Published in final edited form as:

Soc Sci Res. 2008 June ; 37(2): 544–558.

Neighborhoods, Employment, and Welfare Use: Assessing the Influence of Neighborhood Socioeconomic Composition

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Abstract

We draw upon data from the Fragile Families and Child Well-Being Study to examine the effect of neighborhood socioeconomic composition on two key economic outcomes, and in doing so to test the validity of the index of concentration at the extremes (ICE) as a measure of neighborhood circumstances. Methodologically, we find that the index succinctly captures economic variation within neighborhoods in a way that avoids problems of colinearity that have characterized prior studies. Neighborhoods can be characterized as falling on a continuum ranging from concentrated disadvantage to concentrated advantage; the ICE measure does a good job capturing this variation and differentiating the neighborhood circumstances experienced by different groups. Substantively, we show that neighborhood economic circumstances are related to new mothers' welfare use and employment, above and beyond their individual socioeconomic characteristics.

The United States experienced massive structural changes in the late 1960s and 1970s that transformed the social, demographic, and economic composition of central cities. Building on the work of Kain (1968) and others, William Julius Wilson (1987) argued that the flight of manufacturing jobs during this time, coupled with housing and transportation policies that facilitated the selective out-migration of whites and some middle class blacks, stripped central cities of stable employment and eroded their tax base. These changes interacted with discriminatory practices in the housing and lending markets (Yinger 1995; Ross and Yinger 2002) to create socially isolated and racially segregated neighborhoods characterized by spatially concentrated poverty (Massey and Denton 1993; Massey and Fischer 2000).

According to Wilson (1996), this new isolation had two important consequences for poor minority families. First, they came to experience less contact with members of the middle class, depriving them not only of exposure to mainstream norms and values but also to social networks crucial for finding work (Granovetter 1995). Second, structural changes during the 1960s and 1970s brought about a progressive "deinstitutionalization" of poor communities, divesting them of public and private institutions critical to economic health and social mobility (see Sampson, Morenoff, and Earls 1999; Morenoff, Sampson, and Raudenbush 2001). As a result, poor neighborhoods increasingly came to lack both businesses that might offer jobs and community organizations capable of providing residents with employable skills and basic services.

The idea that social and economic conditions within neighborhoods influence people's socioeconomic prospects is the central premise of the "neighborhood effects" hypothesis.

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Over the last twenty years, researchers have tested it across a range of outcomes, attempting to pinpoint the specific conditions under which neighborhoods influence behavior while developing sophisticated statistical methods to do so (see Bryk and Raudenbush 1992; Brooks-Gunn, Duncan, and Aber 1997). This paper contributes to this literature by analyzing how neighborhood socioeconomic composition influences two critical measures of economic status of consuming interest to policy makers and the public: employment and welfare receipt.

In examining this relationship, we use a new measure of neighborhood socioeconomic composition that overcomes problems associated with ecological indices generally used in the past. Specifically, we draw on data from the Fragile Families and Child Well-Being Study to consider how well the *index of concentration at the extremes* (ICE) measures the socioeconomic composition of neighborhoods, comparing it to two alternative measures that have been more commonly employed to this point—the proportion of families that are poor and the proportion that are affluent. We then compare results obtained when predicting individual-level outcomes using these proportions versus the ICE measure. Our results suggest that a neighborhood's socioeconomic composition does influence mothers' employment and welfare receipt over and above individual-level factors and, moreover, that ICE offers a parsimonious and statistically tractable way of measuring ecological composition to assess its influence on individual outcomes.

MEASURING CONCENTRATED AFFLUENCE AND POVERTY

As noted above, a growing body of research suggests that people's social and economic attainments are affected not only by their individual and family circumstances, but also by conditions within the neighborhoods they inhabit as adults or grow up in as children. Given Wilson's theorizing about the concentration of poverty, interest initially focused on the neighborhood poverty rate—the proportion of families falling below the official federal poverty line.

Although income data needed to generate poverty statistics were readily available from tract files produced in association with the decennial census, prior to Wilson's theorizing, these files were not commonly linked to survey data to produce the sorts of multilevel data sets needed to test the neighborhood effects hypothesis (Jencks and Mayer 1990; Massey 2001). Research thus got off to a slow start owing to this data limitation; but by the end of the 1990s, a substantial literature had emerged to suggest that growing up and living in a poor neighborhood significantly reduced an individual's life chances, holding constant individual and family characteristics (Brooks-Gunn, Duncan, and Aber 1997b; Sampson, Morenoff, and Gannon-Rowley 2002; Small and Newman 2001; Harding 2003).

Although most scholarly attention initially focused on neighborhood poverty, researchers have also investigated the influence of other neighborhood circumstances, such as the prevalence of unwed mothers, average education, the level of welfare dependency, the proportion of incarcerated males, and levels of crime and violence—but most of these were strongly correlated with the poverty rate and were assumed to capture the same underlying dimension of “underclass” conditions (Ricketts and Sawhill 1988; Weicher 1990; Mincy, Sawhill, and Wolf 1990; Ricketts and Mincy 1990).

A few studies, however, considered not only indicators of concentrated disadvantage and deprivation, but also of concentrated affluence and privilege. Crane (1991), for example, examined how the proportion of high-status individuals within a neighborhood affected the odds of dropping out of school and becoming a teenage mother. He found that both outcomes were strongly predicted by the relative number of affluent families, controlling for a variety of individual and family characteristics. Building on this work, Brooks-Gunn et al.

(1993) argued that it was the positive effect of concentrated affluence, and not the negative effect of exposure to low-income neighbors, that mattered most in determining individual outcomes.

Although not recognized initially, the structural changes noted by Wilson (1987) produced a remarkable concentration of affluence during the 1970s and 1980s, as well as a new concentration of poverty (Massey and Eggers 1990, 1993; Massey 1996; Massey and Fischer 2003; Fischer et al. 2004). Given different theoretical arguments for the hypothesized influence of poor versus affluent neighbors, Brooks-Gunn et al (1993) included measures for both variables in the same statistical models to determine which factor was more important empirically in predicting various outcomes. Across a range of dependent variables—intelligence, behavior problems, dropping out of school, and teenage childbearing—they found that the presence of high income neighbors was more important in reducing negative outcomes than the presence of low income neighbors was in promoting them.

A problem with such comparisons, however, is that proportions of affluent and poor families are necessarily correlated across neighborhoods. At the limit, as the share of families in poverty approaches 1.0, the proportion of affluent families necessarily approaches 0.0. Although the relationship is not wholly tautological—because it depends on the relative number of middle class families as well—the relationship is nonetheless strong enough in practical terms to build considerable colinearity into statistical estimates.

To overcome this problem, Massey (2001) proposed conceptualizing the concentration of affluence and poverty as falling along a single underlying continuum ranging from a negative extreme where all families are poor to a neutral point where affluent and poor families are equally balanced to a positive extreme where all families are affluent. To measure variation on this continuum, he proposed an index of concentration at the extremes. This measure, known by its acronym ICE, is computed as the number of affluent families in a census tract minus the number of poor families, divided by the total number of families in the census tract for whom there is data on income:

$$ICE_i = \frac{A_i - P_i}{T_i} \quad (1)$$

where A_i = the number of families or persons classified as affluent in neighborhood i , P_i is the number of families or persons classified as poor in neighborhood i , and T_i is the total population of neighborhood i for whom there is data on income.

In keeping with the conceptualization of concentrated affluence and poverty as forming the limits of a single continuum, the index varies from a theoretical minimum of -1.0 (all families are poor) to a theoretical maximum of $+1.0$ (all families are affluent) and passes through 0 (affluent and poor are equally balanced). ICE circumvents the multicollinearity problem posed by including measures of neighborhood affluence and poverty in the same statistical models. We therefore argue that it constitutes a better and more consistent predictor of individual outcomes than the two separate measures, either taken together or entered into models one at a time.

WELFARE, WORK, AND POLICY

Income transfers to support poor families have never been very popular with American taxpayers, and historically conservative politicians have sought to turn the public against them by framing welfare recipients as lazy, promiscuous, mercenary, and generally “undeserving” (Katz 1990; Skocpol 1992; Gans 1995). Despite these efforts at

demonization, Aid to Families with Dependent Children (AFDC) remained intact as a social welfare program from its inception in the New Deal until quite recently (see Katz 1986). The main effect of efforts to frame the poor as undeserving was to minimize the size of the income transfers, limit the criteria for eligibility, and subject the poor to intrusive moral surveillance to confirm their “deservingness” (Piven and Cloward 1993).

When the welfare program was originally established in the 1930s, the size of payments and terms of eligibility were relegated to the states in deference to southern legislators who wished to exclude African Americans from participation (Katznelson 2005). Until the civil rights era, African Americans throughout the south, as well as in many northern states, were systematically denied access to AFDC. In 1966, however, the National Welfare Rights Organization began to organize poor minority women to apply for AFDC and then to go to court to force states to honor the entitlements under civil rights law (Piven and Cloward 1977; Roach and Roach 1978). As a result, the share of poor women on welfare surged, going from 5% in 1965 to 48% in 1973 (Massey 2007).

Because black women were disproportionately represented among the new welfare recipients, race entered the arsenal of characteristics that could be used to demonize welfare recipients (Quadagno 1994; Abramovitz 2000). During the 1970s, welfare came to be associated in the public imagination with poor, black women who were portrayed as irresponsible “welfare queens” bearing sequential children out of wedlock to increase the size of their welfare checks (Neubeck and Cazenave 2001; Hancock 2004). Through the incessant repetition of this imagery in the public arena, Americans came to overestimate both the cost of welfare programs and the participation of blacks within them, turning public opinion decisively against AFDC and other transfer programs by the early 1990s (Gilens 1999, 2003).

This shift of opinion set the stage for a broader political mobilization against “welfare as we know it.” Led by conservative thinkers such as Charles Murray (1994) and Lawrence Mead (1986), and later joined by pragmatic politicians in the Democratic Leadership Council, the movement made getting poor women off welfare and into jobs a top priority in the 1990s (O’Connor 2003). In 1996 congress passed and President Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act, which abolished AFDC and created a new program of Temporary Assistance for Needy Families. Whereas the former was a permanent entitlement, the latter was set up as a transitional program of short-term assistance. It capped the total amount of time that women could receive federally-subsidized income transfers (Goldfeld 2007). In response, the share of poor women on welfare plummeted from 36% in 1996 to 10% in 2004.

Neighborhood Economic Conditions, Welfare Use and Employment

In essence, poverty was privatized after 1996 as poor women were pushed into the labor force and encouraged to make ends meet without federal assistance (Massey 2007). Despite this radical shift in social policy, however, not all poor women with children were able to make the transition to paid employment, which suggests the existence of structural barriers to work that indicate a lack of realistic employment opportunities rather than a lack of motivation on the part of poor women. Here we argue that residence in a poor neighborhood constitutes a significant structural barrier for low income women, particularly minority women who face discrimination in both labor and housing markets.

In the neighborhood effects literature, ecological context has been hypothesized to affect the propensity to use welfare and to work in several ways. First, living in a neighborhood with a greater concentration of poor people decreases the social stigma associated with welfare use (Moffitt 1983; Rank and Hirschl 1988; Hirschl and Rank 1991). It also exposes young

women to others with experience navigating the welfare system (Kissane 2003a), permitting them to learn the rules governing eligibility, how to navigate the bureaucracy, and how to present oneself to a case worker to increase the odds of receiving benefits. As a result, Bertrand, Luttmer, and Mullainathan (2000) found that living in a neighborhood with a higher concentration of people who speak one's own language significantly increases the odds of going on welfare, particularly among women who belong to a language group with high welfare use.

Given that their neighbors are also poor, mothers in poor neighborhoods also have less access to informal financial support from friends and family members, thus forcing them to turn to welfare to make ends meet (Edin and Lein 1997; Hao and Brinton 1997). For this reason, Ludwig, Duncan, and Pinkston (2004) found that public housing residents who were offered housing vouchers to move into low-poverty neighborhoods were less likely to use welfare in their new neighborhoods than a randomly selected control group.

Neighborhood-based social networks are also hypothesized to influence the likelihood that a mother is able to find a job. The same networks that enable a new mother to navigate the welfare bureaucracy may not work so well when she attempts to secure formal employment (Wilson 1987; Kissane 2003b). In addition, being embedded in a social network that contains few middle class members likely reduces the normative pressure to find work, while at the same time offering little in the way of job-specific social capital (Campbell, Marsden, and Hurlbert 1986; Smith 2000). Thus, Weinberg, Reagan, and Yankow (2004) show that the neighborhood employment rate has a significant effect on hours worked by residents, even after controlling for individual fixed effects, a finding that is consistent with recent ethnographic work (Newman 1999).

The relationship between neighborhood economic conditions and employment may also be mediated by proximity to jobs. Even though work by Allard (2004) and Small and McDermott (2006) indicates that poor neighborhoods may have more jobs and services than Wilson originally thought, Weinberg, Reagan, and Yankow (2004) find that despite living closer to employment opportunities, the poor still experience worse labor market outcomes. Research by Kirschenman and Neckerman (1991) suggests that neighborhood of residence is often used by employers to code for a job applicant's suitability as a worker. Hiring practices are also structured so to exclude applicants from poor, segregated neighborhoods (Holzer 1996).

For the present paper, our leading hypothesis is that residents of neighborhoods characterized by concentrated poverty face additional barriers to economic self-support above and beyond their disadvantaged individual and family circumstances, whereas those living in areas of concentrated affluence experience a boost on the road to self-sufficiency that goes beyond their individual class privileges. We therefore expect welfare use to be higher among mothers living in concentrated poverty and lower among mothers living in concentrated poverty, even after controlling for individual- and family-level characteristics. Similarly, we expect employment to be lower among mothers in poor communities and higher among mothers in affluent communities.

SOURCE OF DATA

For our analysis we draw on data from the Fragile Families and Child Well-Being Study, which surveyed some 5,000 mostly unwed couples and their children living in 20 large cities between 1998 and 2000, precisely the time when changes in social policy were pushing poor mothers off of welfare and into the job market. The sample thus corresponds very closely to the target population for welfare reform. The same respondents were re-interviewed roughly one year after the baseline survey and again 30 months following the child's birth. At each

interview, cases were assigned a geocode and tract characteristics from the 2000 census were linked to the individual records.

Here we use data from the first and second round interviews, measuring neighborhood conditions and individual-level covariates at the baseline and outcomes at the second wave. Our sample is thus limited to mothers who participated in both waves of the survey, yielding a list-wise deletion of 533 cases, along with 189 other cases that were missing data on one or more of variables under study. The final sample thus includes 4,176 mothers who were interviewed at the birth of their child and twelve months later and who provided complete answers to all the items on which this analysis is based. Table 1 presents means and standard deviations of the outcome and control variables used in the analyses below. The means and standard deviations of the sub-sample do not differ significantly from those of the overall sample.

The ecological indicators of interest are the proportion poor, the proportion affluent, and the index of concentration at the extremes, each computed within census tract records appended to individual respondents in the Fragile Families data base at the time of the initial survey. We define a “poor” family as one that earns under \$15,000 per year, the closest categorical boundary to the official poverty line for a family of four in 2000 (U.S. Bureau of the Census 2000). Following Smith (1988), Massey and Eggers (1993), and Massey and Fischer (2003), we define “affluent” as a family whose annual earnings exceed \$74,999, or roughly four times our threshold of poverty. These are rough approximations for neighborhood poverty and affluence, of course, but they correspond closely to the cutoffs used by other researchers.

Table 2 presents summary data on neighborhood socioeconomic conditions experienced by young mothers at the time of the birth that qualified them for inclusion in the Fragile Families Study. The top panel shows the average proportion poor in neighborhoods inhabited by white, Hispanic, and black mothers, along with minimums and maximums and inter-quartile boundaries for the underlying distribution of neighborhood poverty rates across individuals. Consistent with many prior studies, we find that whites experienced the lowest geographic concentration of poverty and that African Americans experienced the highest, with Hispanics falling in-between. Thus the average white mother in the Fragile Families survey lived in a neighborhood that was 10% poor, but the average Hispanic mother inhabited one that was 19% poor; the corresponding figure for black mothers was 24%.

The inter-quartile boundaries reveal how different the ecological circumstances of white, Hispanic, and black mothers really are. Whereas half of all white mothers lived in a neighborhood where the poverty rate was less than 7%, half of all black mothers lived in a neighborhood where the poverty rate was 23% or more, and a quarter lived in a neighborhood where at least one third of all families were in poverty. Among Hispanic mothers, half lived in neighborhoods where the poverty rate was less than 18% and a quarter lived in neighborhoods where it was 26% or more.

The middle panel considers the proportion of affluent families within neighborhoods inhabited by young mothers. Once again the contrast between groups is obvious, except in this case, whites experience the highest geographic concentrations and blacks the lowest. Whereas the average white mother lived in a neighborhood where 29% of the families were affluent, the average black mother lived in a neighborhood where just 14% were affluent, compared with 18% for Hispanic mothers. Again the distributions reveal very different levels of exposure to affluence among mothers in the Fragile Families sample. Half of all white mothers lived in neighborhoods where at least 23% of the families were affluent, but

three quarters of all black mothers lived in a neighborhood where less than 18% were affluent.

Figure 1 plots the foregoing averages to indicate the problem with using neighborhood poverty and affluence rates as covariates in the same statistical model. Although the relation between the two is not necessarily tautological, in practice they display a very clear inverse relationship. As the concentration of poverty rises going from whites, to Hispanics, to blacks, the concentration of affluence progressively falls. Across all individual cases, the correlation between the two indicators is -0.68 .

The bottom panel of Table 1 combines the two indicators into a single index using the formula of equation (1). As can be seen, the ICE succinctly captures the information contained in both measures without building colinearity into the analysis. As noted earlier, values of ICE between 0 and 1 mean that the group in question tends to live in areas of concentrated affluence whereas values from -1 to 0 mean that the group tends to reside in areas of concentrated poverty.

Although ICE theoretically ranges from -1 to $+1$, in the Fragile Families data it varied empirically from $-.772$ to $.885$ with a mean of $-.006$. In other words, the average mother lives in a neighborhood with roughly equal numbers of poor and affluent families, though there is considerable variation in ecological conditions from person to person. The means shown in Table 1 suggest that much of this variation is between rather than within ethnic groups. Whereas the average ICE score stood at -0.103 for black mothers, it was 0.186 for white mothers and -0.007 for Hispanic mothers. In other words, the average white mother lived in a neighborhood where the share of affluent families exceed the share of poor families by around 19 points; the average Hispanic mother lived in a neighborhood with equal numbers of affluent and poor families; and the average black mother experienced a neighborhood environment where the relative number of poor families outnumbered affluent families by 10 points.

Once again, the underlying distributions underscore the huge differences in neighborhood economic conditions faced by mothers in the three groups. Whereas three quarters of white mothers lived in neighborhoods where the relative number of affluent families equaled or exceeded the relative number of poor families, almost three quarters of black mothers experienced a neighborhood where the percentage of poor exceeded the percentage of affluent families. As for Hispanics, about half of all mothers experienced a neighborhood where the number of affluent families equaled or exceeded the number of poor families.

NEIGHBORHOOD CONDITIONS AND WELFARE RECEIPT

The foregoing analysis suggests that the relative numbers of poor and affluent families within residential areas are inversely related and quite likely to be colinear in any statistical analysis of neighborhood effects. We also find that the index of concentration at the extremes represents a tractable and easily computable way to capture information contained in both indices while avoiding statistical problems associated with colinearity. We now turn to a comparison of how the various measures fare in predicting outcomes associated with the employment of young mothers one year after the birth of their child.

Welfare receipt

We begin by analyzing whether or not a mother was on welfare at the time of the second interview 12 months after the birth of the child that rendered her eligible for participation in the Fragile Families survey. According to the Fragile Families data, around 25% of mothers were on welfare at the time of the second survey, though 53% had done at least some work

for pay in the week prior to the interview. In Table 3 we present the results of four logistic regression equations estimated to predict welfare use from neighborhood economic circumstances, controlling for race and ethnicity, age, region, and select Wave 1 characteristics, including education, marital status, prior work experience, and poverty status.^a Several of the dichotomous covariates used in the analyses (including race, education, and employment status) contained missing data. In order to reduce the number of missing cases, we created dichotomous variables, each indicating whether mothers were missing data on a given covariate. These dichotomous variables are included in each analysis. Model 1 measures neighborhood economic status using the proportion of families who are poor, Model 2 uses the proportion affluent, Model 3 includes both the proportion poor and the proportion affluent, and Model 4 uses the index of concentration at the extremes. The results from each analysis demonstrate whether and how welfare use and neighborhood economic conditions are associated, but we cannot say for certain that neighborhood conditions are causally related to mothers' economic decision-making. Still, in all models we include a variable for mothers' length of time in neighborhood at Wave 1 (measured in years) in order to account for duration of exposure to neighborhood conditions. Standard errors are adjusted for clustering at the neighborhood level and are presented for the neighborhood indicators, but not for the control variables. Levels of statistical significance are indicated for all variables by asterisks.

Model 1 shows that being on welfare at the time of the second interview is very strongly predicted by the neighborhood poverty rate at the time of the first interview. Holding constant individual socioeconomic characteristics, raising the proportion poor from 0 to 1.0 increases the odds of welfare receipt by a factor of around 6.6 ($e^{1.887}=6.59$). Model 2 likewise indicates that the likelihood of welfare receipt is strongly predicted by the proportion affluent, though the sign of the coefficient is naturally negative rather than positive. Indeed, in absolute terms the two coefficients are nearly identical: +1.887 versus -1.902. Thus the effect of neighborhood poverty in raising the likelihood of welfare receipt appears to be about the same as the effect of neighborhood poverty in lowering it.

Model 3 shows that when both indicators are included in the model, however, only the coefficient for neighborhood poverty is statistically significant. We do not believe this result indicates that the presence of poor neighbors is more important than the absence of affluent neighbors in determining welfare use. Rather, the two indicators are so colinear that all of the variance in the outcome is picked up by the proportion poor, leaving little to be explained by the proportion affluent. The presence of colinearity is indicated by the inflated standard errors in Model 3 compared with Models 1 and 2. Given that roughly a fifth of all incomes are imputed rather than reported on the U.S. census, the determination of which index happens to pick up the majority of the variance could well be a function of measurement error alone.

The last column in Table 3 shows what happens when ICE is used to predict the likelihood of welfare receipt. As can be seen, the standard error is quite low and the effect is strong and statistically significant: as neighborhood economic conditions move from one extreme (concentrated poverty) to the other (concentrated affluence) the probability of being on welfare steadily declines. Figure 2 plots predicted probabilities of welfare receipt at different proportions of poor, proportions of affluent, and values of the ICE. These values were generated by using Models 1, 2, and 4 in Table 2 and varying the three respective indices

^aIt is possible that the Wave 1 measures of socioeconomic status, such as employment and poverty status, are correlated with the unobserved error term and therefore pose an endogeneity problem. Thus, we ran each model without the Wave 1 SES measures. The results (not shown) differed from the results presented in this paper, the most significant difference being that the coefficients on the neighborhood measures were much larger and nearly always significant. The authors feel that omitting the Wave 1 SES measures leads to inflated neighborhood "effects" and therefore choose to keep the SES measures in the models.

from their minima to maxima while holding the effect of all other variables constant at the mean.

The right-hand side of the graph shows that as the proportion of poor in a mother's neighborhood rises from 0 to 1, the probability of her going on welfare rises from 0.12 to around 0.45, other things equal, and that as the proportion affluent in the neighborhood rises from 0 to 1.0, the probability of welfare receipt drops from 0.22 to 0.04. The plot for ICE shows how this single index succinctly captures both effects simultaneously. When all families in a neighborhood are poor (ICE=-1.0), the predicted probability of welfare receipt is 0.38 and when all families are affluent (ICE=1.0), the predicted probability is 0.06. In other words, for every 0.1 unit increase on the ICE scale, the probability of using welfare declines by about 1.6 percentage points. Readers should recall, however, that the observed limits of the ICE index are not plus or minus one, but -0.772 and 0.885

Unlike when the proportions of poor and affluent considered alone, with ICE we are also able to see what happens when the relative number of poor and affluent are roughly balanced. In this case, the probability of welfare receipt is only .16. Moreover, by comparing the right and the left hand side of the graph, we see that the effect of concentrated neighborhood poverty is generally more powerful in raising the odds of welfare usage than concentrated affluence is in lowering it. Every 0.1 unit increase on the ICE scale in the -1 to 0 range decreases the probability of using welfare by about two percentage points, whereas a 0.1 unit increase in the 0 to +1 range decreases the probability of using welfare by only one percentage point, as the curve approaches a lower asymptote.

Employment

Table 4 shows the results of a regression model estimated to predict the probability of employment rather than welfare receipt. In this analysis, the proportion poor and the proportion affluent appear to operate in the same direction, lowering the odds that a mother is employed. Increasing the poverty rate from 0 to 1.0 reduces the odds of working by 57% ($e^{-.845} = 0.429$). The coefficient for the proportion affluent is likewise negative and increasing the proportion affluent from 0 to 1.0 lowers the odds of employment by around 23% ($e^{-.260} = 0.771$). The latter effect, however, is not significant. Yet when we enter both indicators into the model simultaneously, the effects of concentrated affluence and poverty are both significant and strongly negative.

This pattern of results is precisely opposite that achieved in the welfare models. In those, the effects of the proportion poor and the proportion affluent were significant when entered singly, but only one emerged as significant when the two indicators were entered jointly. When employment is the outcome, the proportion affluent has no significance when entered into the equation by itself, but is strongly significant when included along with the proportion poor. Given the strong association between the two indicators, it is not clear whether the latter result is substantive or some artifact of collinearity.

Use of the ICE helps us to resolve this question. When we entered this index into the equation initially we found that it did not achieve statistical significance. However, inspection of the residuals suggested the relationship was non-linear, and the addition of a squared term yielded a highly significant result.^b Thus the result of model 3 reflects a non-

^bBecause the majority of women in the sample live in neighborhoods where ICE is less than 0.4 (see Table 2), it is possible that a few outliers are driving this unique result. To test whether this is true, we dropped all cases with an ICE score greater than 0.4 and re-ran models 3 and 4. The results (available upon request) are similar to the results presented in Table 4. In model 3, the coefficients are slightly smaller and the t-value on the "proportion affluent" measure drops to -1.60. In model 4, the t-value on the ICE measure drops to -0.60; the coefficient on the squared ICE term becomes stronger, though the t-value is slightly lower ($t=-3.47$).

linearity in the relationship between employment and ICE: at both extremes—concentrated affluence or concentrated poverty—the odds of employment are reduced. As Figure 3 indicates, the maximum prospects for employment occur when the ICE measure reaches a value of around 0.20, when the balance favors affluence but not by too much.

DISCUSSION

During the 1980s and 1990s, getting poor young mothers off of welfare and into jobs became an obsessive concern of U.S. policy makers and the public, leading to a political movement that culminated in the 1996 passage of the Personal Responsibility and Work Opportunity Reconciliation Act, which set limits on the amount of time women with children could receive income transfers. In the context of the economic boom that crested in the late 1990s, this legislation proved remarkably successful in reducing the welfare rolls and raising rates of employment among poor mothers. Despite the strong incentives for work over welfare built into the law, however, not all poor mothers were able to get jobs and move off of welfare. In this analysis, we assessed the degree to which neighborhood socioeconomic composition conditioned the likelihood that poor, young mothers would work or receive welfare a year after the birth of their child.

In carrying out this research, we also explored the efficacy of a new index of neighborhood socioeconomic composition originally proposed by Massey (2001), but which has not yet received much attention in the empirical research literature. The index of concentration at the extremes, or ICE, combines the proportion poor and the proportion affluent within neighborhoods into a single index that avoids the problems of colinearity that result when the two proportions are entered jointly into regression equations. ICE conceptualizes neighborhood economic circumstances as falling along a continuum from concentrated poverty, when the index is close to -1.0 , to concentrated affluence, when it approaches a value of 1.0 . A score of zero indicates a balance between affluence and poverty within neighborhoods.

Using data from the Fragile Families and Child Well-Being Study, we confirmed the colinearity between the proportion affluent and the proportion poor and showed how the ICE index clearly delineated between the neighborhood circumstances experienced by white, black, and Hispanic unwed mothers. Three quarters of white mothers lived in a neighborhood where the relative number of affluent families equaled or exceeded the relative number of poor families; but three quarters of black mothers inhabited an area where the percentage of poor exceeded the percentage of affluent families.

We used the ICE index in lagged logistic regressions to predict economic outcomes on the Wave 2 survey, given individual and neighborhood characteristics at the time of the baseline interview, to confirm the measure's efficacy in capturing neighborhood effects while avoiding problems of colinearity. Substantively, we found that ICE was strongly and negatively associated with the likelihood of welfare use. Other things equal, the odds of welfare receipt were greatest under conditions of concentrated poverty and least under concentrated affluence. However, the concentration of poverty appeared to have a greater effect in promoting welfare use than the concentration of affluence had in deterring it.

With respect to employment, we found that ICE had a curvilinear effect. The odds of employment were greatest when the class composition was skewed slightly in the direction of affluence, with an index value of .20; but as neighborhoods moved away from this point toward either concentrated affluence or concentrated poverty, the likelihood of being employed steadily fell. Though we cannot say for certain why we observe this effect, existing theory suggests that social networks may play an important role. When the

concentration of poverty is high, the social networks of poor single mothers tend not to lead to jobs, as argued by Wilson and others. When the concentration of affluence is high, poor mothers may be isolated socially from the upper income families around them and unable to access social networks leading to jobs, or when they do have contact with upper income people, those networks do not lead to jobs that are accessible to the average mother in the Fragile Families sample.

It is worth noting here that mothers in the Fragile Families sample are disproportionately poor and unwed and, on average, live in disproportionately poor neighborhoods in large metropolitan areas. The findings reported in this paper suggest that neighborhood economic conditions are associated with welfare use and employment among this group of mothers, though it is possible that these findings are not generalizable to all mothers. Future research should continue to examine how neighborhood conditions shape and constrain mothers' and fathers' economic decision-making.

One potential limitation of this analysis, like many analyses attempting to capture neighborhood "effects," is that mothers in the Fragile Families sample are not randomly assigned to their neighborhoods. Although we control for clustering at the neighborhood-level, as well as for mothers' length of exposure to neighborhood conditions, we cannot rule out the possibility that some unobserved characteristic is responsible both for a mother's choice of neighborhood and her economic outcomes. Our results may be upwardly biased because of this and should therefore be interpreted with caution. The results are best interpreted as offering evidence of a clear association between neighborhood economic conditions and mothers' welfare use and employment, rather than proving a definitive causal relationship.

Methodologically, our results suggest that the index of concentration at the extremes offers a convenient, tractable, and valid way of measuring neighborhood economic conditions in tests of the neighborhood effects hypothesis. Of course, if theory clearly specifies that it is the proportion of poor or affluent that is responsible for conditioning some outcome of interest, then these variables might indeed be preferred to ICE. The point is that the ICE may be a useful alternative to other measures of economic structure, but only when the theoretical approach justifies employing the specific assumptions that the ICE implies about how neighborhood economic structure matters. Nonetheless, our findings offer additional substantive support for the proposition that neighborhood economic circumstances do matter in determining individual outcomes, in this case economic outcomes as measured by welfare use and gainful employment. Although hardly definitive or conclusive, we believe this analysis is promising enough to encourage additional research using ICE as a means of clarifying the nature and prevalence of neighborhood effects on human behavior.

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Figure 1.
Average proportion of poor and affluent in neighborhoods inhabited by white, Hispanic, and black mothers in the Fragile Families Study.

Figure 2.
Predicted probability of welfare receipt by proportion poor, proportion affluent, and index of concentration at the extremes.

Figure 3.
Predicted probability of employment by proportion poor, proportion affluent, and ICE.

Table 1

Means and standard deviations for outcome and control variables (N = 4,176).

Variable	Mean	S.D.
OUTCOME VARIABLES (w2)		
Currently Employed	.530	.499
Welfare	.250	.433
CONTROL VARIABLES (w1)		
Group		
White	.213	.410
Black	.480	.479
Hispanic	.266	.442
Other	.040	.194
Education		
< High School	.307	.461
High School Grad	.300	.458
Some College	.281	.449
College Grad	.112	.315
Demography		
Age (in years)	25.132	6.031
Married	.244	.430
Socioeconomic Status		
Worked in Last 3 Months	.454	.498
Below Poverty	.439	.496
Time in Neighborhood (in years)	5.473	7.541
Region		
Northeast	.316	.465
Midwest	.262	.440
South	.288	.453
West	.133	.340

Table 2

Means, boundaries and quartiles for measures of neighborhood economic conditions (N = 4,176)

Variable	White	Hispanic	Black
Proportion Poor			
Minimum	0.000	0.000	0.000
1 st Quartile Boundary	0.033	0.092	0.132
2 nd Quartile Boundary	0.072	0.175	0.230
3 rd Quartile Boundary	0.143	0.256	0.320
Maximum	0.711	0.635	0.772
Overall Mean	0.102	0.189	0.242
Proportion Affluent			
Minimum	0.000	0.000	0.000
1 st Quartile Boundary	0.133	0.084	0.069
2 nd Quartile Boundary	0.230	0.141	0.111
3 rd Quartile Boundary	0.413	0.238	0.177
Maximum	0.891	0.851	0.751
Overall Mean	0.288	0.182	0.139
Concentration at Extremes			
Minimum	-0.711	-0.635	-0.772
1 st Quartile Mean	-0.003	-0.158	-0.243
2 nd Quartile Mean	0.150	-0.039	-0.118
3 rd Quartile Mean	0.374	0.143	0.035
Maximum	0.885	0.851	0.751
Overall Mean	0.186	-0.007	-0.103

Table 3

Logistic regression predicting welfare receipt at Wave 2 of the Fragile Families and Child Well-Being Survey, given characteristics at Wave 1 (N = 4,176).

Independent Variables	Model 1	Model 2	Model 3	Model 4
NEIGHBORHOOD CONTEXT				
Proportion Poor	1.887 ** (0.318)	----	1.571 ** (0.410)	----
Proportion Affluent	----	-1.902 ** (0.440)	-0.620 (0.528)	----
Concentration at Extremes	----	----	----	-1.165 ** (0.200)
CONTROL VARIABLES^a				
Group				
White	----	----	----	----
Black	0.521 **	0.599 **	0.514 **	0.523 **
Hispanic	-0.360 *	-0.308 *	-0.363 *	-0.356 *
Other	0.124	0.164	0.124	0.130
Education				
< High School	0.150	0.136	0.145	0.140
High School Grad	----	----	----	----
Some College	-0.056	-0.078	-0.056	-0.060
College Grad	-1.217 **	-1.191 **	-1.191 **	-1.177 **
Demography				
Age	-0.028 **	-0.027 **	-0.028 **	-0.028 **
Married	-1.437 **	-1.435 **	-1.431 **	-1.428 **
Socioeconomic Status				
Worked in Last 3 Months	-0.674 **	-0.671 **	-0.669 **	-0.666 **
Below Poverty	0.957 **	0.974 **	0.952 **	0.952 **
Time in Neighborhood				
	0.009 ⁺	0.010 ⁺	0.009 ⁺	0.010 ⁺
Region				
Northeast	----	----	----	----
Midwest	-0.051	-0.087	-0.058	-0.066
South	-0.151	-0.225 *	-0.164	-0.184
West	0.384 **	0.402 **	0.416 **	0.433 **
Intercept	-1.134 **	-0.484 ⁺	-0.964 **	-0.797 **
-2 Log Pseudolikelihood	1870.4	1877.0	1869.7	1870.3
Chi Squared	696.40	666.82	697.84	688.08

**
p<.01;

*
p<.05;

⁺
p<.10;

^a All models also include variables indicating whether mother is missing on the race, education, and employment measures. None of these variables were significantly related to whether a mother used welfare at Wave 2.

Table 4

Logistic regression predicting mother's employment at Wave 2 of the Fragile Families and Child Well-Being Survey, given characteristics at Wave 1 (N = 4,176).

Independent Variables	Model 1	Model 2	Model 3	Model 4
NEIGHBORHOOD CONTEXT				
Proportion Poor	-0.845 ** (0.303)	----	-1.516 ** (0.370)	----
Proportion Affluent	----	-0.260 (0.273)	-1.066 ** (0.334)	----
Concentration at Extremes	----	----	----	0.283 + (0.163)
Concentration Squared	----	----	----	-1.586 ** (0.340)
CONTROL VARIABLES^a				
Group				
White	----	----	----	----
Black	0.740 **	0.628 **	0.705 **	0.678 **
Hispanic	0.431 **	0.357 **	0.398 **	0.369 **
Other	0.393 *	0.345 +	0.374 *	0.348 +
Education				
< High School	-0.413 **	-0.418 **	-0.421 **	-0.418 **
High School Grad	----	----	----	----
Some College	0.491 **	0.508 **	0.493 **	0.482 **
College Grad	0.353 *	0.424 **	0.452 **	0.469 **
Demography				
Age	-0.002	-0.002	0.001	0.000
Married	-0.502 **	-0.475 **	-0.481 **	-0.483 **
Socioeconomic Status				
Worked in Last 3 Months	1.483 **	1.496 **	1.493 **	1.496 **
Below Poverty	-0.514 **	-0.549 **	-0.522 **	-0.523 **
Welfare	-0.658 **	-0.684 **	-0.654 **	-0.654 **
Time in Neighborhood	-0.003	-0.003	-0.003	-0.003
Region				
Northeast	----	----	----	----
Midwest	0.077	0.090	0.053	0.074
South	0.003	0.025	-0.034	0.017
West	-0.376 **	-0.277 *	-0.313 *	-0.333 **
Intercept	-0.292	-0.361 +	0.024	-0.358 +
-2 Log Pseudolikelihood	2374.3	2377.7	2369.5	2367.7
Chi Squared	775.11	779.29	774.06	779.74

**
p<.01;

^{*}
p<.05;

⁺
p<.10

^a All models also include variables indicating whether mother is missing on the race, education, and employment measures. Whether a mother is missing employment data at Wave 1 is positively and significantly related to whether she was employed at Wave 2. Neither being missing on race nor on education was significantly related to whether a mother was employed at Wave 2.