-step "Heckit" procedure has come under assault on a variety of fronts. First is the issue of identification. In some situations the elements of z_i and x_i overlap perfectly, i.e., there

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[6] A possible exception might be the recent work of Rotnitzky and Robins (1997), who claim to develop a weighted estimator for nonignorable nonresponse. However, their formulation is not common and it is not clear whether it corrects for selection on unobservables as typically conceived among econometricians.

[7] Note that if data on (y_i, x_i, z_i) are completely unavailable for nonrespondents, it is still possible to estimate the sample selection model that arises when we substitute equation 11) into equation 10) by NLS. This is simply the truncated version of Heckman's (1976, 1979) original model (Bloom and Killingsworth, 1985).

are no exclusion restrictions. Technically, under joint normality the model is identified off of the nonlinearity in the inverse Mills ratio; however, because the normal distribution is roughly linear over much of its range, identification is weak unless some continuous variables in z_i have enough variation to induce tail behavior. This has led some researchers over the years to invoke exclusion restrictions without much behavioral motivation in order to secure identification. Users of the SWWF are at an advantage here as noted in the previous sections because of access to presample administrative data and survey instrument variables.

The second major area of criticism lies in the assumption of normality and in parametric assumptions in general. The assumption of bivariate normality between u_i and e_i leads to the linear conditional mean in equation 11 above. Lee (1982, 1984) suggests that it is possible to capture deviations from normality *and* linearity by appealing to Edgeworth-type expansions such as the Gram-Charlier series expansion. If we continue to assume for the moment that e_i is distributed standard normal, then Lee (1982, 1984) shows that we can rewrite the sample selection rule in equation 11 as

$$\textbf{(12)} \qquad E[u_i \mid z_i, r_i = 1] = \tau_1 \frac{\phi(z_i'\delta)}{\Phi(z_i'\delta)} - \tau_2 \frac{z_i'\delta\phi(z_i'\delta)}{\Phi(z_i'\delta)} + \tau_3\left[(z_i'\delta)^2 - 1\right]\frac{\phi(z_i'\delta)}{\Phi(z_i'\delta)},$$

where τ_1, τ_2, τ_3 are unknown parameters reflecting covariances between the errors terms. The attraction of this approach is that it is computationally convenient because it simply involves higher-order terms of the index function from the first-stage probit, while at the same time allowing for departures from linearity. Indeed, a test of normality is nested within the conditional mean function in equation 12—simply test whether τ_2 or τ_3 differs statistically from zero. Moreover, Lee goes on to show that it is possible to relax the normality assumption in e_i. Specifically, we can replace $z_i'\delta$ in equation 12 with $-J(-z_i'\delta)$, where $J(z_i'\delta) = \Phi^{-1} * F(z_i'\delta)$, Φ^{-1} is the inverse of the normal cdf, and $F(.)$ is the cdf of e_i such as the logistic or the chi-square. The latter is sometimes referred to as the "return to normality" model because the nonnormal distribution function $F(.)$ is transformed back to the normal distribution, greatly simplifying calculation of the conditional mean (Maddala, 1983).[8]

Another early departure from normality is found in the least squares selection correction method of Olsen (1980). He invokes two key assumptions: the distribution of e_i is known, but possibly nonnormal, and u_i is a linear function of e_i. If we further assume that e_i is uniformly distributed then we can rewrite equation 11 as

[8] The series-expansion approach of Gallant and Nychka (1987) may be preferable to the approach of Lee because it is more nonparametric in principle.

(13) $$E[u_i \mid z_i, r_i = 1] = \rho\sigma_e 3^{1/2}(z_i'\delta - 1),$$

where ρ is the correlation coefficient between u_i and e_i. The two-step procedure now requires estimating equation 2 via OLS, i.e., the linear probability estimator, in step one, and then replacing the fitted probabilities in step two and estimating equation 10 by OLS as well. In this case identification is clear—there must be an exclusion restriction imposed or else the model suffers from perfect collinearity. Though some of the fitted probabilities may lie outside the unit circle with the LP estimator, this does not prohibit consistent estimation of the model parameters of interest, i.e., β.

The 1980s witnessed a flurry of sample selection correction models that abandoned the parametric index models altogether (e.g., Cosslett, 1983; Gallant and Nychka, 1987; Powell et al., 1989; Newey et al., 1990). The idea here is to write the conditional mean in equation 11 as a general model of unknown form and to estimate the first step of the two-step procedure nonparametrically or semiparametrically. The second step is then estimated by OLS or some other procedure depending on the correction method adopted (see Vella, 1998, for details). These methods are attractive because of their reduced reliance on parametric assumptions, but they are often computationally demanding in both the estimation and inference stage as the latter frequently is conducted by bootstrapping the t-statistic or confidence interval. As a consequence their adoption in practice is comparatively rare relative to parametric methods. The reliance on parametric methods seems justified in light of the flexibility of the methods of Lee (1982, 1984) that permit deviations from normality and linearity in the conditional mean specifications, while still maintaining computational ease. Moreover, Newey (1999) recently showed that the linear probability method of Olsen (1980) is robust to misspecification of the error distribution. Specifically, he shows that so long as u_i is a linear function of e_i, incorrectly assuming that e_i is uniformly distributed still permits consistent estimation "up to scale." Newey (1999) concludes "that the inconsistency of parametric estimators may be small when the regressor conditions are approximately satisfied…" (p. 129). Unfortunately, this result does not extend to Heckman's (1976) original formulation.

D) Instrumental Variables

A frequently overlooked, yet potentially attractive, approach to the missing data problem is instrumental variables (IV). IV is attractive both because it invokes minimal assumptions, many of which can be readily tested, and because it is computationally convenient (Heckman and Robb, 1985a,b). Suppose we have access to a $L \times 1$ vector of instruments, w_i, satisfying the following properties:

(i) $E[u_i \mid w_i, r_i] = 0$

(ii) rank $E[w_i w_i' \mid r_i = 1] = L$

(iii) rank $E[w_i x_i' \mid r_i = 1] = K$,

where $L \geq K$, then the IV estimator is given as

$$\textbf{(14)} \quad \hat{\beta}_{IV} = \left[\left(N_r^{-1} \sum_{i=1}^{N_r} x_i w_i' \right) \left(N_r^{-1} \sum_{i=1}^{N_r} w_i w_i' \right)^{-1} \left(N_r^{-1} \sum_{i=1}^{N_r} w_i x_i' \right) \right]^{-1} \times$$

$$\left[\left(N_r^{-1} \sum_{i=1}^{N_r} x_i w_i' \right) \left(N_r^{-1} \sum_{i=1}^{N_r} w_i w_i' \right)^{-1} \left(N_r^{-1} \sum_{i=1}^{N_r} w_i y_i \right) \right].$$

Regardless of the source of stochastic dependence between equations (1) and (2), i.e., selection on observables or selection on unobservables, the IV estimator is consistent for the selected sample.

As is the case with all IV estimators, the key for consistent identification lies in the choice of w_i. Natural candidates include the elements in z_i as well as nonlinear transformations of the z_i, say $g(z_i)$. Clearly, when there is selection on observables, $E[u_i \mid z_i] \neq 0$, rendering the z_i invalid as instruments. However, $g(z_i)$ may still be valid provided that assumptions i–iii are satisfied. Moreover, nonlinear transformations of x_i, $g(x_i)$, may also be candidates. The advantage of IV is that several assumptions are testable—we can use the partial R^2 statistic proposed by Shea (1998), and clarified by Godfrey (1999), to test for the correlation between the vector of instruments (w_i) and the vector of possibly endogenous regressors (x_i); we can use the Hausman (1978) test to test for endogeneity of the x_i's; we can use the Sargan (1957) test, or Hansen (1982) test with Generalized Method of Moments, to test the validity of the overidentifying restrictions when $w_i > x_i$; and we can use the pseudo likelihood ratio test to test the exogeneity of the instruments (Godfrey, 1988). IV does, however, require that we "hang our hat" on a vector of just-identifying instruments that by assumption must satisfy assumptions i–iii, and this vector is increasing in the dimensionality of x_i.

Bounds

Horowitz and Manski (1998) argue that many of the methods described above in sections A–D rest on untenable assumptions. They believe that much of what is necessary to achieve point estimates in the presence of survey nonresponse is untestable; that is, "the only way to identify population parameters

is to make assumptions that determine the distribution of the missing data" (p. 38). Instead, Horowitz and Manski propose a procedure whereby bounds are calculated around the statistic of interest. This method is inherently conservative in that the bounds are often quite wide. Note that the force of their argument is weakened by the recent result of Newey (1999), by the use of nonparametric and semiparametric estimators, as well as by the use of IV, which do not require assumptions about the distribution of the missing data. However, it is instructive to briefly review the method of bounds, with particular emphasis on unit nonresponse such that (y_i, x_i) is missing when $r_i = 0$. We assume throughout that z_i is available for respondents and nonrespondents.

We are interested in estimating the conditional mean $E[y_i \mid x_i \in A] \equiv E[y_i \mid A]$ from equation 1, which can be expressed as

(15) $$E[y_i \mid A] = E[y_i \mid A, r_i = 1] * P(r_i = 1 \mid A) + E[y_i \mid A, r_i = 0] * P(z_i = 0 \mid A).$$

The problem with unit nonresponse is that neither $P(r_i = 1 \mid A)$ nor $E[y_i \mid A, r_i = 0]$ is identified. Consequently, Horowitz and Manski (1998) propose bounds on the conditional mean $E[y_i \mid x_i]$ as follows:

(16) $$E[y_i \mid A, r_i = 1] * P_e(r_i = 1 \mid A) + D_0 * P_e(r_i = 0 \mid A) \le E[y_i \mid x_i] \le$$

$$E[y_i \mid A, r_i = 1] * P_e(r_i = 1 \mid A) + D_1 * P_e(r_i = 0 \mid A),$$

where $D_0 \equiv \inf_{y \in Y} y$, $D_1 \equiv \sup_{y \in Y} y$, and $P_e(r_i = 1 \mid x_i)$ is known as the effective response probability and $P_e(r_i = 0 \mid A) = 1 - P_e(r_i = 1 \mid A)$ is the effective nonresponse probability. The latter are derived from Bayes Theorem whereby

$$P_e(r_i = 1 \mid A) \equiv \frac{P(A \mid r_i = 1) * P(r_i = 1)}{P(A \mid r_i = 1) * P(r_i = 1) + P(r_i = 0)}.$$

The effective response probability is *at most* equal to the actual probability, and each are constrained to be at most equal to 1. They show that inference is not possible at all when $P(A \mid r_i = 1) = 1$. Horowitz and Manski (1998) provide a number of empirical examples for the calculation of bounds, with the bulk of the data coming from simple summary statistics. In many cases bounds will be uninformative if they are quite wide; however, they should be viewed as a useful specification check on the parametric models, much as alternative functional forms of the conditional mean should be employed for sensitivity analysis.

Panel Data

When panel data are available, several new issues in survey nonresponse surface. Unit nonresponse occurs not only with the initial survey but also in the form of attrition as the panel ages. In some cases, survey participants may miss a wave, but then return in a later period, while in other cases they depart permanently for a variety of reasons such as death, institutionalization, moving, or refusal. Most of the literature focuses on the case of permanent attrition (Verbeek and Nijman, 1992; Vella, 1998), and we will do likewise.

Consider the following modification on the statistical model of interest:

(17) $y_{it}^{*} = x_{it}'\beta + \alpha_i + u_{it}, \qquad i = 1, 2, \ldots, N; t = 1,\ldots,T_i$

(18) $r_{it}^{*} = z_{it}'\delta + \gamma_i + e_{it}, \qquad i = 1, 2, \ldots, N; t = 1,\ldots, T_i$

(19) $r_{it}^{*} > 0 \Rightarrow r_{it} = 1; \;\; r_{it} = 0$ otherwise

(20) $y_{it} = r_{it} \times y_{it}^{*},$

where α_i and γ_i represent person-specific and time-invariant latent heterogeneity, and the total length of panel participation, T_i, may also be person-specific. The latent heterogeneity terms are typically treated either as random effects (i.e., uncorrelated with the regressors) or as fixed effects (i.e., correlated with the regressors).

If we define the fixed-effect error term as the deviation from individual time means, $u_{it}^{d} = u_{it} - \frac{\sum_{s=1}^{T} u_{is} r_{is}}{\sum_{s=1}^{T} u_{is}}$, then consistency of the fixed-effect estimator in the case of selection on unobservables requires $E[u_{it}^{d} \mid x_{it}, r_{it}] = 0$; that is, it requires $\sigma_{ue} = 0$. In other words, if the probability of nonresponse is person-specific and time-invariant, then sample selection operates through the fixed heterogeneity and thus can be swept away by the within transformation or by first differencing. This is a powerful result as it does not require a specification of the selection mechanism and is likely to occur in many situations (e.g., Ziliak and Kniesner, 1998). Consistency of the random effects estimator requires a stronger condition— $E[\alpha_i + u_{it} \mid x_{it}, r_{it}] = 0$ —which implies that selection cannot operate either through the fixed heterogeneity or the idiosyncratic time-varying error term.

In the event that selection operates through observables, then the inverse probability weighting method discussed above in section B applies. One simply estimates the probability of attrition for each period, $\hat{p}_{it}$, and then weights the data by the inverse probability before estimation by weighted least squares or weighted M-estimation. If, however, selection is on the time-varying unobservables, u_{it}, (and it is not time invariant), then methods similar to the cross-sectional case apply, although they are often derived for the random effects case (Ridder, 1990). Because parametric assumptions are typically invoked in the latter situation, Verbeek and Nijman (1992) discuss several simple variable-addition tests to check for the presence of attrition. These tests involve appending to equation 17 a variable representing the number of periods a person is in the panel, or a variable that equals 1 if the respondent is present in all the periods and 0 otherwise.

Wooldridge (1995) takes a hybrid approach and invokes the correlated random-effects assumption of Chamberlain (1980). In particular, Wooldridge decomposes the fixed heterogeneity in the attrition equation as $\gamma_i = \kappa_0 + \kappa_1 z_{i1} + ... + \kappa_T z_{iT} + \varepsilon_i$, where ε_i is randomly distributed in the population. Substituting into equation 18 yields

(21) $$r_{it}^{*} = z_{it}'\delta + \kappa_0 + \kappa_1 z_{i1} + ... + \kappa_T z_{iT} + \varepsilon_i + e_{it}.$$

Estimation then proceeds in the usual two-step fashion; in step one estimate the probability of attrition for each period via Probit and construct the inverse Mills ratio, $\hat{\lambda}_{it}$.[9] In step two, estimate the following first difference model for the subsample with $r_{it} = 1$

(22) $$\Delta y_{it} = \Delta x_{it}'\beta + \rho_2 d2_t \hat{\lambda}_{it} + \rho_3 d3_t \hat{\lambda}_{it} + ... + \rho_T dT_t \hat{\lambda}_{it} + \Delta u_{it},$$

where Δ is the first difference operator, ρ_t, t = 2,…,T are unknown parameters to estimate, and the dt_t, t = 2,…,T are time dummies for each period. Under the null hypothesis of no endogenous attrition, $\rho_t = 0$, and this forms the basis of a joint test. Notice that under H_0 standard errors need to be corrected for heteroskedasticity and serial dependence, whereas if H_0 is rejected, the standard errors must also be corrected for the presence of generated regressors (Wooldridge, 1995).

[9] Notice that this is analogous to estimating a discrete hazard under the common assumption that the attrition is permanent.

Data

This section describes the design of the Survey of Wisconsin Works Families (SWWF), including strategies we employed to minimize nonresponse. We also discuss data from the fieldwork and from administrative sources that are available for assessing nonresponse and constructing weights.

Survey Design and Completion Rates

The SWWF is a panel study of resident mothers who participated in W-2 and the legal fathers of a randomly selected focal child. A probability sample of 3,000 resident mothers was drawn from the research population after excluding cases subject to the full pass-through but not initially included in the evaluation. The sample was stratified by W-2 status ("transitioned W-2" and "new W-2") and by W-2 tier location (upper and lower).

For each case, we randomly selected a focal child from among the children who were listed on the W-2 case at entry into W-2 and who would be under age 18 on December 31, 1999. The designated focal child remained the same throughout the panel study.[10]

The legal fathers of the randomly selected focal child make up the survey sample of nonresident fathers. Cases were excluded from the fathers' Time 1 sample if paternity was not established by December 31, 1998, or if a "Good Cause" exemption from pursuing paternity or child support had been established or was pending against the father. These definitions generated an original sample of 2,028 fathers.

At Time 2, we fielded samples of 2,950 mothers and 2,225 fathers. The mother and the father became ineligible if the focal child had died since Time 1 or when we identified errors or changes in the sample frame. Fathers became ineligible at Time 2 if a Good Cause exemption had been established since Time 1. Newly identified legal fathers for whom paternity was established between January 1, 1999, and December 31, 1999, were added at Time 2. If a father or mother had died since Time 1, the surviving parent remained eligible for follow-up interview.

We completed interviews with over 80 percent of mothers at Time 1 and Time 2, and the completion rates are consistently high across characteristics of the sample.[11] Table TR6.1 reports mothers' response rates at Time 1 and Time 2 for the overall sample as well as by individual characteristics.

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[10] We later identified five cases in which a different focal child was selected inadvertently at Time 2 and was the focus of that interview. These cases were excluded from analysis.

[11] Response rates are computed as the total number of completed interviews divided by the total number of eligible (in-scope) cases. Partial interviews are not included in the numerator and are not included in data analysis for the *W-2 Child Support Demonstration Evaluation Final Report*. The final number of in-scope cases was smaller than the original sample sizes because of errors or changes in the sample frame.

Table TR6.1
Mothers' Time 1 and Time 2 Response Rates, by Subgroup Characteristics

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	2,884	2,362	81.9%	2,873	2,354	81.9%
Age of Resident Parent						
16–17	1	1	100.0	1	0	0.0
18–25	1,426	1,164	81.6	1,423	1,168	82.1
26–30	597	505	84.6	596	485	81.4
31 or older	860	692	80.5	853	701	82.2
Race of Resident Parent						
White	834	708	84.9	827	703	85.0
African American	1,682	1,396	83.0	1,678	1,404	83.7
Hispanic	190	133	70.0	190	129	67.9
Native American	70	49	70.0	70	44	62.9
Asian	27	10	37.0	27	10	37.0
Other	1	1	100.0	1	0	0.0
Unknown	80	65	81.3	80	64	80.0
Education of Resident Parent						
Less than high school	1,449	1,167	80.5	1,447	1,157	80.0
High school	1,131	938	82.9	1,126	940	83.5
More than high school	304	257	84.5	300	257	85.7
Language of Resident Parent						
English	2,826	2,343	82.9	2,815	2,334	82.9
Non-English	58	19	32.8	58	20	34.5
Location						
Milwaukee County	2,030	1,676	82.6	2,026	1,681	83.0
Other urban counties	509	398	78.2	503	404	80.3
Rural counties and tribes	345	288	83.5	344	269	78.2
Employment History[a]						
No UI-covered employment	523	409	78.2	522	387	74.1
1–4 quarters	1,111	900	81.0	1,108	903	81.5
5–7 quarters	807	671	83.1	804	688	85.6
All 8 quarters	443	382	86.2	439	376	85.6
Earnings History[a]						
No UI earnings	523	409	78.2	522	387	74.1
$1–$5,000	1,863	1,519	81.5	1,857	1,535	82.7
$5,001–$15,000	461	400	86.8	458	397	86.7
$15,001 or more	37	34	91.9	36	35	97.2

Table TR6.1, continued

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
AFDC Receipt[a]						
None	616	488	79.2	612	490	80.1
1–18 months	1,012	831	82.1	1,009	829	82.2
19–24	1,256	1,043	83.0	1,252	1,035	82.7
Number of Children						
None	35	29	82.9	35	28	80.0
One	1,036	843	81.4	1,030	844	81.9
Two	823	678	82.4	819	687	83.9
Three or more	990	812	82.0	989	795	80.4
Age of Youngest Child						
Unborn	311	253	81.4	310	249	80.3
0–2	1,395	1,156	82.9	1,389	1,131	81.4
3–5	505	410	81.2	504	418	82.9
6–12	556	451	81.1	553	457	82.6
13–18	117	92	78.6	117	99	84.6
Focal Child's Parentage						
Legal father, unknown how	5	2	40.0	5	5	100.0
Nonmarital child	2,515	2,060	81.9	2,505	2,053	82.0
Marital child	364	300	82.4	363	296	81.5
Number Legal Fathers						
No legal fathers	892	699	78.4	887	681	76.8
One	1,469	1,214	82.6	1,464	1,223	83.5
Two or more	523	449	85.9	522	450	86.2
Child Support Order[b]						
No child support order	1,329	1,039	78.2	1,324	1,022	77.2
Child support order	1,555	1,323	85.1	1,549	1,332	86.0
Child Support Paid by All Nonresident Parents[a]						
No child support paid	1,928	1,543	80.0	1,921	1,534	79.9
$1–$999	450	385	85.6	446	384	86.1
$1,000 or more	506	434	85.8	506	436	86.2
Arrearages Owed by All Nonresident Parents						
No arrearages owed	1,267	991	78.2	1,262	978	77.5
$1–$500	71	59	83.1	71	57	80.3
$501–$2,000	346	294	85.0	345	289	83.8
$2,001 or more	1,200	1,018	84.8	1,195	1,030	86.2

Table TR6.1, continued

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Research Group						
Control	1,438	1,163	80.9	1,434	1,179	82.2
Experimental	1,446	1,199	82.9	1,439	1,175	81.7
Case Type						
AFDC	1,485	1,224	82.4	1,478	1,216	82.3
W-2	1,399	1,138	81.3	1,395	1,138	81.6
Initial W-2 Assignment						
W-2 Transition	264	210	79.5	262	201	76.7
Community Service Job	1,277	1,043	81.7	1,275	1,052	82.5
Caretaker of Newborn	307	251	81.8	304	244	80.3
Upper Tier	1,036	858	82.8	1,032	857	83.0
Quarter of Entry						
4th quarter of 1997	1,321	1,071	81.1	1,316	1,071	81.4
1st quarter of 1998	946	795	84.0	942	783	83.1
2nd quarter of 1998	617	496	80.4	615	500	81.3

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Response rates generally hover near 80 percent and rarely fall below 75 percent. Exceptions include completion rates among non-English speakers, largely because interviews were conducted only in English, and among racial and ethnic groups with higher proportions of non-English speakers (e.g., Hispanics). Although completion rates are consistently high, there is a tendency for those with fewer social or economic resources to be underrepresented relative to more advantaged groups. For example, mothers with less education, less stable employment, and lower earnings were less likely to complete interviews than their counterparts with more resources, even though response rates among the former groups are well above 70 percent. Similarly, we interviewed 77 to 80 percent of mothers who did not have child support orders or who were not receiving child support, but completion rates were closer to 86 percent among those with child support orders or child support receipts. Appendix Tables TR6.1 through TR6.3 report completion rates for other sample breakdowns (e.g., Milwaukee versus outside Milwaukee, by case type) and show similar patterns.

We were less successful in locating and interviewing fathers. As shown in Table TR6.2, we completed interviews with only one-third of the sample (33.2 percent at Time 1 and 32.6 percent at Time 2). Among a subsample of fathers who were eligible for telephone and personal interviews (Table TR6.3), the response rates are noticeably higher—42.7 at Time 1 and 46.2 percent at Time 2.[12] In both the overall sample and the subsample, men with fewer economic resources (less stable employment, lower or no earnings, and lower or no child support payments) were less likely to be interviewed. In contrast, we completed interviews with almost one-half the fathers who were employed during eight quarters prior to the study period and who had a history of paying $1,000 or more of child support to the resident mother during the 12 months prior to the study. Men who were the father of the focal child by marriage also were more likely to be interviewed than fathers involved in paternity cases, and almost one-half of the fathers who were white were interviewed compared with less than 30 percent of fathers who were black. (Appendix Tables TR6.4 through TR6.6 report response rates for other breakdowns of the fathers' sample.)

The low completion rates among the fathers raise concerns that data analyses of survey respondents alone, unadjusted for nonresponse, will yield biased estimates. Nonresponse bias should be less severe in the mothers' sample with an overall high response rate, but nonetheless some subgroups tend to be underrepresented. Data analysis of survey respondents alone, without adjustment for nonresponse, may yield biased estimates for the mothers' sample as well.

[12] One-third of the fathers' sample, selected at random, were eligible for telephone and personal interviews. The remaining two-thirds were eligible only for telephone interviews. The motivation for subdividing the sample and procedures for executing this field strategy are discussed later in this report.

Table TR6.2
Fathers' Time 1 and Time 2 Response Rates, by Subgroup Characteristics

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	1,936	643	33.2%	2,130	696	32.7%
Age of Nonresident Parent						
16–17	14	5	35.7	22	5	22.7
18–25	621	205	33.0	717	222	31.0
26–30	489	160	32.7	519	154	29.7
31 or older	802	272	33.9	859	313	36.4
Unknown	10	1	10.0	13	2	15.4
Race of Nonresident Parent						
White	326	154	47.2	361	170	47.1
African American	774	226	29.2	882	246	27.9
Hispanic	95	21	22.1	108	22	20.4
Native American	32	11	34.4	35	10	28.6
Asian	7	0	0.0	7	0	0.0
Other	0	0	0.0	0	0	0.0
Unknown	702	231	32.9	737	248	33.6
Employment History[a]						
No UI-covered employment	522	99	19.0	589	129	21.9
1–4 quarters	459	130	28.3	505	157	31.1
5–7 quarters	418	170	40.7	452	174	38.5
All 8 quarters	454	223	49.1	490	217	44.3
Unknown	83	21	25.3	94	19	20.2
Earnings History[a]						
No UI earnings	522	99	19.0	589	129	21.9
$1–$5,000	718	229	31.9	789	255	32.3
$5,001–$15,000	405	190	46.9	441	199	45.1
$15,001 or more	208	104	50.0	217	94	43.3
Unknown	83	21	25.3	94	19	20.2
Parentage of Focal Child						
Legal father, unknown how	4	2	50.0	5	2	40.0
Paternity	1,602	508	31.7	1,772	555	31.3
Marriage	330	133	40.3	353	139	39.4
Number of Children with Resident Parent						
None	15	10	66.7	23	14	60.9
One	1,247	408	32.7	1,387	437	31.5
Two	448	162	36.2	476	169	35.5
Three or more	226	63	27.9	244	76	31.1

Table TR6.2, continued

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Age of Youngest Child with Resident Parent						
Unborn	33	13	39.4	44	19	43.2
0–2	619	225	36.3	747	244	32.7
3–5	509	158	31.0	524	175	33.4
6–12	652	208	31.9	685	213	31.1
13–18	123	39	31.7	130	45	34.6
Child Support Order with Resident Parent[b]						
No child support order	653	217	33.2	817	254	31.1
Child support order	1,283	426	33.2	1,313	442	33.7
Child Support Payments to Resident Parent[a]						
No child support payments	1,231	327	26.6	1,412	395	28.0
$1–$999 child support paid	347	146	42.1	354	136	38.4
$1,000 or more child support paid	358	170	47.5	364	165	45.3
Arrearages Owed to State						
No arrearages	580	221	38.1	742	267	36.0
$1–$500 owed	74	28	37.8	76	28	36.8
$501–$2,000	360	123	34.2	373	106	28.4
$2,001 or more	922	271	29.4	939	295	31.4
Survey Replicate						
Full effort replicate	677	354	52.3	736	340	46.2
Partial effort replicate	1,259	289	23.0	1,394	356	25.5

Notes: Response rate (RR) = I / (I + R + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Table TR6.3
Final Disposition of Survey Cases at Time 1

					Fathers, by Replicate Structure[a]			
	Mothers		Fathers		Full Effort		Partial Effort	
Disposition	N	%	N	%	N	%	N	%
Total Cases	2,884		1,936		677		1,259	
Interviews								
Complete	2,362	81.9	643	33.2	289	42.7	354	28.1
Partial	54	1.9	61	3.2	19	2.8	42	3.3
Contacted/Not Interviewed								
Refusal	94	3.3	112	5.8	43	6.4	69	5.5
Persistently unavailable	44	1.5	64	3.3	28	4.1	36	2.9
No longer at address/phone	33	1.1	73	3.8	14	2.1	59	4.7
Located/No Contact								
Messages only/no address or phone	35	1.2	63	3.3	28	4.1	35	2.8
Answering machine/no answer	55	1.9	90	4.6	37	5.5	53	4.2
Not Located								
No location information[b]	18	0.6	185	9.6	19	2.8	166	13.2
Bad telephone number and/or address[c]	119	4.1	421	21.7	115	17.0	306	24.3
Other Noninterviews								
Language barrier	34	1.2	19	1.0	7	1.0	12	1.0
Too ill/disabled to participate	3	0.1	6	0.3	4	0.6	2	0.2
Incarcerated	22	0.8	171	8.8	65	9.6	106	8.4
Not fielded	6	0.2	8	0.4	2	0.3	6	0.5
Not pursued in error	2	0.1	5	0.3	0	0.0	5	0.4
Other nonresponse[d]	1	0.0	5	0.3	3	0.4	2	0.2
Relocated/reported dead	2	0.1	10	0.5	4	0.6	6	0.5

[a]Fathers in survey replicates 1–10 were eligible for telephone and in–person interviews. Fathers in replicates 11–30 were eligible for telephone interviews only; hence, "full effort" and "partial effort."
[b]Includes cases with a PO Box or outside the in-person interview zone.
[c]Includes some cases where the address was assumed to be good but was outside the zone for in-person interviews.
[d]Includes one case in the mothers' sample in which the respondent claimed not to be the focal child's mother and this information was not confirmed by CARES. Among the fathers' sample, includes (a) three cases in which the respondent claimed not to be the focal child's father and (b) two cases in which we did not pursue an interview with the father because the mother expressed fear for her safety or the safety of her children.

Efforts to Minimize Nonresponse

As documented in Tables TR6.3 and TR6.4, the low response rate among fathers is due largely to difficulties in locating sample members. The final disposition of cases suggests that cooperation, once a respondent is contacted, is quite high. At Time 1, only about 6 percent of fathers refused to participate while almost 40 percent could not be interviewed because of bad addresses, nonworking telephone numbers, or inability to contact the designated respondent. A similar pattern prevails among the mothers' sample even though a much larger number were interviewed: only about 7 percent of the sample could not be located or contacted. The challenges of locating respondents persisted at Time 2 when slightly larger proportions of the sample were never located or could not be contacted (Table TR6.4). Over one-third of fathers were never located and another 9 percent could not be reached for an interview even after a valid address or telephone number was reached. About 10 percent of mothers were not successfully located and contacted, but refusal rates remained relatively low and even declined slightly at Time 2.[13]

We expected to be less successful in locating and interviewing fathers. Tracing efforts prior to the first wave of data collection indicated that fathers were much more difficult to locate than mothers. Location data from the sample frame (address, telephone number) were less often available for fathers and, when present, were more likely to be incorrect. Contact information gleaned from other sources more frequently yielded bad addresses and nonworking or nonexistent telephone numbers for fathers.

We devised several strategies to minimize nonresponse and increase the chances of locating and interviewing sample members. With one exception, these were applied to the mothers' and fathers' samples:

(a) Advance notification letters were sent to sample members that explained the purpose of the study, requested address confirmation or correction, and included business reply envelopes and a one-dollar bill (at Time 1) or a two-dollar bill (at Time 2).

(b) Brief tracing interviews were conducted with respondents prior to Time 1 to confirm addresses and telephone numbers and to obtain the name and location information for a contact person.

(c) Sample members were told that they would receive a check for $15 (at Time 1) and $25 (at Time 2) after they completed the interview.

(d) At the completion of the interview, each respondent was asked for address and telephone information for the other parent or for someone who may know how to reach the other parent.

[13] Relatively high rates of incarceration among men also dampened response rates in the fathers' survey. Almost 10 percent of the fathers in the sample were incarcerated for the duration of the study period.

Table TR6.4
Final Disposition of Survey Cases at Time 2

					Fathers, by Replicate Structure[a]			
	Mothers		Fathers		Full Effort		Partial Effort	
Disposition	N	%	N	%	N	%	N	%
Total Cases	2,873		2,130		736		1,394	
Interviews								
Complete	2,354	81.9	696	32.7	340	46.2	356	25.5
Partial	20	0.7	18	0.8	5	0.7	13	0.9
Contacted/Not Interviewed								
Refusal	82	2.9	89	4.2	36	4.9	53	3.8
Persistently unavailable	39	1.4	123	5.8	27	3.7	96	6.9
No longer at address/phone	9	0.3	25	1.2	11	1.5	14	1.0
Located/No Contact								
Messages only/no address or phone	48	1.7	62	2.9	34	4.6	28	2.0
Answering machine/no answer	27	0.9	123	5.8	19	2.6	104	7.5
Not Located								
No location information[b]	39	1.4	334	15.7	32	4.3	302	21.7
Bad telephone number and/or address[c]	177	6.2	438	20.6	126	17.1	312	22.4
Other Noninterviews								
Language barrier	27	0.9	15	0.7	5	0.7	10	0.7
Too ill/disabled to participate	1	0.0	3	0.1	2	0.3	1	0.1
Incarcerated	29	1.0	168	7.9	82	11.1	86	6.2
Fielded with error	5	0.2	1	0.0	1	0.1	0	0.0
Not fielded	13	0.5	18	0.8	10	1.4	8	0.6
Not pursued in error	0	0.0	5	0.2	3	0.4	2	0.1
Other nonresponse[d]	2	0.1	5	0.2	2	0.3	3	0.2
Relocated/reported dead	1	0.0	7	0.3	1	0.1	6	0.4

[a]Fathers in survey replicates 1–10 were eligible for telephone and in–person interviews. Fathers in replicates 11–30 were eligible for telephone interviews only; hence, "full effort" and "partial effort."

[b]Includes cases with a PO Box or outside the in-person interview zone.

[c]Includes some cases where the address was assumed to be good but was outside the zone for in-person interviews.

[d]Includes two cases in the mothers' sample in which the respondent claimed not to be focal child's mother and this information was not confirmed by CARES. Among the fathers' sample, includes (a) one case in which the respondent claimed not to be the focal and (b) four cases in which we did not pursue an interview with the father because the mother expressed fear for her safety or the safety of her children.

(e) Telephone calling cards for 15 minutes of long distance calls were mailed to sample members later in the field period as a means of thanking them for their participation or, if they had not been reached, asking them to complete an interview.[14]

(f) In all our communications with sample members, we encouraged them to call a toll-free number to complete an interview or provide updated address or telephone information.

(g) Throughout the field period, the survey contractor maintained a special "tracing department" throughout the field to trace and retrace sample members when telephone numbers or addresses proved to be incorrect.[15]

We took an additional step to minimize nonresponse for the fathers' survey. We divided the fathers' sample into two subsamples, only one of which was eligible for the more intensive effort associated with in-person tracing and face-to-face interviews. In contrast, the entire sample of mothers was potentially eligible for in-person interviews. For both samples, in-person interviewing efforts were limited to Wisconsin cities and metropolitan areas where at least ten cases (mothers and fathers combined) could not be reached by telephone. In practice, personal interviewing efforts were heavily concentrated in the central and southwestern corridors of the state, especially the Milwaukee metropolitan area (Milwaukee, Racine, and Kenosha counties), with another cluster of cases in and around Madison (Dane county).

We had two main objectives in subdividing the fathers' sample. First, we wanted to maximize our response rate at least among a representative subsample of fathers, if not the entire sample. We did not have sufficient resources to pursue in-person interviews with all the fathers who could not be reached by telephone, but we could focus our resources on approximately one-third of the sample. The sample of mothers and the sample of fathers previously had been structured into independent subsamples or "replicates" to help control achieved sample size. The mothers' sample was randomly divided into 30 replicates of approximately 100 cases each.[16] Fathers in sample replicates 1 through 10 were eligible for in-person tracing and interviews (N=677 at Time 1 and N=736 at Time 2).

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[14] This strategy was first deployed near the end of the field period at Time 1 when calling cards were sent to several hundred sample members whom we had not interviewed. At Time 2, calling cards were sent to all sample members.

[15] Technical Report 5 provides more information on these tracing procedures.

[16] The final number in a replicate was sometimes less than 100 if a case was determined to be ineligible prior to the field period. Fathers' replicates were always less than 100 because cases in which paternity was not established were excluded.

Second, we wanted to acquire information that would help us understand likely nonrespondents in the telephone-only (or so-called "partial effort") subsample in replicates 11 through 30. That is, we wanted to simulate a more traditional approach of employing more intensive tracing and interviewing techniques among a subsample of survey nonrespondents at the conclusion of a study *but do so simultaneously*. We accomplished this by trying to equalize the level of telephone effort that was used across cases that were eligible for in-person effort (replicate assignment notwithstanding). Briefly, we developed a set of decision rules for reassigning cases from telephone effort to in-person effort (e.g., number of call attempts, privacy managers that blocked calls, etc.). Coversheets for each case in the phone lab were reviewed regularly but blind with respect to replicate number. After determining whether a case should be reassigned to a personal interviewer, the replicate number was consulted. If the case met the rules for reassignment to in-person effort and had a replicate number of 1 through 10, it was assigned to a personal interviewer. If the case was in replicates 11 through 30, but otherwise eligible for in-person effort, it was set aside and received no additional telephone attempts. Thus, we sacrificed overall number of completed interviews—i.e., the additional interviews that might have been completed in replicates 11 through 30 if phone attempts had continued—in favor of a more focused allocation of resources that might inform our understanding of nonresponse.

Data Available to Examine Nonresponse

We are in a unique situation relative to national surveys such as the Panel Study of Income Dynamics or the National Longitudinal Survey in that we have data from administrative records for survey participants and nonparticipants. This will greatly aid in our identification of the survey participation model.

Specifically, data from the administrative records in CARES and KIDS provide measures of individuals' demographic characteristics as well as characteristics of the mother-father pair (age of youngest child, number of children, father by paternity or marriage, and complex family structures). These data also contain information on the amount and history of child support payments. We draw on unemployment insurance (UI) records to construct measures of employment and wages.[17]

Other measures are derived from the survey, the sample frame, or records from the field effort. These include the respondent status of the mother at Time 1 and Time 2 and whether this interview required in-person effort to complete, the father's replicate assignment (i.e., "full effort" vs. "partial effort"), and the number of call attempts or visits. Data on call attempts were coded from individual coversheets and represent the total number of calls (or visits) for a case. They include calls that resulted in

[17] Technical Report 3 provides a thorough discussion of administrative data sources.

a contact with the respondent (or informant) as well as those that did not, thus reflecting the level of effort (actual calls and retracing) required to reach a sample member.[18] While we have administrative data on education levels and race for resident mothers, the education of the nonresident father was not collected and information on the race of the father is missing for over one-third of the sample and thus is not included.

Construction of Weights for the SWWF

In this section we describe the method employed to construct weights for the resident and nonresident parent surveys. As detailed earlier in this technical report, the weights are appropriate for adjusting summary statistics to more accurately reflect the population moments; however, in the context of correcting for nonresponse bias, they are only appropriate if selection is on observables.

We construct two weights for each of the RP and NRP surveys: one for the first-wave cross section (T1), and one that can be employed for either the second-wave cross section (T2) or for the pooled T1 and T2 cross sections (Ever In). In each case we estimate the probability of survey participation via probit maximum likelihood, and then take the inverse of the fitted probabilities to construct the weight.[19]

NRP Survey Participation

The variables included in the NRP participation equation include a quadratic in the NRP's and RP's earnings at entry into W-2 as reported on the administrative UI earnings records, a quadratic in the NRP's age, a quadratic in the number of phone calls made to reach the NRP, the age of the youngest child in the RP/NRP pair, the number of children between the RP/NRP pair, the number of RPs associated with the NRP in the sample, the number of NRPs associated with the RP, the natural log of child support payments at entry into W-2, and indicator variables for whether the NRP was eligible for full interviewing effort (i.e., in-person interviews), whether the NRP is the paternity father, whether the RP paired with the NRP participated in the RP survey, and whether the RP paired with the NRP had a computer-assisted personal interview (CAPI). At this stage the number of phone calls made at T2 is missing and thus is excluded from the Ever In models. To be included in the sample we require complete data on NRP UI

[18] We currently have data on calls only for Time 1 of the fathers' survey. We have similar survey-based information for mothers, but it is generally less useful than administrative data for predicting survey participation (e.g., mothers in all survey replicates were eligible for in-person interviews).

[19] We also examined the linear probability model, the logit model, the skewed logit model, and the complementary log-log model without any significant difference in results.

earnings and NRP age.[20] In addition the NRP must be "in scope"; that is, between T1 and T2 over 200 NRPs had legal paternity established and thus are in scope for the T2 survey and not the T1 survey.[21]

In Table TR6.5 we record the probit estimates of the probability of survey participation by NRPs for T1 and Ever In. The results are quite similar across the two specifications. The probability of survey response increases as NRP earnings increase, but at a decreasing rate. In T1, the probability of response follows a similar pattern with respect to the number of phone calls made, suggesting that there are diminishing returns to excessive phone calls. Being in replicates 1–10, and thus eligible for full interviewing effort, has a strong positive effect on participation. Likewise, survey participation is substantially increased as the level of child support payments paid at entry into W-2 increases, and if the RP participates in the survey as well.

On the other hand, paternity fathers are significantly less likely to participate in the survey, particularly in T1. Survey participation is also deterred significantly by the number of children between the RP/NRP pair, by the age of the youngest child, and by the number of NRPs paired with the RP in the sample. In terms of goodness-of-fit, the models predict participation quite well, being correct about 73 percent of the time in T1 and about 95 percent of the time for the Ever In model.

RP Survey Participation

The variables included in the RP participation equation include a quadratic in the RP's and NRP's earnings at entry into W-2 as reported on the administrative unemployment insurance earnings records, a quadratic in the child support payments received at entry into W-2, a quadratic in the amount of arrearages in child support payments the NRP has with the state, the age of the youngest child in the RP/NRP pair, the number of children between the RP/NRP pair, the number of RPs associated with the NRP in the sample, the history of AFDC usage over the 24 months prior to entry into W-2, and indicator variables for whether the RP was an AFDC or W-2 case, whether the RP was in the lower tier of W-2, whether the RP was white or black (other race is excluded category), whether the RP's education was between 9 and 11 years, 12 years, or more than 12 years (less than 9 years is the excluded category), whether the RP resides in Milwaukee County or in a rural county (other urban county is the excluded category), whether the focal child has no legal father, and whether the focal child was born out of

[20] We are missing Social Security numbers, and thus UI earnings, for about 130 NRPs. In these cases we imputed the missing data with the median value. In addition, the age of the NRP is missing for 12 cases, so again we imputed this with the median age of NRPs.

[21] We conducted an extensive sensitivity analysis with respect to the model specification. For example, instead of the simple quadratic in UI and the log of child support payments, we used a five-part spline to allow finer nonlinearities in the response surface. This had little impact on our model fit and subsequent weights. Indeed, the fit actually worsened slightly and the variance of the weights increased slightly.

Table TR6.5
Probit Model of the Probability of Nonresident Parent (NRP) Survey Participation

Variable	Time 1	Ever In
NRP UI Wage ($1,000s)	0.0728	0.0659
	(0.0178)	(0.0171)
NRP UI Wage Squared	-0.0027	-0.0032
	(0.0011)	(0.0011)
RP UI Wage ($1,000s)	0.0252	-0.0056
	(0.0513)	(0.0488)
RP UI Wage Squared	0.0027	0.0019
	(0.0107)	(0.0107)
NRP Age	-0.0096	-0.0275
	(0.0232)	(0.0242)
NRP Age Squared	0.0001	0.0004
	(0.0003)	(0.0003)
Full (=1 if in replicates 1–10)	0.4371	0.5179
	(0.0640)	(0.0592)
Pfather (=1 if nonresident parent is paternity father)	-0.2475	-0.155
	(0.0865)	(0.0816)
Ncalls (# of calls made)	0.0258	
	(0.0086)	
Ncalls Squared	-0.0007	
	(0.0002)	
Nkids (# of kids for NRP/RP pair)	-0.1021	-0.0859
	(0.0377)	(0.0336)
Age of youngest child for NRP/RP	-0.0229	-0.0361
	(0.0092)	(0.0085)
Momt1r (=1 if RP responded in T1)	0.3624	0.3049
	(0.0924)	(0.0801)
Mcapi1 (=1 if RP's T1 CAPI)	-0.1247	-0.1673
	(0.0738)	(0.0668)
Nmomcase (# RPs paired with NRP)	-0.1643	-0.2239
	(0.2318)	(0.2129)
Lcsbase (log child support payments at entry into W-2)	0.1413	0.0926
	(0.0255)	(0.0245)
Dui (=1 if NRP is missing UI data)	0.0332	0.024
	(0.1348)	(0.1215)
Dag (=1 if NRP is missing age data)	-0.7367	-0.2514
	(0.5162)	(0.3786)
Constant	-1.1136	0.0709
	(0.4810)	(0.4711)
Log L	-1,128.88	-1,388.73
% Correct	72.60%	95.40%
N	1,936	2,130

Note: Standard deviations shown in parentheses.

wedlock. Because only those RPs residing in Milwaukee County were eligible for a CAPI, collinearity prevents us from including this variable along with the indicator for living in Milwaukee. At this stage the number of phone calls made is missing and thus is excluded from the analysis. To be included in the sample the RP must be "in scope"; that is, 2,879 were in scope in T1 but only 2,873 were in scope at T2.[22,23]

In Table TR6.6 we record the probit estimates of the probability of survey participation by RPs for T1 and Ever In. Unlike the results for the NRP model, there are fewer significant coefficients in the RP case, primarily because overall response is relatively high. The results are quite similar to the NRP model across the two specifications, however. The probability of survey response increases linearly in RP earnings, and increases at a decreasing rate with respect to child support receipts. In T1, the probability of response follows a similar increasing then decreasing pattern with respect to the NRP's arrears, but this effect is statistically zero for the Ever In model. In both periods survey participation decreases with the age of the youngest child, but increases among RPs who are white or black compared to Hispanic, Asian, or Native American. Educational differences among RPs has no impact on participation, but residing in Milwaukee relative to other urban counties in Wisconsin increases participation. In terms of goodness-of-fit, the models predict RP participation exceptionally well, being correct 99 percent of the time in each period. This rather inflated estimate is due in part because response rates are over 80 percent among RPs; however, even if we determine a "correct" prediction to be above 0.8 rather than the standard 0.5, the percentage correct is still about 70 percent.

Summary of RP and NRP Weights

In Table TR6.7 we provide simple descriptive statistics for the inverse probability weights for each of the RP and NRP T1 and Ever In models for respondents only. The weights are normalized to sum to the number of respondents in each survey period and thus the mean is by construction equal to 1. As expected, the variance of the NRP weights is substantially higher than the RP weights given the much more severe degree of nonresponse among NRPs. Consequently, the range of weights among RPs is substantially lower and thus we expect little inflation of the variance for weighted outcomes. There is, however, likely to be some variance inflation for NRPs, but given the low response rate the range of about 7 to 1 in T1 and about 4 to 1 in T2 is not excessive.

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[22] We are missing Social Security numbers, and thus UI earnings, for about 130 NRPs. In these cases we imputed the missing data with the median value.

[23] As with the NRP model we conducted an extensive sensitivity analysis with respect to the model specification. For example, instead of the simple quadratic in UI and child support receipts, we used a 5-part spline to allow finer nonlinearities in the response surface. This has little impact on our model fit and subsequent weights.

Table TR6.6
Probit Model of the Probability of RP Survey Participation

Variable	Time 1	Ever In
RP UI Wage ($1,000s)	0.0406	0.0331
	(0.0159)	(0.0253)
RP UI Wage Squared	-0.0004	0.0008
	(0.0008)	(0.0016)
NRP UI Wage ($1,000s)	-0.0088	-0.0074
	(0.0107)	(0.0155)
NRP UI Wage Squared	0.0005	0.0005
	(0.0003)	(0.0005)
NRP UI (=1 if NRP is missing UI data)	-0.1423	-0.2373
	(0.1134)	(0.1409)
Tcsbase (child support receipts at entry into W-2)	0.0865	0.0741
	(0.0587)	(0.0721)
Tcsbase Squared	-0.0173	-0.0131
	(0.0090)	(0.0099)
Arrears	0.0181	0.0099
	(0.0076)	(0.0141)
Arrears Squared	-0.0004	0.0002
	(0.0001)	(0.0004)
Pfather	-0.0237	-0.0006
	(0.0862)	(0.1063)
Nkids (# of kids for NRP/RP pair)	-0.0381	-0.0804
	(0.0250)	(0.0289)
Age of Youngest Child for NRP/RP	-0.0165	-0.0174
	(0.0074)	(0.0089)
Nfathers	0.0331	0.139
	(0.0535)	(0.0733)
AFDC (=1 if old AFDC case)	0.0317	-0.0367
	(0.0721)	(0.0927)
Lower (=1 if lower tier)	0.002	-0.0679
	(0.0614)	(0.0791)
Mwhite (=1 if RP is white)	0.5014	0.744
	(0.0969)	(0.1150)
Mblack (=1 if RP is black)	0.3518	0.6392
	(0.0822)	(0.0941)
Med911 (=1 if RP educ is 9–11)	0.2243	0.0615
	(0.1445)	(0.1699)
Med12 (=1 if RP educ is = 12)	0.0084	0.0136
	(0.0635)	(0.0809)
Med13 (=1 if RP educ is > 12)	0.1017	-0.0057
	(0.1025)	(0.1272)
Milw (=1 if in Milwaukee County)	0.2003	0.2844
	(0.0833)	(0.1009)
Rural (=1 if in rural county)	0.1389	0.0426
	-0.1069	-0.1300
Afdchx (AFDC usage prior to entry into W-2)	0.0055	0.0037
	(0.0042)	(0.0054)

Table TR6.6, continued

Variable	Time 1	Ever In
Kidnodad (=1 if no legal father)	-0.0717	-0.0504
	(0.0704)	(0.0938)
Nmarital (=1 if child out of wedlock)	-0.0325	-0.0602
	(0.0842)	(0.1081)
Constant	0.1842	0.6833
	(0.2127)	(0.2584)
Log L	-1,299.13	-758.99
% Correct	99.90%	99.90%
N	2,879	2,873

Note: Standard deviations shown in parentheses.

Table TR6.7
Summary Statistics on Normalized Survey Weights for Respondents

	Mean	Standard Deviation	Minimum	Maximum
NRP Time 1	1.0	0.4929	0.4117	3.3725
NRP Ever In	1.0	0.3071	0.5750	2.6165
RP Time 1	1.0	0.0998	0.8210	2.1558
RP Ever In	1.0	0.0881	0.9147	1.7890

The survey data also are weighted to adjust for factors that affected sample selection. The sample was stratified by case type (AFDC, new W-2) and tier of initial assignment (upper, lower). Rates of assignment to experimental or control status also varied in ways that affect the probability of selection into the sample over the period during which the research population developed (September 1, 1997, to July 8, 1998). Sampling weights were developed to adjust for these factors, and overall weights for analysis of T1 or T2 were constructed by multiplying the nonresponse weight by the sampling weight. The weights were normalized to the total number of in-scope respondents in each survey.[24]

Weighted and Unweighted Descriptive Statistics

Tables TR6.8 and TR6.9 present unweighted descriptive statistics for resident mothers and nonresident fathers, respectively. The tables include a range of characteristics that can be measured with administrative data available for all survey sample members and show distributions for the entire survey samples at Time 1 and Time 2 as well as for respondents and nonrespondents separately.

[24] See Technical Report 4 for a discussion of the sampling weights.

Table TR6.8
Characteristics of Mothers in the Time 1 and Time 2 Survey Samples, by Respondent Status (Unweighted)

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Total Cases	2,884		2,362		517		2,873		2,354		519	
Age of Resident Parent												
16–17	1	0.0	1	0.0	0	0.0	1	0.0	0	0.0	1	0.2
18–25	1,426	49.4	1,164	49.3	261	50.5	1,423	49.5	1,168	49.6	255	49.1
26–30	597	20.7	505	21.4	92	17.8	596	20.7	485	20.6	111	21.4
31 or older	860	29.8	692	29.3	164	31.7	853	29.7	701	29.8	152	29.3
Race of Resident Parent												
White	834	28.9	708	30.0	121	23.4	827	28.8	703	29.9	124	23.9
African American	1,682	58.3	1,396	59.1	286	55.3	1,678	58.4	1,404	59.6	274	52.8
Hispanic	190	6.6	133	5.6	57	11.0	190	6.6	129	5.5	61	11.8
Native American	70	2.4	49	2.1	21	4.1	70	2.4	44	1.9	26	5.0
Asian	27	0.9	10	0.4	17	3.3	27	0.9	10	0.4	17	3.3
Other	1	0.0	1	0.0	0	0.0	1	0.0	0	0.0	1	0.2
Unknown	80	2.8	65	2.8	15	2.9	80	2.8	64	2.7	16	3.1
Education of Resident Parent												
Less than high school	1,449	50.2	1,167	49.4	281	54.4	1,447	50.4	1,157	49.2	290	55.9
High school	1,131	39.2	938	39.7	192	37.1	1,126	39.2	940	39.9	186	35.8
More than high school	304	10.5	257	10.9	44	8.5	300	10.4	257	10.9	43	8.3
Language of Resident Parent												
English	2,826	98.0	2,343	99.2	478	92.5	2,815	98.0	2,334	99.2	481	92.7
Non-English	58	2.0	19	0.8	39	7.5	58	2.0	20	0.8	38	7.3
Location												
Milwaukee County	2,030	70.4	1,676	71.0	353	68.3	2,026	70.5	1,681	71.4	345	66.5
Other urban counties	509	17.6	398	16.9	108	20.9	503	17.5	404	17.2	99	19.1
Rural counties and tribes	345	12.0	288	12.2	56	10.8	344	12.0	269	11.4	75	14.5

Table TR6.8, continued

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Employment History[a]												
No UI-covered employment	523	18.1	409	17.3	114	22.1	522	18.2	387	16.4	135	26.0
1–4 quarters	1,111	38.5	900	38.1	210	40.6	1,108	38.6	903	38.4	205	39.5
5–7 quarters	807	28.0	671	28.4	134	25.9	804	28.0	688	29.2	116	22.4
All 8 quarters	443	15.4	382	16.2	59	11.4	439	15.3	376	16.0	63	12.1
Earnings History[a]												
No UI earnings	523	18.1	409	17.3	114	22.1	522	18.2	387	16.4	135	26.0
$1–$5,000	1,863	64.6	1,519	64.3	341	66.0	1,857	64.6	1,535	65.2	322	62.0
$5,001–$15,000	461	16.0	400	16.9	59	11.4	458	15.9	397	16.9	61	11.8
$15,001 or more	37	1.3	34	1.4	3	0.6	36	1.3	35	1.5	1	0.2
AFDC Receipt[a]												
None	616	21.4	488	20.7	126	24.4	612	21.3	490	20.8	122	23.5
1–18 months	1,012	35.1	831	35.2	180	34.8	1,009	35.1	829	35.2	180	34.7
19–24 months	1,256	43.6	1,043	44.2	211	40.8	1,252	43.6	1,035	44.0	217	41.8
Number of Children												
None	35	1.2	29	1.2	6	1.2	35	1.2	28	1.2	7	1.3
One	1,036	35.9	843	35.7	190	36.8	1,030	35.9	844	35.9	186	35.8
Two	823	28.5	678	28.7	143	27.7	819	28.5	687	29.2	132	25.4
Three or more	990	34.3	812	34.4	178	34.4	989	34.4	795	33.8	194	37.4
Age of Youngest Child												
Unborn	311	10.8	253	10.7	58	11.2	310	10.8	249	10.6	61	11.8
0–2	1,395	48.4	1,156	48.9	237	45.8	1,389	48.3	1,131	48.0	258	49.7
3–5	505	17.5	410	17.4	95	18.4	504	17.5	418	17.8	86	16.6
6–12	556	19.3	451	19.1	102	19.7	553	19.2	457	19.4	96	18.5
13–18	117	4.1	92	3.9	25	4.8	117	4.1	99	4.2	18	3.5

Table TR6.8, continued

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Focal Child's Parentage												
Legal father, unknown how	5	0.2	2	0.1	3	0.6	5	0.2	5	0.2	0	0.0
Nonmarital child	2,515	87.2	2,060	87.2	451	87.2	2,505	87.2	2,053	87.2	452	87.1
Marital child	364	12.6	300	12.7	63	12.2	363	12.6	296	12.6	67	12.9
Number Legal Fathers												
No legal fathers	892	30.9	699	29.6	191	36.9	887	30.9	681	28.9	206	39.7
One	1,469	50.9	1,214	51.4	252	48.7	1,464	51.0	1,223	52.0	241	46.4
Two or more	523	18.1	449	19.0	74	14.3	522	18.2	450	19.1	72	13.9
Child Support Order[b]												
No child support order	1,329	46.1	1,039	44.0	288	55.7	1,324	46.1	1,022	43.4	302	58.2
Child support order	1,555	53.9	1,323	56.0	229	44.3	1,549	53.9	1,332	56.6	217	41.8
Child Support Paid by All Nonresident Parents[a]												
No child support paid	1,928	66.9	1,543	65.3	382	73.9	1,921	66.9	1,534	65.2	387	74.6
$1–$999	450	15.6	385	16.3	63	12.2	446	15.5	384	16.3	62	11.9
$1,000 or more	506	17.5	434	18.4	72	13.9	506	17.6	436	18.5	70	13.5
Arrearages Owed by All Nonresident Parents												
No arrearages owed	1,267	43.9	991	42.0	274	53.0	1,262	43.9	978	41.5	284	54.7
$1–$500	71	2.5	59	2.5	12	2.3	71	2.5	57	2.4	14	2.7
$501–$2,000	346	12.0	294	12.4	51	9.9	345	12.0	289	12.3	56	10.8
$2,001 or more	1,200	41.6	1,018	43.1	180	34.8	1,195	41.6	1,030	43.8	165	31.8
Research Group												
Control	1,438	49.9	1,163	49.2	273	52.8	1,434	49.9	1,179	50.1	255	49.1
Experimental	1,446	50.1	1,199	50.8	244	47.2	1,439	50.1	1,175	49.9	264	50.9

Table TR6.8, continued

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Case Type												
AFDC	1,485	51.5	1,224	51.8	258	49.9	1,478	51.4	1,216	51.7	262	50.5
W-2	1,399	48.5	1,138	48.2	259	50.1	1,395	48.6	1,138	48.3	257	49.5
Initial W-2 Assignment												
W-2 Transition	264	9.2	210	8.9	52	10.1	262	9.1	201	8.5	61	11.8
Community Service Job	1,277	44.3	1,043	44.2	234	45.3	1,275	44.4	1,052	44.7	223	43.0
Caretaker of Newborn	307	10.6	251	10.6	54	10.4	304	10.6	244	10.4	60	11.6
Upper Tier	1,036	35.9	858	36.3	177	34.2	1,032	35.9	857	36.4	175	33.7
Quarter of Entry												
4th quarter of 1997	1,321	45.8	1,071	45.3	247	47.8	1,316	45.8	1,071	45.5	245	47.2
1st quarter of 1998	946	32.8	795	33.7	150	29.0	942	32.8	783	33.3	159	30.6
2nd quarter of 1998	617	21.4	496	21.0	120	23.2	615	21.4	500	21.2	115	22.2

Notes: Characteristics are measured at entry into W-2 unless otherwise noted. Nonrespondents exclude five cases that were out of scope and not fielded because either the mother (two cases) or focal child (three cases) died before December 31, 1998.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Table TR6.9
Characteristics of Fathers in Time 1 and Time 2 Survey Samples, by Respondent Status (Unweighted)

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Total Cases	1,936		643		1,293		2,130		696		1,434	
Age of Nonresident Parent												
16–17	14	0.7	5	0.8	9	0.7	22	1.0	5	0.7	17	1.2
18–25	621	32.1	205	31.9	416	32.2	717	33.7	222	31.9	495	34.5
26–30	489	25.3	160	24.9	329	25.4	519	24.4	154	22.1	365	25.5
31 or older	802	41.4	272	42.3	530	41.0	859	40.3	313	45.0	546	38.1
Unknown	10	0.5	1	0.2	9	0.7	13	0.6	2	0.3	11	0.8
Race of Nonresident Parent												
White	326	16.8	154	24.0	172	13.3	361	16.9	170	24.4	191	13.3
African American	774	40.0	226	35.1	548	42.4	882	41.4	246	35.3	636	44.4
Hispanic	95	4.9	21	3.3	74	5.7	108	5.1	22	3.2	86	6.0
Native American	32	1.7	11	1.7	21	1.6	35	1.6	10	1.4	25	1.7
Asian	7	0.4	0	0.0	7	0.5	7	0.3	0	0.0	7	0.5
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	702	36.3	231	35.9	471	36.4	737	34.6	248	35.6	489	34.1
Employment History[a]												
No UI-covered employment	522	27.0	99	15.4	423	32.7	589	27.7	129	18.5	460	32.1
1–4 quarters	459	23.7	130	20.2	329	25.4	505	23.7	157	22.6	348	24.3
5–7 quarters	418	21.6	170	26.4	248	19.2	452	21.2	174	25.0	278	19.4
All 8 quarters	454	23.5	223	34.7	231	17.9	490	23.0	217	31.2	273	19.0
Unknown	83	4.3	21	3.3	62	4.8	94	4.4	19	2.7	75	5.2
Earnings History[a]												
No UI earnings	522	27.0	99	15.4	423	32.7	589	27.7	129	18.5	460	32.1
$1–$5,000	718	37.1	229	35.6	489	37.8	789	37.0	255	36.6	534	37.2
$5,001–$15,000	405	20.9	190	29.5	215	16.6	441	20.7	199	28.6	242	16.9
$15,001 or more	208	10.7	104	16.2	104	8.0	217	10.2	94	13.5	123	8.6
Unknown	83	4.3	21	3.3	62	4.8	94	4.4	19	2.7	75	5.2

Table TR6.9, continued

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Parentage of Focal Child												
Legal father, unknown how	4	0.2	2	0.3	2	0.2	5	0.2	2	0.3	3	0.2
Paternity	1,602	82.7	508	79.0	1,094	84.6	1,772	83.2	555	79.7	1,217	84.9
Marriage	330	17.0	133	20.7	197	15.2	353	16.6	139	20.0	214	14.9
Number of Children with Resident Parent												
None	15	0.8	10	1.6	5	0.4	23	1.1	14	2.0	9	0.6
One	1,247	64.4	408	63.5	839	64.9	1,387	65.1	437	62.8	950	66.2
Two	448	23.1	162	25.2	286	22.1	476	22.3	169	24.3	307	21.4
Three or more	226	11.7	63	9.8	163	12.6	244	11.5	76	10.9	168	11.7
Age Youngest Child with Resident Parent												
Unborn	33	1.7	13	2.0	20	1.5	44	2.1	19	2.7	25	1.7
0–2	619	32.0	225	35.0	394	30.5	747	35.1	244	35.1	503	35.1
3–5	509	26.3	158	24.6	351	27.1	524	24.6	175	25.1	349	24.3
6–12	652	33.7	208	32.3	444	34.3	685	32.2	213	30.6	472	32.9
13–18	123	6.4	39	6.1	84	6.5	130	6.1	45	6.5	85	5.9
Child Support Order with Resident Parent[b]												
No child support order	653	33.7	217	33.7	436	33.7	817	38.4	254	36.5	563	39.3
Child support order	1,283	66.3	426	66.3	857	66.3	1,313	61.6	442	63.5	871	60.7
Child Support Payments to Resident Parent[a]												
No child support payments	1,231	63.6	327	50.9	904	69.9	1,412	66.3	395	56.8	1,017	70.9
$1–$999 child support paid	347	17.9	146	22.7	201	15.5	354	16.6	136	19.5	218	15.2
$1,000 or more child support paid	358	18.5	170	26.4	188	14.5	364	17.1	165	23.7	199	13.9
Arrearages Owed to State												
No arrearages	580	30.0	221	34.4	359	27.8	742	34.8	267	38.4	475	33.1
$1–$500 owed	74	3.8	28	4.4	46	3.6	76	3.6	28	4.0	48	3.3
$501–$2,000	360	18.6	123	19.1	237	18.3	373	17.5	106	15.2	267	18.6
$2,001 or more	922	47.6	271	42.1	651	50.3	939	44.1	295	42.4	644	44.9

Table TR6.9, continued

	Time 1						Time 2					
	Survey Sample		Respondents		NRs		Survey Sample		Respondents		NRs	
	N	%	N	%	N	%	N	%	N	%	N	%
Survey Replicate												
Full effort replicate	677	35.0	354	55.1	388	30.0	736	34.6	340	48.9	396	27.6
Partial effort replicate	1,259	65.0	289	44.9	905	70.0	1,394	65.4	356	51.1	1,038	72.4

Notes: Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

The patterns of results are similar for the two time periods and for mothers and fathers. They mimic the differences in response rates discussed earlier and they tend to be more marked among the fathers' samples. For example, at both Time 1 and Time 2, survey participants tend to overrepresent fathers in the sample who are white and slightly underrepresent fathers who are black or Hispanic. Survey respondents also are more likely to be employed at entry into W-2, to report higher wages, and to have more stable patterns of employment involving fewer quarters without paid employment. More sizeable differences occur when we examine the pattern of child support payments. Although only slightly more than one-third of sample members paid any formal child support to the resident mother in the 12 months prior to October 1, 1997, one-half of survey respondents at Time 1 and 43 percent of respondents at Time 2 had paid child support. Among those who paid formal child support, the magnitude of the differences in the amount of child support paid is somewhat smaller, but survey participants consistently pay larger amounts on average.

Survey respondents differ little, if at all, from the survey sample as a whole on other variables—age, type of parentage (paternity, marriage)—and characteristics of the couple or the family show only negligible differences between the two groups.

Tables TR6.10 and TR6.11 show descriptive statistics on a small set of characteristics for which we have comparable measures in administrative and survey data. We compare unweighted and weighted measures from the survey with means computed using administrative data on the entire survey sample as well as survey respondents only. This exercise allows us to assess how well the weights adjust for nonresponse.

Table TR6.10 summarizes estimates for mothers on W-2/AFDC receipts, Food Stamp receipts, and earnings. Data on earnings are from UI records and will not match survey reports if the latter include extensive employment in sectors not covered by UI. Figures are shown for 1998 (the reference period for the Time 1 survey) and 1999 (the reference period for Time 2). Statistics are computed from administrative data for the sample of all individuals eligible for interview at Time 1 and Time 2 as well as for the subgroup of sample members who completed interviews.[25] These estimates are weighted to adjust for differential rates of assignment to control and experimental groups, stratification of the sample by case type (AFDC cases that transitioned to W-2 and new entrants to W-2), and stratification by initial tier placement (upper and lower tiers). Survey statistics are reported as unweighted, weighted to adjust for sampling (i.e., differential rates of assignment, stratification by case type and by tier), and weighted to adjust for sampling as well as nonresponse.

[25] Statistics computed for respondents take into account unit and item nonresponse so the administrative and survey estimates pertain to the same groups of individuals.

Table TR6.10
Selected Outcomes for Mothers, as Measured in Administrative and Survey Data

	In 1998					In 1999				
	Administrative Data		Survey Data			Administrative Data		Survey Data		
Type of Weighting	Survey Sample (a)	T1 Rs (a)	T1 Rs (b)	T1 Rs (a)	T1 Rs (c)	Survey Sample (a)	T2 Rs (a)	T2 Rs (b)	T2 Rs (a)	T2 Rs (c)
AFDC/W-2 Receipts	$3,137	$3,191	$2,292	$2,582	$2,604	$1,383	$1,453	$1,426	$1,620	$1,632
	(2,579)	(2,613)	(2,711)	(2,884)	(2,894)	(2,100)	(2,157)	(2,414)	(2,590)	(2,608)
Food Stamp Receipts	1,963	2,011	1,611	1,744	1,747	1,836	1,922	1,533	1,665	1,666
	(1,495)	(1,504)	(1,583)	(1,665)	(1,665)	(1,670)	(1,703)	(1,706)	(1,775)	(1,776)
Earnings	4,528	4,703	5,493	5,097	5,007	6,049	6,429	7,671	7,024	6,951
	(5,260)	(5,281)	(6,217)	(6,155)	(6,114)	(6,575)	(6,670)	(7,829)	(7,557)	(7,525)

Notes: (a) Data use sampling weights to adjust for differential assignment to control-experimental, stratification of sample by case type, and initial tier placement. (b) Data are not weighted. (c) Data use weights to adjust for sampling (see a) and nonresponse. Standard deviations are shown in parentheses.

Table TR6.11
Selected Outcomes for Fathers, as Measured in Administrative and Survey Data

	In 1998					In 1999				
	Administrative Data		Survey Data			Administrative Data		Survey Data		
Type of Weighting:	Survey Sample (a)	T1 Rs (a)	T1 Rs (b)	T1 Rs (a)	T1 Rs (c)	Survey Sample (a)	T2 Rs (a)	T2 Rs (b)	T2 Rs (a)	T2 Rs (c)
Child Support Payments	$859	$1,305	$2,093	$2,117	$1,811	$995	$1,516	$2,126	$2,108	$1,980
	(1,426)	(1,661)	(2,497)	(2,465)	(2,362)	(1,586)	(1,757)	(2,238)	(2,177)	(2,121)
Earnings	7,432	10,220	14,905	13,768	11,545	7,659	10,059	16,158	14,975	13,983
	(10,663)	(10,883)	(14,993)	(13,106)	(12,783)	(11,292)	(11,482)	(17,865)	(18,786)	(17,658)

Notes: (a) Data use sampling weights to adjust for differential assignment to control-experimental, stratification of sample by case type, and initial tier placement. (b) Data are not weighted. (c) Data use weights to adjust for sampling (see a) and nonresponse. Standard deviations are shown in parentheses.

The combined sampling and nonresponse weights move the survey estimates in the correct direction and close the initial gap between administrative and unweighted survey estimates by about one-third. Mothers tend to underreport receipt of W-2/AFDC and Food Stamps and overreport earnings. The weights adjust survey reports of W-2/AFDC and Food Stamps upwards, decreasing the gap by almost 30 percent. Weights adjust the survey estimate of earnings in 1998 downward such that the weighted survey mean is within $500 of the estimate for the entire sample based on UI data. The combined sampling and nonresponse weights have a similar impact at Time 2 by reducing the weighted estimates of earnings and Food Stamp receipts. However, mothers overreported earnings by a greater margin at Time 2, so the weighted estimate, while substantially lower, is still almost $2,000 greater than that based on UI data for the entire sample.

There is very little over- or underreporting of W-2 receipts at Time 2. In fact, the unweighted survey estimate is the best approximation of W-2 receipts for all mothers in the survey sample. Survey estimates adjusted using the sampling weights or the combined sampling and nonresponse weight move in the wrong direction and increase the initially small gap of about $40 to almost $250.

Table TR6.11 reports a similar exercise for fathers and shows means computed for earnings and child support payments. Again, UI records are used to compute earnings from administrative data and will not include income earned in sectors not covered by the UI system. Estimates using the combined sampling and nonresponse weight consistently move in the direction of the means reported for the overall sample. Survey estimates of child support payments in 1998 decline from an unweighted figure of about $2,000 to $1,800 while estimates of earnings decrease from almost $15,000 to around $11,500, thus reducing the initial gap between administrative and survey estimate by 20 to 40 percent. A similar pattern occurs in the results for 1999, though the weights tend to have a smaller impact. Compared with the results shown in Table TR6.10 for mothers, the nonresponse component of the weight has a greater effect on the final estimate, and the sampling weight alone sometimes has almost no impact on the survey estimate (e.g., child support payments).

Conclusion

The low response rates among fathers in the Survey of Wisconsin Works Families and the tendency for mothers with fewer economic resources to be underrepresented present significant challenges for researchers. Analysis of survey respondents alone, uncorrected for nonresponse, will likely yield biased estimates and inappropriate conclusions. Although survey participants do not differ noticeably from nonrespondents on several characteristics, such as age and family structure, they exhibit more stable patterns of employment, report higher wages, are more likely to pay (receive) formal child

support, and tend to pay (receive) higher amounts of support. These characteristics are likely to be correlated with several other outcomes and behaviors examined in the *W-2 Child Support Demonstration Evaluation Final Report* but not analyzed here. For example, father contact with children, the quality of or conflict in family relationships, and aspects of child well-being may be directly or indirectly related to these or other factors that affected our ability to locate and interview parents in the survey sample.

We have developed weights that adjust for nonresponse bias by estimating models of survey participation as a function of administrative data. Descriptive analyses show that the weights tend to improve estimates among survey respondents and better approximate the distribution in the survey sample, even though differences remain on some factors.

A wide range of outcomes or processes can be examined with the Survey of Wisconsin Works Families. The approach to nonresponse error discussed in this report was taken in an effort to develop a procedure that could be used easily and comparably across several different analyses—that is, something that may function as a "universal weight." When possible, analysts should evaluate the nonresponse error as it affects their research question and analysis plan. Ultimately, a "model-based" approach, tailored for a particular analysis, may provide a better correction for nonresponse error even though it cannot be easily adapted for use in other studies.

Appendix Table TR6.1
Mothers' Time 1 and Time 2 Response Rates, by Milwaukee/Non-Milwaukee Residence at Entry into W-2

	Time 1						Time 2					
	In Milwaukee County			Outside Milwaukee County			In Milwaukee County			Outside Milwaukee County		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	2,029	1,676	82.6%	850	686	80.7%	2,026	1,681	83.0%	847	673	79.5%
Age of Resident Parent												
16–17	1	1	100.0	0	0	0.0	1	0	0.0	0	0	0.0
18–25	1,003	825	82.3	422	339	80.3	1,003	835	83.3	420	333	79.3
26–30	422	356	84.4	175	149	85.1	421	344	81.7	175	141	80.6
31 or older	603	494	81.9	253	198	78.3	601	502	83.5	252	199	79.0
Race of Resident Parent												
White	243	211	86.8	586	497	84.8	243	218	89.7	584	485	83.0
African American	1,535	1,282	83.5	147	114	77.6	1,532	1,286	83.9	146	118	80.8
Hispanic	156	108	69.2	34	25	73.5	156	104	66.7	34	25	73.5
Native American	21	17	81.0	49	32	65.3	21	16	76.2	49	28	57.1
Asian	8	4	50.0	19	6	31.6	8	4	50.0	19	6	31.6
Other	1	1	100.0	0	0	0.0	1	0	0.0	0	0	0.0
Unknown	65	53	81.5	15	12	80.0	65	53	81.5	15	11	73.3
Education of Resident Parent												
Less than high school	1,121	922	82.2	327	245	74.9	1,121	908	81.0	326	249	76.4
High school	731	603	82.5	399	335	84.0	729	622	85.3	397	318	80.1
More than high school	177	151	85.3	124	106	85.5	176	151	85.8	124	106	85.5
Language of Resident Parent												
English	1,982	1,659	83.7	839	684	81.5	1,979	1,662	84.0	836	672	80.4
Non-English	47	17	36.2	11	2	18.2	47	19	40.4	11	1	9.1
Employment History[a]												
No UI covered employment	382	305	79.8	141	104	73.8	381	291	76.4	141	96	68.1
1–4 quarters	816	665	81.5	294	235	79.9	816	672	82.4	292	231	79.1
5–7 quarters	542	456	84.1	263	215	81.7	541	469	86.7	263	219	83.3
All 8 quarters	289	250	86.5	152	132	86.8	288	249	86.5	151	127	84.1

Appendix Table TR6.1, continued

	Time 1						Time 2					
	In Milwaukee County			Outside Milwaukee County			In Milwaukee County			Outside Milwaukee County		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Earnings History[a]												
No UI earnings	382	305	79.8	141	104	73.8	381	291	76.4	141	96	68.1
$1–$5,000	1,315	1,077	81.9	545	442	81.1	1,314	1,099	83.6	543	436	80.3
$5,001–$15,000	306	270	88.2	153	130	85.0	306	267	87.3	152	130	85.5
$15,001 or more	26	24	92.3	11	10	90.9	25	24	96.0	11	11	100.0
AFDC Receipt[a]												
None	312	246	78.8	302	242	80.1	311	245	78.8	301	245	81.4
1–18 months	657	543	82.6	354	288	81.4	657	550	83.7	352	179	50.9
19–24 months	1,060	887	83.7	194	156	80.4	1,058	886	83.7	194	149	76.8
Number of Children												
None	14	12	85.7	21	17	81.0	14	11	78.6	21	17	81.0
One	688	561	81.5	345	282	81.7	687	570	83.0	343	274	79.9
Two	575	473	82.3	246	205	83.3	574	480	83.6	245	207	84.5
Three or more	752	630	83.8	238	182	76.5	751	620	82.6	238	175	73.5
Age of Youngest Child												
Unborn	196	162	82.7	115	91	79.1	195	161	82.6	115	88	76.5
0–2	934	782	83.7	459	374	81.5	933	769	82.4	456	362	79.4
3–5	397	319	80.4	108	91	84.3	396	332	83.8	108	86	79.6
6–12	412	341	82.8	141	110	78.0	412	343	83.3	141	114	80.9
13–18	90	72	80.0	27	20	74.1	90	76	84.4	27	23	85.2
Focal Child's Parentage												
Legal father, unknown how	3	2	66.7	2	0	0.0	3	3	100.0	2	2	100.0
Nonmarital child	1,873	1,543	82.4	638	517	81.0	1,870	1,550	82.9	635	503	79.2
Marital child	153	131	85.6	210	169	80.5	153	128	83.7	210	168	80.0
Number Legal Fathers												
No legal fathers	614	486	79.2	276	213	77.2	613	476	77.7	274	205	74.8
One	1,026	850	82.8	440	364	82.7	1,025	861	84.0	439	362	82.5
Two or more	389	340	87.4	134	109	81.3	388	344	88.7	134	106	79.1

Appendix Table TR6.1, continued

	Time 1						Time 2					
	In Milwaukee County			Outside Milwaukee County			In Milwaukee County			Outside Milwaukee County		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Child Support Order[b]												
No child support order	873	693	79.4	454	346	76.2	872	689	79.0	452	333	73.7
Child support order	1,156	983	85.0	396	340	85.9	1,154	992	86.0	395	340	86.1
Child Support Paid by All NRPs[a]												
No child support paid	1,425	1,157	81.2	500	386	77.2	1,423	1,161	81.6	498	373	74.9
$1–$999	302	264	87.4	146	121	82.9	301	260	86.4	145	124	85.5
$1,000 or more	302	255	84.4	204	179	87.7	302	260	86.1	204	176	86.3
Arrearages Owed by All NRPs												
No arrearages owed	783	618	78.9	482	373	77.4	782	615	78.6	480	363	75.6
$1–$500	41	34	82.9	30	25	83.3	41	33	80.5	30	24	80.0
$501–$2,000	273	233	85.3	72	61	84.7	273	231	84.6	72	58	80.6
$2,001 or more	932	791	84.9	266	227	85.3	930	802	86.2	265	228	86.0
Research Group												
Control	997	808	81.0	439	355	80.9	997	830	83.2	437	349	79.9
Experimental	1,032	868	84.1	411	331	80.5	1,029	851	82.7	410	324	79.0
Case Type												
AFDC	1,205	1,000	83.0	277	224	80.9	1,203	996	82.8	275	220	80.0
W-2	824	676	82.0	573	462	80.6	823	685	83.2	572	453	79.2
Initial W-2 Assignment												
W-2 Transition	119	100	84.0	143	110	76.9	119	101	84.9	143	100	69.9
Community Service Job	1,131	930	82.2	146	113	77.4	1,130	40	3.5	145	112	77.2
Caretaker of Newborn	148	120	81.1	157	131	83.4	147	118	80.3	157	126	80.3
Upper Tier	631	526	83.4	404	332	82.2	630	522	82.9	402	335	83.3
Quarter of Entry												
4th quarter of 1997	871	710	81.5	447	361	80.8	871	718	82.4	445	353	79.3
1st quarter of 1998	795	665	83.6	150	130	86.7	793	659	83.1	149	124	83.2
2nd quarter of 1998	363	301	82.9	253	195	77.1	362	304	84.0	253	196	77.5

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Appendix Table TR6.2
Mothers' Time 1 and Time 2 Response Rates among Mothers Living in Milwaukee at Entry into W-2, by Case Type

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	1,205	1,000	83.0%	824	676	82.0%	1,203	996	82.8%	823	685	83.2%
Age of Resident Parent												
16–17	0	0	0.0	1	1	100.0	0	0	0.0	1	0	0.0
18–25	553	460	83.2	450	365	81.1	553	464	83.9	450	371	82.4
26–30	269	226	84.0	153	130	85.0	268	216	80.6	153	128	83.7
31 or older	383	314	82.0	220	180	81.8	382	316	82.7	219	186	84.9
Race of Resident Parent												
White	154	131	85.1	89	80	89.9	154	136	88.3	89	82	92.1
African American	899	759	84.4	636	523	82.2	897	753	83.9	635	533	83.9
Hispanic	100	71	71.0	56	37	66.1	100	65	65.0	56	39	69.6
Native American	14	10	71.4	7	7	100.0	14	10	71.4	7	6	85.7
Asian	5	3	60.0	3	1	33.3	5	3	60.0	3	1	33.3
Other	1	1	100.0	0	0	0.0	1	0	0.0	0	0	0.0
Unknown	32	25	78.1	33	28	84.8	32	29	90.6	33	24	72.7
Education of Resident Parent												
Less than high school	677	567	83.8	444	355	80.0	677	547	80.8	444	361	81.3
High school	428	347	81.1	303	256	84.5	426	366	85.9	303	256	84.5
More than high school	100	86	86.0	77	65	84.4	100	83	83.0	76	68	89.5
Language of Resident Parent												
English	1,174	987	84.1	808	672	83.2	1,172	984	84.0	807	678	84.0
Non-English	31	13	41.9	16	4	25.0	31	12	38.7	16	7	43.8
Employment History[a]												
No UI-covered employment	254	211	83.1	128	94	73.4	253	198	78.3	128	93	72.7
1–4 quarters	565	468	82.8	251	197	78.5	565	470	83.2	251	202	80.5
5–7 quarters	284	236	83.1	258	220	85.3	283	240	84.8	258	229	88.8
All 8 quarters	102	85	83.3	187	165	88.2	102	88	86.3	186	161	86.6

Appendix Table TR6.2, continued

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Earnings History[a]												
No UI earnings	254	211	83.1	128	94	73.4	253	198	78.3	128	93	72.7
$1–$5,000	861	711	82.6	454	366	80.6	860	718	83.5	454	381	83.9
$5,001–$15,000	89	77	86.5	217	193	88.9	89	79	88.8	217	188	86.6
$15,001 or more	1	1	100.0	25	23	92.0	1	1	100.0	24	23	95.8
AFDC Receipt[a]												
None	0	0	0.0	312	246	78.8	0	0	0.0	311	245	78.8
1–18 months	324	262	80.9	333	181	54.4	324	261	80.6	333	289	86.8
19–24 months	881	738	83.8	179	149	83.2	879	735	83.6	179	151	84.4
Number of Children												
None	0	0	0.0	14	12	85.7	0	0	0.0	14	11	78.6
One	340	276	81.2	348	285	81.9	340	290	85.3	347	280	80.7
Two	343	286	83.4	232	187	80.6	342	281	82.2	232	199	85.8
Three or more	522	438	83.9	230	192	83.5	521	425	81.6	230	195	84.8
Age of Youngest Child												
Unborn	84	70	83.3	112	92	82.1	83	70	84.3	112	91	81.3
0–2	555	476	85.8	379	306	80.7	555	455	82.0	378	314	83.1
3–5	254	199	78.3	143	120	83.9	253	209	82.6	143	123	86.0
6–12	249	208	83.5	163	133	81.6	249	210	84.3	163	133	81.6
13–18	63	47	74.6	27	25	92.6	63	52	82.5	27	24	88.9
Focal Child's Parentage												
Legal father, unknown how	0	0	0.0	3	2	66.7	0	0	0.0	3	3	100.0
Nonmarital child	1,116	925	82.9	757	618	81.6	1,114	926	83.1	756	624	82.5
Marital child	89	75	84.3	64	56	87.5	89	70	78.7	64	58	90.6
Number Legal Fathers												
No legal fathers	299	243	81.3	315	243	77.1	299	237	79.3	314	239	76.1
One	648	529	81.6	378	321	84.9	647	534	82.5	378	327	86.5
Two or more	258	228	88.4	131	112	85.5	257	225	87.5	131	119	90.8

Appendix Table TR6.2, continued

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Child Support Order[b]												
No child support order	455	365	80.2	418	328	78.5	455	362	79.6	417	327	78.4
Child support order	750	635	84.7	406	348	85.7	748	634	84.8	406	358	88.2
Child Support Paid by All NRPs[a]												
No child support paid	804	661	82.2	621	496	79.9	803	651	81.1	620	510	82.3
$1–$999	203	177	87.2	99	87	87.9	202	177	87.6	99	83	83.8
$1,000 or more	198	162	81.8	104	93	89.4	198	168	84.8	104	92	88.5
Arrearages Owed by All NRPs												
No arrearages owed	381	306	80.3	402	312	77.6	381	300	78.7	401	315	78.6
$1–$500	25	19	76.0	16	15	93.8	25	20	80.0	16	13	81.3
$501–$2,000	163	136	83.4	110	97	88.2	163	137	84.0	110	94	85.5
$2,001 or more	636	539	84.7	296	252	85.1	634	539	85.0	296	263	88.9
Research Group												
Control	568	461	81.2	429	347	80.9	568	472	83.1	429	358	83.4
Experimental	637	539	84.6	395	329	83.3	635	524	82.5	394	327	83.0
Initial W-2 Assignment												
W-2 Transition	66	54	81.8	53	46	86.8	66	55	83.3	53	46	86.8
Community Service Job	685	574	83.8	446	356	79.8	684	571	83.5	446	369	82.7
Caretaker of Newborn	32	27	84.4	116	93	80.2	32	24	75.0	115	94	81.7
Upper Tier	422	345	81.8	209	181	86.6	421	346	82.2	209	176	84.2
Quarter of Entry												
4th quarter of 1997	673	550	81.7	198	160	80.8	673	551	81.9	198	167	84.3
1st quarter of 1998	519	439	84.6	276	226	81.9	517	433	83.8	276	226	81.9
2nd quarter of 1998	13	11	84.6	350	290	82.9	13	12	92.3	349	292	83.7

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the twelve months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Appendix Table TR6.3
Mothers' Time 1 and Time 2 Response Rates among Mothers Living outside Milwaukee at Entry into W-2, by Case Type

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	277	224	80.9%	573	462	80.6%	275	220	80.0%	572	453	79.2%
Age of Resident Parent												
16–17	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
18–25	146	119	81.5	276	220	79.7	145	117	80.7	275	216	78.5
26–30	52	44	84.6	123	105	85.4	52	41	78.8	123	100	81.3
31 or older	79	61	77.2	174	137	78.7	78	62	79.5	174	137	78.7
Race of Resident Parent												
White	164	143	87.2	422	354	83.9	163	136	83.4	421	349	82.9
African American	71	54	76.1	76	60	78.9	70	57	81.4	76	61	80.3
Hispanic	16	13	81.3	18	12	66.7	16	13	81.3	18	12	66.7
Native American	14	9	64.3	35	23	65.7	14	10	71.4	35	18	51.4
Asian	9	2	22.2	10	4	40.0	9	2	22.2	10	4	40.0
Other	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Unknown	3	3	100.0	12	9	75.0	3	2	66.7	12	9	75.0
Education of Resident Parent												
Less than high school	128	95	74.2	199	150	75.4	127	96	75.6	199	153	76.9
High school	118	104	88.1	281	231	82.2	117	96	82.1	280	222	79.3
More than high school	31	25	80.6	93	81	87.1	31	28	90.3	93	78	83.9
Language of Resident Parent												
English	271	223	82.3	568	461	81.2	269	219	81.4	567	453	79.9
Non-English	6	1	16.7	5	1	20.0	6	1	16.7	5	0	0.0
Employment History[a]												
No UI-covered employment	64	49	76.6	77	55	71.4	64	47	73.4	77	49	63.6
1–4 quarters	128	104	81.3	166	131	78.9	126	99	78.6	166	132	79.5
5–7 quarters	63	52	82.5	200	163	81.5	63	56	88.9	200	163	81.5
All 8 quarters	22	19	86.4	130	113	86.9	22	18	81.8	129	109	84.5

Appendix Table TR6.3, continued

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Earnings History[a]												
No UI earnings	64	49	76.6	77	55	71.4	64	47	73.4	77	49	63.6
$1–$5,000	187	151	80.7	358	291	81.3	185	149	80.5	358	287	80.2
$5,001–$15,000	26	24	92.3	127	106	83.5	26	24	92.3	126	106	84.1
$15,001 or more	0	0	0.0	11	10	90.9	0	0	0.0	11	11	100.0
AFDC Receipt[a]												
None	0	0	0.0	302	242	80.1	0	0	0.0	301	245	81.4
1–18 months	131	106	80.9	223	182	81.6	129	103	79.8	223	176	78.9
19–24 months	146	118	80.8	48	38	79.2	146	117	80.1	48	32	66.7
Number of Children												
None	1	1	100.0	20	16	80.0	1	1	100.0	20	16	80.0
One	107	90	84.1	238	192	80.7	106	82	77.4	237	192	81.0
Two	76	67	88.2	170	138	81.2	75	69	92.0	170	138	81.2
Three or more	93	66	71.0	145	116	80.0	93	68	73.1	145	107	73.8
Age of Youngest Child												
Unborn	26	18	69.2	89	73	82.0	26	17	65.4	89	71	79.8
0–2	165	135	81.8	294	239	81.3	163	129	79.1	293	233	79.5
3–5	33	28	84.8	75	63	84.0	33	28	84.8	75	58	77.3
6–12	45	37	82.2	96	73	76.0	45	38	84.4	96	76	79.2
13–18	8	6	75.0	19	14	73.7	8	8	100.0	19	15	78.9
Focal Child's Parentage												
Legal father, unknown how	2	0	0.0	0	0	0.0	2	2	100.0	0	0	0.0
Nonmarital child	225	183	81.3	413	334	80.9	223	177	79.4	412	326	79.1
Marital child	50	41	82.0	160	128	80.0	50	41	82.0	160	127	79.4
Number Legal Fathers												
No legal fathers	75	57	76.0	201	156	77.6	74	51	68.9	200	154	77.0
One	152	125	82.2	288	239	83.0	151	127	84.1	288	235	81.6
Two or more	50	42	84.0	84	67	79.8	50	42	84.0	84	64	76.2

Appendix Table TR6.3, continued

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Child Support Order[b]												
No child support order	111	83	74.8	343	263	76.7	110	75	68.2	342	258	75.4
Child support order	166	141	84.9	230	199	86.5	165	145	87.9	230	195	84.8
Child Support Paid by All NRPs[a]												
No child support paid	139	103	74.1	361	283	78.4	138	99	71.7	360	274	76.1
$1–$999	71	60	84.5	75	61	81.3	70	61	87.1	75	63	84.0
$1,000 or more	67	61	91.0	137	118	86.1	67	60	89.6	137	116	84.7
Arrearages Owed by All NRPs												
No arrearages owed	107	78	72.9	375	295	78.7	106	75	70.8	374	288	77.0
$1–$500	11	10	90.9	19	15	78.9	11	9	81.8	19	15	78.9
$501–$2,000	31	28	90.3	41	33	80.5	31	24	77.4	41	34	82.9
$2,001 or more	128	108	84.4	138	119	86.2	127	112	88.2	138	116	84.1
Research Group												
Control	143	118	82.5	296	237	80.1	142	120	84.5	295	229	77.6
Experimental	134	106	79.1	277	225	81.2	133	100	75.2	277	224	80.9
Initial W-2 Assignment												
W-2 Transition	36	24	66.7	107	86	80.4	36	22	61.1	107	78	72.9
Community Service Job	68	54	79.4	78	59	75.6	67	55	82.1	78	57	73.1
Caretaker of Newborn	26	21	80.8	131	110	84.0	26	18	69.2	131	108	82.4
Upper Tier	147	125	85.0	257	207	80.5	146	125	85.6	256	210	82.0
Quarter of Entry												
4th quarter of 1997	273	220	80.6	174	141	81.0	271	217	80.1	174	136	78.2
1st quarter of 1998	4	4	100.0	146	126	86.3	4	3	75.0	145	121	83.4
2nd quarter of 1998	0	0	0.0	253	195	77.1	0	0	0.0	253	196	77.5

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Appendix Table TR6.4
Fathers' Time 1 and Time 2 Response Rates for Full Effort Replicates[a]

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	677	289	42.7%	736	340	46.2%
Age of Nonresident Parent						
16–17	3	1	33.3	5	1	20.0
18–25	206	96	46.6	240	114	47.5
26–30	176	75	42.6	185	75	40.5
31 or older	287	116	40.4	299	148	49.5
Unknown	5	1	20.0	7	2	28.6
Race of Nonresident Parent						
White	117	60	51.3	130	74	56.9
African American	263	106	40.3	293	126	43.0
Hispanic	29	12	41.4	31	9	29.0
Native American	12	4	33.3	14	6	42.9
Asian	3	0	0.0	3	0	0.0
Other	0	0	0.0	0	0	0.0
Unknown	253	107	42.3	265	125	47.2
Employment History[b]						
No UI-covered employment	175	45	25.7	200	67	33.5
1–4 quarters	156	55	35.3	170	75	44.1
5–7 quarters	169	89	52.7	177	93	52.5
All 8 quarters	152	90	59.2	162	97	59.9
Unknown	25	10	40.0	27	8	29.6
Earnings History[b]						
No UI earnings	175	45	25.7	200	67	33.5
$1–$5,000	255	108	42.4	275	127	46.2
$5,001–$15,000	150	85	56.7	161	91	56.5
$15,001 or more	72	41	56.9	73	47	64.4
Unknown	25	10	40.0	27	8	29.6
Parentage of Focal Child						
Legal father, unknown how	4	2	50.0	5	2	40.0
Paternity	558	236	42.3	610	280	45.9
Marriage	115	51	44.3	121	58	47.9
Number of Children with RP						
None	8	7	87.5	9	7	77.8
One	421	180	42.8	467	203	43.5
Two	154	69	44.8	161	88	54.7
Three or more	94	33	35.1	99	42	42.4

Appendix Table TR6.4, continued

	Time 1			Time 2		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Age Youngest Child with RP						
Unborn	12	6	50.0	15	9	60.0
0–2	222	109	49.1	268	128	47.8
3–5	174	68	39.1	176	86	48.9
6–12	219	84	38.4	226	95	42.0
13–18	50	22	44.0	51	22	43.1
Child Support Order with RP[c]						
No child support order	237	95	40.1	294	126	42.9
Child support order	440	194	44.1	442	214	48.4
Child Support Payments to RP[b]						
No child support payments	440	164	37.3	501	208	41.5
$1–$999 child support paid	126	70	55.6	124	66	53.2
$1,000 or more child support paid	111	55	49.5	111	66	59.5
Arrearages Owed to State						
No arrearages	205	96	46.8	261	125	47.9
$1–$500 owed	29	10	34.5	28	10	35.7
$501–$2,000	122	57	46.7	125	51	40.8
$2,001 or more	321	126	39.3	322	154	47.8

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Fathers in survey replicates 1 through 10 were eligible for telephone and in-person interviews ("full effort"). Fathers in survey replicates 11 through 30 were eligible only for telephone interviews ("partial effort").
[b]Measured for the 12 months prior to October 1, 1997.
[c]Measured as of October 1, 1997.

Appendix Table TR6.5
Fathers' Time 1 and Time 2 Response Rates, by Milwaukee/Non-Milwaukee Residence of Resident Parent at Entry into W-2

	Time 1						Time 2					
	In Milwaukee County			Outside Milwaukee County			In Milwaukee County			Outside Milwaukee County		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	1,324	390	29.5%	611	253	41.4%	1,460	426	29.2%	670	270	40.3%
Age of Nonresident Parent												
16–17	8	2	25.0	6	3	50.0	13	3	23.1	9	2	22.2
18–25	435	139	32.0	186	66	35.5	507	150	29.6	210	72	34.3
26–30	340	90	26.5	149	70	47.0	356	87	24.4	163	67	41.1
31 or older	534	159	29.8	268	113	42.2	576	186	32.3	283	127	44.9
Unknown	7	0	0.0	3	1	33.3	8	0	0.0	5	2	40.0
Race of Nonresident Parent												
White	41	15	36.6	285	139	48.8	52	22	42.3	309	148	47.9
African American	648	195	30.1	126	31	24.6	740	214	28.9	142	32	22.5
Hispanic	59	10	16.9	36	11	30.6	68	10	14.7	400	12	3.0
Native American	5	0	0.0	27	11	40.7	7	1	14.3	28	9	32.1
Asian	1	0	0.0	6	0	0.0	1	0	0.0	6	0	0.0
Other	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Unknown	570	170	29.8	132	61	46.2	592	179	30.2	145	69	47.6
Employment History[a]												
No UI-covered employment	371	64	17.3	151	35	23.2	420	81	19.3	169	48	28.4
1–4 quarters	316	76	24.1	143	54	37.8	350	102	29.1	155	55	35.5
5–7 quarters	278	107	38.5	140	63	45.0	299	104	34.8	153	70	45.8
All 8 quarters	285	125	43.9	169	98	58.0	310	123	39.7	180	94	52.2
Unknown	74	18	24.3	9	3	33.3	81	16	19.8	13	3	23.1
Earnings History[a]												
No UI earnings	371	64	17.3	151	35	23.2	420	81	19.3	169	48	28.4
$1–$5,000	497	144	29.0	221	85	38.5	549	170	31.0	240	85	35.4
$5,001–$15,000	266	117	44.0	139	73	52.5	289	117	40.5	152	82	53.9
$15,001 or more	116	47	40.5	92	57	62.0	121	42	34.7	96	52	54.2
Unknown	74	18	24.3	9	3	33.3	81	16	19.8	13	3	23.1

Appendix Table TR6.5, continued

	Time 1						Time 2					
	In Milwaukee County			Outside Milwaukee County			In Milwaukee County			Outside Milwaukee County		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Parentage of Focal Child												
Legal father, unknown how	3	1	33.3	1	1	100.0	3	1	33.3	2	1	50.0
Paternity	1,185	349	29.5	417	159	38.1	1,309	379	29.0	463	176	38.0
Marriage	136	40	29.4	194	93	47.9	148	46	31.1	205	93	45.4
Number of Children with RP												
None	2	2	100.0	13	8	61.5	7	4	57.1	16	10	62.5
One	846	245	29.0	401	163	40.6	948	264	27.8	439	173	39.4
Two	314	100	31.8	134	62	46.3	330	107	32.4	146	62	42.5
Three or more	162	43	26.5	64	20	31.3	175	51	29.1	69	25	36.2
Age Youngest Child with RP												
Unborn	14	4	28.6	19	9	47.4	23	10	43.5	21	9	42.9
0–2	358	123	34.4	261	102	39.1	450	130	28.9	297	114	38.4
3–5	379	108	28.5	130	50	38.5	388	117	30.2	136	58	42.6
6–12	480	127	26.5	172	81	47.1	500	140	28.0	185	73	39.5
13–18	93	28	30.1	30	11	36.7	99	29	29.3	31	16	51.6
Child Support Order with RP[b]												
No child support order	366	106	29.0	287	111	38.7	481	130	27.0	336	124	36.9
Child support order	958	284	29.6	325	142	43.7	979	296	30.2	334	146	43.7
Child Support Payments to RP[a]												
No child support payments	888	214	24.1	343	113	32.9	1,017	262	25.8	395	133	33.7
$1–$999 child support paid	232	93	40.1	115	53	46.1	236	86	36.4	118	50	42.4
$1,000 or more child support paid	204	83	40.7	154	87	56.5	207	78	37.7	157	87	55.4
Arrearages Owed to State												
No arrearages	273	86	31.5	307	135	44.0	383	109	28.5	359	158	44.0
$1–$500 owed	44	10	22.7	30	18	60.0	46	14	30.4	30	14	46.7
$501–$2,000	295	91	30.8	65	32	49.2	307	81	26.4	66	25	37.9
$2,001 or more	712	203	28.5	210	68	32.4	724	222	30.7	215	73	34.0

Appendix Table TR6.5, continued

	Time 1						Time 2					
	In Milwaukee County			Outside Milwaukee County			In Milwaukee County			Outside Milwaukee County		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Survey Replicate												
Full effort replicate	457	184	40.3	220	105	47.7	500	216	43.2	236	124	52.5
Partial effort replicate	867	206	23.8	392	148	37.8	960	210	21.9	434	146	33.6

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

Appendix Table TR6.6
Fathers' Time 1 and Time 2 Response Rates, by Case Type of Resident Parent

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Total Cases	1,072	324	30.2%	864	319	36.9%	1,131	358	31.7%	999	338	33.8%
Age of Nonresident Parent												
16–17	5	1	20.0	9	4	44.4	6	0	0.0	16	5	31.3
18–25	352	110	31.3	269	95	35.3	372	118	31.7	345	104	30.1
26–30	273	82	30.0	216	78	36.1	284	86	30.3	235	68	28.9
31 or older	437	131	30.0	365	141	38.6	462	154	33.3	397	159	40.1
Unknown	5	0	0.0	5	1	20.0	7	0	0.0	6	2	33.3
Race of Nonresident Parent												
White	113	51	45.1	213	103	48.4	121	60	49.6	240	110	45.8
African American	479	135	28.2	295	91	30.8	509	141	27.7	373	105	28.2
Hispanic	55	9	16.4	40	12	30.0	61	13	21.3	47	9	19.1
Native American	11	4	36.4	21	7	33.3	13	4	30.8	22	6	27.3
Asian	5	0	0.0	2	0	0.0	5	0	0.0	2	0	0.0
Other	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Unknown	409	125	30.6	293	106	36.2	422	140	33.2	315	108	34.3
Employment History[a]												
No UI-covered employment	308	55	17.9	214	44	20.6	331	79	23.9	258	50	19.4
1–4 quarters	245	64	26.1	214	66	30.8	256	78	30.5	249	79	31.7
5–7 quarters	235	91	38.7	183	79	43.2	246	99	40.2	206	75	36.4
All 8 quarters	234	105	44.9	220	118	53.6	244	93	38.1	246	124	50.4
Unknown	50	9	18.0	33	12	36.4	54	9	16.7	40	10	25.0
Earnings History[a]												
No UI earnings	308	55	17.9	214	44	20.6	331	79	23.9	258	50	19.4
$1–$5,000	393	121	30.8	325	108	33.2	412	136	33.0	377	119	31.6
$5,001–$15,000	224	98	43.8	181	92	50.8	233	98	42.1	208	101	48.6
$15,001 or more	97	41	42.3	111	63	56.8	101	36	35.6	116	58	50.0
Unknown	50	9	18.0	33	12	36.4	54	9	16.7	40	10	25.0

Appendix Table TR6.6, continued

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Parentage of Focal Child												
Legal father, unknown how	1	1	100.0	3	1	33.3	2	1	50.0	3	1	33.3
Paternity	946	286	30.2	656	222	33.8	995	312	31.4	777	243	31.3
Marriage	125	37	29.6	205	96	46.8	134	45	33.6	219	94	42.9
Number of Children with RP												
None	1	1	100.0	14	9	64.3	1	1	100.0	22	13	59.1
One	688	211	30.7	559	197	35.2	730	224	30.7	657	213	32.4
Two	249	82	32.9	199	80	40.2	259	94	36.3	217	75	34.6
Three or more	134	30	22.4	92	33	35.9	141	39	27.7	103	37	35.9
Age Youngest Child with RP												
Unborn	12	5	41.7	21	8	38.1	14	8	57.1	30	11	36.7
0–2	326	107	32.8	293	118	40.3	354	109	30.8	393	135	34.4
3–5	307	86	28.0	202	72	35.6	314	105	33.4	210	70	33.3
6–12	357	109	30.5	295	99	33.6	375	113	30.1	310	100	32.3
13–18	70	17	24.3	53	22	41.5	74	23	31.1	56	22	39.3
Child Support Order with RP[b]												
No child support order	285	78	27.4	368	139	37.8	336	89	26.5	481	165	34.3
Child support order	787	246	31.3	496	180	36.3	795	269	33.8	518	173	33.4
Child Support Payments to RP[a]												
No child support payments	670	159	23.7	561	168	29.9	723	192	26.6	689	203	29.5
$1–$999 child support paid	213	84	39.4	134	62	46.3	215	88	40.9	139	48	34.5
$1,000 or more child support paid	189	81	42.9	169	89	52.7	193	78	40.4	171	87	50.9
Arrearages Owed to State												
No arrearages	204	63	30.9	376	158	42.0	254	74	29.1	488	193	39.5
$1–$500 owed	41	12	29.3	33	16	48.5	41	14	34.1	35	14	40.0
$501–$2,000	214	74	34.6	146	49	33.6	218	70	32.1	155	36	23.2
$2,001 or more	613	175	28.5	309	96	31.1	618	200	32.4	321	95	29.6

Appendix Table TR6.6, continued

	Time 1						Time 2					
	AFDC Case			W-2 Case			AFDC Case			W-2 Case		
	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate	Survey Sample (N)	Respondents (N)	Response Rate
Survey Replicate												
Full effort replicate	702	153	21.8	307	136	44.3	388	183	47.2	348	157	45.1
Partial effort replicate	370	171	46.2	557	183	32.9	743	175	23.6	651	181	27.8

Notes: Response rate (RR) = I / (I + P + R + NC + O) where I=completed interview, P=partial interview, R=refusal, NC=noncontact (includes not located), O=other noninterview. Characteristics are measured at entry into W-2 unless otherwise noted.

[a]Measured for the 12 months prior to October 1, 1997.
[b]Measured as of October 1, 1997.

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