Adolescent Neighborhood Context and Young Adult Economic Outcomes for Low-Income African Americans and Latinos

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January, 2015

Funding
This research was supported by grants from the National Institute of Child and Human Development [5R01 HD47786-2], U.S. Department of Housing and Urban Development, John T. and Catherine D. MacArthur Foundation, Annie E. Casey Foundation and W.K. Kellogg Foundation. The opinions expressed herein do not necessarily reflect those of our funders.

Declaration of Conflicting Interests
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Acknowledgments
Profs. Tama Leventhal and Xiaoming Li served as expert advisors to this project. Stefanie DeLuca, Lisa Gennetian, David Harding, Jens Ludwig, Jeff Morenoff, and seminar participants at the University of Michigan and Glasgow University contributed helpful conversations related to our analytical strategy. The authors also gratefully acknowledge the programming assistance of Dr. Albert Anderson and the research assistance of Rob Mehregan, Ana Sanroman, Lisa Stack and Sylvia Tatman-Burruss. Two anonymous referees provided invaluable suggestions on an earlier draft.

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ABSTRACT

We quantify how young adult employment and educational outcomes for low-income African Americans and Latinos relate to their adolescent neighborhood conditions. Data come from surveys of Denver Housing Authority (DHA) households who lived in public housing scattered throughout Denver County. Because DHA allocations mimic random assignment to neighborhood, this program represents a natural experiment for overcoming geographic selection bias. We use the neighborhood originally offered by DHA to instrument for neighborhood experienced during adolescence. Our control function logistic analyses found that higher percentages of foreign-born neighbors predicted higher odds of no post-secondary education and (less reliably) neither working nor attending school. Neighborhood occupational prestige predicted lower odds of young adults receiving public assistance and (less reliably) neither primarily working nor attending school. Effects differed for African Americans and Latinos. We consider potential causal processes underlying our results and suggest why they differ from those from the Moving To Opportunity demonstration.

Keywords: neighborhood effects, employment, post-secondary education, natural experiments, instrumental variables

JEL codes: I24, R29, R39

Abstract word count: 150

Text word count (including references and footnotes): 13,513

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1. Introduction

One of the most widely debated issues in contemporary social science is the degree to which neighborhood context exerts a substantial, independent influence on the life courses of children, youth, and adults. As often framed in public policy debates in the United States, the issue is the degree to which low-income, minority families living in neighborhoods that are not predominantly low-income and minority-occupied will have enhanced opportunities for economic independence and superior developmental environments for their children.

Empirical investigations of this issue have comprised a rapidly expanding literature, yet consensual conclusions have foundered on hotly contested methodological debates. For reviews, see Gephart (1997), van Kempen (1997), Friedrichs (1998), Leventhal and Brooks-Gunn (2000), Sampson, Morenoff, and Gannon-Rowley (2002), Friedrichs, Galster and Musterd (2003), Ellen and Turner (2003), Durlauf (2004), Galster (2008), Ross (2012), and van Ham et al. (2012). We aim to contribute to this literature through research on the young adult children of current and former residents of the Denver (CO) Housing Authority (DHA) who are either African American or Latino. DHA has operated since 1969 public housing units located in a wide range of neighborhoods throughout the City and County of Denver. Because the initial assignment of households on the DHA waiting list to dwellings (and, thus, to neighborhoods) mimics a random process for the most part, this program represents a natural experiment with potential for measuring neighborhood effects largely insulated from geographic selection bias. We employ as identifying instruments the neighborhood characteristics associated with the dwelling originally offered by DHA to an applicant.

In this study we analyze data from administrative sources and data we have collected from surveys with current and former DHA tenants, which provide caregiver-reported, retrospective information on a battery of young adult outcomes, family characteristics and residential histories. We focus in this paper on three labor market and post-secondary educational outcomes during young adulthood (ages 18-33 years) and the degree to which they may be shaped by neighborhood socioeconomic and demographic composition during late adolescence (ages 14-18), “adolescence” hereafter.

Our primary research question involves identifying the magnitude of context effects as operationalized by several neighborhood indicators:

> *For African Americans and Latinos who spent a considerable period during childhood living in DHA public housing, are there statistically and economically significant differences in their employment and educational outcomes during young adulthood that can be associated with differences in neighborhood socioeconomic and demographic composition to which they were exposed during adolescence?*

Our work advances this “neighborhood effects” literature in two primary ways. First, we believe for two reasons that we have overcome the influence of geographic selection by caregivers, which can confound the causal interpretation of associations between neighborhood context and resident outcomes. Our sampled young adults were (with one notable exception) quasi-randomly assigned by DHA to their initial neighborhood characteristics (as we verify below). Moreover, we employ the characteristics of the neighborhood first *offered* to applicants as an instrument to identify exogenous variation in the neighborhood contexts youths experienced during adolescence, often after their families had moved out of their original DHA dwelling. Second, we are one of the few studies to examine neighborhood impacts on young adult employment and educational outcomes for distinct samples of low-income African American and Latino young adults. In brief, we find several statistically and economically significant, ethnically heterogeneous relationships that we think can be interpreted as causal effects of neighborhood population composition on low-income, minority adolescents that manifest themselves as employment and educational outcomes as young adults.

2. How Neighbors Experienced as Adolescents Might Affect Labor Market Outcomes as Young Adults

The potential independent effect of one's neighbors may transpire through a variety of causal mechanisms that can occur either through social interactions within the neighborhood and/or by actions of others located outside of the neighborhood; for extended discussions see Jencks and Mayer (1990), Duncan, Connell and Klebanov (1997), Gephart (1997), Briggs (1997), Friedrichs (1998), Sampson (2001), Dietz (2002), Sampson, Morenoff, and Gannon-Rowley (2002), Ioannides and Loury (2004), Briggs et al. (2011), Sanbonmatsu et al. (2011), Ross (2012), and Galster (2012). The potential intra-neighborhood mechanisms include socialization and social control (norms, peers, and role models), networks, and competition. The potential extra-neighborhood mechanisms are stigmatization and institutional resources that are influenced by neighborhood composition. Because these mechanisms are well-known, we describe them only briefly:

- *Socialization:* Adolescents may develop attitudes, values, behaviors and expectations about school, health habits, illegal activities and work as a result of interactions with neighborhood peers and role models. Some types of collective socialization may reinforce normatively these developments, while other types (perhaps arising within kin or cultural groups) may operate in offsetting fashion. These attitudes, values, behaviors and expectations may persist into adulthood, thereby affecting labor and educational outcomes.

- *Networks:* Adolescents may obtain differential amounts of information about skill-enhancing and employment opportunities, depending on the degree to which they rely on local social networks and the resources these networks can access. Skills and experiences accumulated while a youth, in turn, may affect young adult economic opportunities.
- *Competition:* Adolescents may intensify their work and study efforts in a neighborhood context of greater socioeconomic competition and status-seeking. On the other hand, they may find that their efforts garner inferior evaluations because they are pitted against stronger peers. The habits, skills, experiences and external evaluations gained thereby are likely durable into young adulthood.
- *Stigmatization:* Prospective employers may evaluate young adult job applicants raised in certain locales based on the reputation of the places (a version of "statistical discrimination"), especially if they have limited prior employment history.
- *Institutional Resources:* Public and private institutions controlling important services and facilities may vary in their quantity and quality on the basis of neighborhood population composition, thereby differentially affecting youths' opportunities to develop human capital and secure labor market success as young adults. The neighborhood's population profile may be causally related to such institutional resources for financial and/or local political reasons.

While current scholarship is not decisive, it suggests that several intra- and extra-neighborhood mechanisms described above may be operative (Van Kempen, 1997; Dietz, 2002; Sampson, Morenoff and Gannon-Rowley, 2002; Ellen and Turner, 2003; Ross, 2012; Galster, 2012).

3. Measuring the Effect of Neighborhoods: Challenges and Responses in the Empirical Literature

3.1. A Conceptual Framework Illustrating the Measurement Challenges

In schematic terms, an economic outcome of interest (O) observed at time t for individual young adult i exposed to neighborhood j during t* (which we measure during adolescence) in metropolitan area k can be expressed:

$$O_{it} = \alpha + \beta[C_{it^*}] + \gamma[C_i] + \varphi[UC_{it^*}] + \partial[UC_i] + \delta[P_{it^*}] + \zeta[P_i] + \theta[N_{jt^*}] + \mu[M_{kt^*}] + [UP_{it^*}] + [UP_i] + \varepsilon \qquad [1]$$

where:

$[C_{t^*}]$ = observed characteristics of individual that can vary over time

(e.g., past trauma, number of siblings in the home)

$[C]$ = observed characteristics of individual that do not vary over time

(e.g., race, year and country of birth)

$[UC_{t^*}]$ = unobserved characteristics of individual that can vary over time

(e.g., psychological states, interpersonal relationships)

$[UC]$ = unobserved characteristics of individual that do not vary over time

(e.g., pre-natal experiences)

$[P_{t^*}]$ = observed characteristics of individual's parent(s) that can vary over time

(e.g., marital status, income)

[P] = observed characteristics of individual's parent(s) that do not vary over time (e.g., race, year and country of birth)

[UP_{t*}] = unobserved characteristics of individual's parent(s) that can vary over time (e.g., psychological states, interpersonal relationships, self-efficacy)

[UP] = unobserved characteristics of individual's parent(s) that do not vary over time (e.g., childhood experiences)

[N_{t*}] = observed characteristics of neighborhood where individual resides during adolescence (e.g., poverty rate, social capital; immigrant concentration)

[M_{t*}] = observed characteristics of metropolitan area in which individual resides during adolescence (e.g., overall unemployment rate, median wages)

ε = a random error term with statistical properties discussed below

i = individual teen or young adult

j = neighborhood

k = metropolitan area

t = year when young adult economic outcomes measured

t* = period of late adolescence, ages 14-18 here

All Greek letters represent parameters to be estimated through some sort of multivariate statistical technique (logistic regression in this paper).

The central empirical challenges facing analysts attempting to measure neighborhood effects accurately (i.e., obtain a precise, unbiased measure of θ) can been seen through the framework of equation [1]:

- What is the appropriate geographic scale(s) that defines [N]?
- What are the appropriate characteristics to measure when operationalizing [N], and does this depend on developmental stage of youth?
- What is the intensity, consistency and duration of youth i's exposure to [N]?

- Is the effect of [N] durable, or does it quickly fade if new contexts arise?
- How can we comprehensively operationalize and measure the key components of [C], [C_{t*}], [P], and [P_{t*}]?
- Given that one cannot operationalize and measure [UP] and [UP_{t*}], what can be done to minimize bias in estimated θ from these omitted variables that may be strongly associated with parents' mobility and neighborhood selection process?

No study has addressed all of these questions fully; for a more extensive discussion see Galster (2008; 2012). Most of the methodological attention has been paid, however, to the last question: geographic selection bias (Manski 1995, 2000; Duncan et al. 1997; Ginther, Haveman and Wolfe 2000; Duncan and Raudenbush 1999, Dietz 2002). The central issue is that adults likely have (unmeasured) motivations, behaviors, and skills related to their own and their children's economic prospects and move from and to certain types of neighborhoods as a consequence of these unobserved characteristics. Any observed relationship between neighborhood conditions and economic outcomes for adults or their offspring may therefore be biased because of this systematic spatial selection process, *even if all parental observable characteristics are controlled.*[1]

There have been three general empirical approaches adopted in response to the challenge of geographic selection bias. The most common approach consists of a variety of econometric techniques applied to observational (non-experimentally generated) longitudinal datasets. The two other, less common approaches use natural or experimental designs to generate quasi-random or random assignments of

[1] The direction of the bias has been the subject of debate, with Jencks and Mayer (1990) and Tienda (1991) arguing that neighborhood impacts are biased upwards, and Brooks-Gunn, Duncan, and Aber (1997) arguing the opposite. Gennetian, Ludwig, and Sanbonmatsu (2011) show that these biases can be substantial enough to seriously distort conclusions about the magnitude and direction of neighborhood effects.

households to neighborhoods. None of the three broad approaches as thus far applied have proven limitation-free and unambiguously superior, as amplified below.

3.2. Econometric Models Based on Observational Data

Most studies of neighborhood effects have used cross-sectional or longitudinal observational data collected from surveys of individual households residing in a variety of neighborhoods as a result of mundane factors associated with normal market transactions. The subset that has tried to overcome geographic selection bias employs one or more of the following:

- *Difference Models Based on Longitudinal Data:* The biases from unobserved, time-invariant individual characteristics are eliminated by measuring differences between two periods (Bolster et al., 2007; Galster et al., 2008; Musterd et al., 2008; Van Ham and Manley, 2009; Galster, Andersson, and Musterd, 2010).
- *Fixed Effect Models Based on Longitudinal Data:* Unobserved, time-invariant characteristics of individuals that may lead to both neighborhood selection and labor force outcomes are measured by individual dummy variables (Weinberg, Reagan and Yankow, 2004; Musterd, Galster and Andersson, 2012).
- *Instrumental Variables for Neighborhood Characteristics:* Proxy variables for neighborhood characteristics are devised that only vary according to attributes exogenous to the individual (Duncan et al., 1997; Crowder and South, 2003; Crowder and Teachman, 2004; Galster et al., 2007; Kling, Liebman and Katz, 2007; Ludwig et al., 2008; Cutler, Glaeser and Vigdor, 2008; Sari, 2012; Hedman and Galster, 2013; Piil Dam, 2014).

- *Residents of Same Block:* If there is little sorting on unobservables at the census block level, then networks among very localized neighbors should be free of geographic selection bias (Bayer, Ross and Topa, 2008)
- *Timing of Moves into Social Housing:* Youth moving into deprived social housing-dominated neighborhoods after an event (like a school achievement test) are likely to share common unobservable characteristics with youth moving into the same places before the event, so the short-term effect of the neighborhood can be measured by comparing the two groups' outcomes (Weinhardt, 2014)

Unfortunately, there is no empirical consensus about neighborhood effects on labor market outcomes when using one of the aforementioned econometric techniques on non-experimental, observational datasets.[2] Several studies using U.S. data (Weinberg, Reagan and Yankow, 2004; Dawkins, Shen and Sanchez, 2005; Cutler, Glaeser and Vigdor, 2008; Bayer, Ross and Topa, 2008), several using Swedish data (Galster et al., 2008; Galster, Andersson, and Musterd, 2010; Musterd, Galster and Andersson, 2012; Hedman and Galster, 2013), one Danish study (Piil Dam, 2014) and one French study (Sari, 2012) find nontrivial neighborhood effects on various adult labor market outcomes. On the other hand, the three U.K. based analyses (Bolster et al., 2007; Propper et al., 2007; van Ham and Manley 2010) find minor, if any, neighborhood effects, and instead suggest selection dominates.

There are several potential reasons for these discrepancies, including differences in: (1) nation-specific variations in neighborhood conditions and public services and social welfare policies; (2) variations in the labor market outcomes measured (employment, earnings, income from all sources); (3) how neighborhood conditions are

[2] Many other studies have investigated this issue but are not noted here because they do not attempt to overcome geographic selection bias.

operationalized (disadvantage index, poverty rates, income mix);[3] (4) timing of neighborhood effects (contemporaneous or cumulative); and (5) geographic size of the neighborhood (census tract, SAMS area, ward, bespoke area of 500 meter radius). Another basic reason is that all of the aforementioned econometric approaches have their distinctive limitations, though it is beyond the scope of this paper to present them in any detail.[4] Suffice it to note the ongoing debate is about whether individual economic outcomes are best measured as *changes* or *levels* (i.e., the relative superiority of the difference and fixed-effect models). Bolster et al. (2007), Propper et al. (2007) and van Ham and Manley (2010) all model temporal changes in outcomes as a function of initial level of neighborhood disadvantage, whereas all the studies finding strong neighborhood effects model the level of individual outcome as a function of (contemporaneous, lagged, or cumulative) levels of neighborhood indicators, except Galster et al. 2008, 2010.[5] Hedman and Galster (2013) recently demonstrated using the same dataset that substantially different conclusions are reached about how much neighborhood income mix affects individuals' incomes when variants of the first three econometric approaches above are used, even when all of the prior reasons for discrepancies are held constant. Of interest, they found a substantial neighborhood effect, regardless of method employed.

[3] Andersson et al. (2007) show with the same dataset that different neighborhood characteristics have vastly different correlations with individual's incomes.

[4] Difference models reduce statistical power by shrinking variation in the outcome variable and assume that change relationships are independent of starting conditions. Fixed-effect models assume that the individual dummies adequately capture the bundle of unobservables for all times during the panel and that the effect of this bundle remains constant during the panel. Instrumental variables must be both valid and strong. Micro-scale investigations are limited to neighborhood effect mechanisms than operate only at the small geographic scales and assume there is no residential sorting on unobservables at that scale.

[5] Note that, unlike Galster et al. 2008, 2010 and Hedman and Galster 2013, Bolster et al. (2007), Propper et al. (2007) and van Ham and Manley (2010) do not specify pure "difference" models because they use initial levels of (not changes in) neighborhood and individual characteristics to predict the change in individual outcomes. This could provide yet another methodological reason for divergent results.

3.3. Random Assignment Experiments

Many researchers advocate a random assignment experimental approach for best avoiding biases from geographic selection. Data on outcomes that can be produced by an experimental design whereby individuals or households are randomly assigned to different neighborhoods is indeed, *in theory*, the preferred method. In this regard, the Moving To Opportunity (MTO) demonstration has been touted conventionally as *the* study from which to draw conclusions about the magnitude of neighborhood effects (e.g., Gennetian, Ludwig, and Sanbonmatsu, 2011; Sanbonmatsu et al., 2011; Ludwig, 2012). The MTO research design randomly assigned public housing residents who volunteered to participate in one of three groups: (1) controls that got no voucher but stayed in public housing in disadvantaged neighborhoods; (2) recipients of rental vouchers with no restrictions; and (3) recipients of rental vouchers and relocation assistance who had to move to neighborhoods with less than 10 percent poverty rates and remain for at least a year. Most investigations of MTO data uncovered no substantial neighborhood effects on adult labor market outcomes (e.g., Ludwig, Duncan and Pinkston, 2000; Katz, Kling and Liebman, 2001; Ludwig, Ladd and Duncan, 2001; Ludwig, Duncan, and Hirschfield, 2001; Orr et al., 2003; Kling, Leibman and Katz, 2007; Ludwig et al., 2008; Sanbonmatsu et al., 2011; Ludwig, 2012). Based on this, it has been claimed that "MTO is the gold standard… [and] its results...have proven discouraging…neighborhood quality… [has] little effect on desirable and measurable outcomes…" (Smolensky, 2007: 1016).

Such a sweeping conclusion with regards to adult labor market outcomes is premature given the substantial debate over the power of MTO as a test of neighborhood effects (cf. Clampet-Lundquist and Massey, 2008; Sampson, 2008; Burdick-Will et al., 2010; Briggs, Popkin and Goering, 2010; Briggs et al., 2008, 2011; Sanbonmatsu et al. 2011; Ludwig, 2012). The debate focuses on five domains. First, although MTO randomly assigned participants to treatment groups, it neither randomly assigned characteristics of neighborhoods initially occupied by voucher-holders (except maximum poverty rates for the experimental group) nor characteristics of neighborhoods in which participants in all three groups moved subsequently. Thus, there remains considerable question about the degree to which geographic selection on unobservables persists. Second, MTO may not have created adequate duration of exposure to neighborhood conditions by any group at any location to observe much treatment effect.[6] Third, MTO overlooked the potentially long-lasting and indelible developmental effects upon adult experimental group participants who spent their childhoods in disadvantaged neighborhoods. Fourth, it appears that even experimental MTO movers rarely moved out of predominantly African American-occupied neighborhoods near those of concentrated disadvantage and achieved only modest changes in school quality and job accessibility. Thus, they may not have experienced sizable enhancements in their opportunity structures. Fifth, many participants in MTO may not have been expected to evince much labor market activity in *any* neighborhood context without additional assistance. About one-quarter of the MTO families were headed by an adult unable to work because of a disabling, chronic illness, while many more needed childcare and transportation that, likewise, were not in the package of supports offered in the experiment. Thus, despite its theoretical promise and conventional wisdom notwithstanding, MTO may not have provided definitive evidence about the potential effects on low-income families from prolonged residence in multiply-advantaged neighborhoods.

[6] Non-experimental analysis focusing on MTO families who resided for a majority of the study period in low-poverty and/or higher education neighborhoods revealed their substantially better adult employment and earnings than in the control group (Turner et al., 2012).

3.4. Quasi-Random Assignment Natural Experiments

It is sometimes possible to observe non-market interventions into households' residential locations that mimic random assignment. In the U.S., such experiments typically have been based on court-ordered, public housing racial-ethnic desegregation programs; elsewhere they have involved allocation of tenants to social housing or placement of refugees in particular locales. Rosenbaum (1991,1995), Rubinowitz and Rosenbaum (2000), Edin, Fredricksson and Åslund (2003), Åslund and Fredricksson (2009), Piil Damm (2009, 2014) and DeLuca et al. (2010) find evidence of neighborhood effects on labor market outcomes in their analyses of natural experiments in the U.S., Sweden and Denmark, but Oreopoulos (2003) and Weinhardt (2014) do not in their respective Canadian and UK examples.

Although these natural experiments may indeed provide some exogenous variation in neighborhood locations, the geographic selection problem is unlikely to be avoided completely. In most cases, program staff makes assignments and participants have some non-trivial latitude in which locations they choose, both initially and subsequent to original placement. Moreover, if the programs involve the use of rental vouchers (Gautreaux, e.g.), there will be selection in who succeeds in locating rental vacancies in qualifying locations and signing leases within the requisite period. These various potential selection processes raise the possibility that low-income families who succeed in living persistently in low-poverty neighborhoods were especially motivated, resourceful and, perhaps, courageous…traits poorly measured by researchers but likely ones that would help them and their children succeed economically irrespective of their neighborhoods. Additional empirical problems can arise if sampled subjects move quickly from their randomly assigned dwellings to another location, thereby minimizing exposure to neighborhood context and potentially confounding consequences because moving itself can be disruptive. As time passes, the randomness of location can erode, as selection of who stays in initially assigned neighborhoods and who moves away comes into play. Finally, there often are limitations in the range of neighborhoods to which study participants moved or were assigned because of where available private rental and/or subsidized housing was located, thereby reducing the ability of statistical tests to discern neighborhood effects.

3.5. Our Study's Contribution

Our study hopes to contribute to a resolution of this vital empirical issue by utilizing a natural experiment related to the Housing Authority of the City and County of Denver (DHA) that provides a variety of analytical advantages. First, as we demonstrate in online Appendix A, the DHA allocation process mimics random assignment of waiting list households to neighborhood characteristics, conditional on one or two household characteristics we can easily control. We try to circumvent any exceptions to randomness in either initial assignment or subsequent mobility behavior by employing neighborhood characteristics in the initially offered neighborhood as instruments. Second, DHA dwellings are located in a wide variety of neighborhood environments, so we get substantial variation in socioeconomic and demographic mixes experienced by our sampled adolescents. Third, residents assigned to DHA public housing typically reside there over twice as long as the average tenure observed in the voucher-based MTO, thus providing more sustained exposures to neighborhoods that are quasi-randomly assigned.

4. The Natural Experiment Involving Public Housing in Denver

In addition to its large-scale, conventional public housing developments, the DHA has operated since 1969 a program providing approximately 1,500 low-income families with opportunities to live in scattered-site, single-family and small-scale, multi-family units. These units are located in a wide range of neighborhoods throughout the congruent City and County of Denver, whereas the conventional developments are typically located in less-advantaged neighborhoods; see Figure 1.

[figure 1 about here]

From 1987 onwards, as applicants (who met certain basic eligibility criteria) came to the top of the public housing waiting list they were offered a vacant DHA dwelling (in either conventional or scattered-site programs) with the number of bedrooms appropriate for their family size and gender of children. If they did not accept this dwelling they were offered the next similarly sized one that became available (typically after a nontrivial wait). If applicants did not accept this second dwelling they dropped to the bottom of the queue, creating a wait of a year or more.

We probed the DHA assignment process and conducted a variety of statistical balancing tests; see online Appendix A for details. An illustration of one of our balancing tests, computed for households with two children when they were first offered DHA housing, is presented in Appendix Table A-1. As is conventional in balancing tests, we employed multivariate regression (stratified by family size) to estimate the statistical associations between 27 observed individual and 12 neighborhood characteristics. A quasi-random assignment would be reflected in all coefficients approximating zero and an insignificant F-test for the regression as a whole. We also devised a new method for assessing relationship between neighborhood characteristics and typically *unobserved* parental characteristics involving Monte Carlo simulation; see online Appendix A.

Our battery of tests demonstrated that the initial assignment of households to a DHA dwelling unit mimicked random assignment of households to neighborhood characteristics, with one notable exception: African American ethnicity. African Americans (with any number of children) were not proportionally distributed across all DHA developments or census tracts where such developments were located. We cannot be sure whether any systematic actions by the DHA and/or geographic self-selections by African American applicants to DHA produced this result, but the outcome was clearly inconsistent with quasi-random assignment across developments or neighborhoods. This, in turn, produced a non-random relationship between African American ethnicity and several neighborhood characteristics, as revealed in Appendix table A-1. Although our balancing tests give us confidence that adolescent neighborhood environment associated with the initially assigned DHA dwelling is exogenous to other household, caregiver and adolescent characteristics, the issue of ethnicity remains worrisome.

Whatever the degree of quasi-randomness of *initial* DHA assignment, it will undoubtedly erode over time, as some residents selectively leave their initial locations while others stay. Thus, three potential sources of geographic selection based on parent/caregiver ("caregiver" hereafter[7]) unobservables might arise after initial assignment. First, DHA households can voluntarily transfer between scattered-site and conventional public housing developments. This occurred rarely, however.[8] Second, some households may move from DHA housing into the private market while their children were ages 14-18, and their subsequent locations were likely not randomly chosen.[9] In these cases, average contextual exposures during these ages will be a combination of quasi-randomly assigned and (to some degree) selectively chosen neighborhood characteristics. To the extent that the former contexts are sufficient to

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[7] We employ the more generic term caregiver because a nontrivial number of our sample young adults were under the care of grandparents or other relatives during their adolescence.

[8] Of the post-1986 vintage tenants residing in conventional public housing developments at the time of the *Denver Child Study* interviews, 99 percent were originally placed in such; only one percent moved in from dispersed housing. Of the post-1986 vintage tenants residing in dispersed housing at that time, 94 percent were originally placed in such; six percent moved in from the conventional developments. Moreover, an unknown number of these transfers were involuntary, required by regulations after changes in family size or composition or because of DHA-planned renovations/demolitions of development sites.

[9] Our examination of DHA records revealed that reasons for exiting DHA could be positive (ineligible due to higher income, bought a home) or negative (violated lease provisions and were evicted).

rupture the correlation between unobservable caregiver characteristics affecting outcomes for their offspring and neighborhood characteristics they experienced, estimates of neighborhood effects will not be substantially biased (the assumption made in MTO-based studies). In our sample of young adults, 37 percent moved from DHA housing before age 14 and another 16 percent moved during ages 14-18. A third potential source of selection relates to those who do *not* move out of their DHA housing while their children were ages 14-18; this group represents 47 percent of our sample young adults. Perhaps their unwillingness or inability to move out of DHA is related to some unobservable caregiver characteristics that also may be connected to young adult outcomes being investigated.

A further notable feature of our natural experiment is the comparatively long exposures youth in DHA households had to their assigned neighborhoods. Our sample of households had a 6.6-year mean (six-year median) DHA residential duration, approximately twice as long as reported for the MTO experimental group (mean = 2.7 years; median = 3.3 years). Wodtke et al. (2011), Crowder and South (2011) and Moulton, Peck and Dillman (2014) stress the importance of taking into account the length of time youths are exposed to particular neighborhood contexts, lest one underestimate the true effects that neighborhoods have on them.

The use of natural experiments inevitably raises questions about the generality of results. We believe that our findings can fairly be generalized to low-income, African American and Latino families who apply for and remain on the waiting list long enough to obtain public housing. As such, it may not be fully generalizable to the population of minority families who obtain subsidized rental housing including vouchers, and may not be to the larger population of minority families who qualify for housing assistance but do not receive it. Nevertheless, it is similar to--yet considerably more general than--the populations forming the samples for the oft-cited MTO-based scholarly studies noted above because it is not limited to residents of distressed public housing who chose to participate in a long-term social research project.

5. Data Collection in Denver

5.1. Denver Child Study Survey of Current and Former DHA Households

We developed and fielded during 2006-2008 the *Denver Child Study*, a telephone survey (conducted in person for about 20 percent of sample who had no landline phones) that collected retrospective and current information about the household, adults and children. Detailed information related to multiple domains of outcomes (health, behaviors, exposure to and use of violence, education, fertility, employment) was gathered for all eligible children associated with each household. Each household's residential mobility history was obtained so it could be associated with neighborhood developmental context for children. Study eligibility criteria were: (1) presence of children in the home between ages 0 and 18 years when they moved into DHA;[10] (2) family remained in DHA housing for at least two years; and (3) family first entered DHA in 1987 or later (when DHA's current quasi-random assignment process came into operation); and (4) African American or Latino ethnicity identified.

Attempts to recruit participants for the study were made by mail and phone, in both English and Spanish when appropriate. Compensation for participation took the form of either cash or gift card. We estimate a participation rate of 56.5 percent, with most non-participation due to our inability to locate the household; less than 6 percent refused to participate once contacted. Our team successfully completed 710 interviews with the parents or primary caregivers of eligible households whose surveys subsequently passed our rigorous data verification and reliability processes. Details of

[10] The mean age of our young adult sample when entering DHA was 8.8 (standard deviation 4.2 years), ranging from ages 1-15.

sampling, participation rates, and profiles of eligible and participating households are available from the authors.

The 360 young adults analyzed in this study were (current or past) members of these 710 households who: (1) were ages 18-33 at the time of our survey; (2) were assigned by DHA to a neighborhood before age 18; and (3) had valid information for all variables used in multivariate analyses.

Our *Denver Child Study* survey collected information on caregiver and household characteristics that we employed as controls; these are listed in Table 1. Covariates included whether the caregiver was born outside of the U.S., the percentage of time during late adolescence that both parents were cohabiting, whether the primary caregiver had attained a college degree by the time the youth reached age 18, and the natural logarithm of household income during the period in which the focal youth was ages 14-18. Our survey also asked questions that permitted us to measure a series of stressful household events from which we created a "household economic stressors index" (scaled 0-5). Caregivers were asked whether and when they experienced any of the following events: a. Unemployed a month or more?; b. Have a major illness or injury?; c. Have too little money to buy enough food for your family?; d. Have your electricity, gas, or phone service cut off?; or e. Get evicted from your home? This index was incremented by one for each of the above circumstances experienced by the household while the focal youth was between ages 14-18. Previous research has indicated that acute economic shock to a household can have seriously disruptive effects on adolescents' mental and physical health than can impair longer-term economic outcomes (Oreopoulos, Page, and Stephens, 2008; Shonkoff et al., 2012; Wadsworth and Rienks, 2012).

All of the above time-varying characteristics were measured as averages for the period of the focal youth's ages 14-18 *after initial assignment by DHA*), as is the case with neighborhood characteristics presented below. We thus only "start the clock" in measuring the household and neighborhood characteristics that sampled young adults experienced during their adolescence after they begin occupying their first DHA dwelling.

We believe that this battery of characteristics adequately controls for household role modeling, youth supervision, parenting behavior, attitudes, norms, and economic resources that shape adolescents in ways that would affect their subsequent labor and educational outcomes as young adults. In preliminary models we experimented with a much wider range of covariates. Given our relatively modest sample sizes we omitted from our reported models trial covariates that never proved statistically significant.[11]

Caregiver and household characteristics for our sample young adults reflect their disadvantaged circumstances.[12] Their mean income was $13,778; 38 percent of caregivers had no high school diploma and 42 percent had only a high school diploma. Six percent of caregivers were disabled and 48 percent were not employed. Sample households faced on average 1.2 incidents of acute financial crisis while the focal child was an adolescent.

[Table 1 about here]

5.2. Characteristics of Young Adults Analyzed and Their Economic Outcomes

The *Denver Child Study* survey asked parents to supply information about all their children with whom they had lived in DHA public housing for at least one year, though in this study we analyze children who resided in DHA at least two years. In this manner we collected retrospectively detailed information about youths' residential

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[11] In preliminary models our additional caregiver controls included measures of caregiver: depressive symptomatology at time of survey, disability history, fertility and employment history, history of alcohol and drug use, attainment of high school diploma, and whether the household had health insurance. We also assessed caregiver gender, but since virtually all were female this was not included as a covariate.

[12] Some of the following characteristics are not shown in Table 1 since they were not used as controls in the final models.

histories (including living outside of the parental home), health, exposure to violence, behaviors and activities, marital/fertility histories, education and (for older children), employment and post-secondary education outcomes during early adulthood. The youth characteristics utilized as control variables and the labor market outcomes we analyzed are listed in Table 1. As in the case for caregiver characteristics, in preliminary trials we experimented with a wider range of adolescent characteristics but retained in the final models only those that ever proved statistically significant: dummy variables jointly denoting gender and ethnicity.[13] Latinas(os) comprise 24 (31) percent of the sample and African-American females (males) comprise 23 (22) percent, respectively.

In this study we analyze three non-mutually exclusive economic outcomes for these young adults: idleness, public assistance, and no post-secondary education. All outcomes are consistently defined to be undesirable outcomes to aid in comparison of results. The idleness outcome was specified on the basis of the caregiver survey respondent's (mutually exclusive) "neither" response to the question, "Since turning 18, has _[youth]_ *primarily* been working full-time, working part-time, not working but attending school, or neither working nor attending school?" The public assistance outcome was specified if the caregiver answered "yes" to the question, "Since turning 18 has _ [youth] _ ever received public assistance?" Finally, lack of post-secondary schooling was assessed by the caregiver response to the question "What was _ [youth's] _ highest grade of school completed" not being greater than 12 years. In our sample, 17 percent were idle, 14 percent had received public assistance and 87 percent had not completed any years of schooling beyond high school.

We recognize that obtaining information about young adults from their parents or

[13] Trial covariates included, age at time of survey and average number of siblings during ages 14-18. The former proved to be highly collinear (VIF well above 10) so it was omitted from final models). The young adults in our analysis range in age from 18 to 33 at time of survey (average age 22). On average, sample youth had nearly two siblings in their family during ages 14-18.

former caregivers could introduce recall errors into the data. To the extent that these errors are random they would drive the parameters of neighborhood indicators toward statistical insignificance.[14]

5.3. Characteristics of Neighborhoods Experienced during Ages 14-18

We employed the *Neighborhood Change Data Base* (a Geolytics proprietary product) for 1970-2000 census tract information because it adjusts data to account for potential changes in tract boundaries between decennial censuses. For estimates of non-census year data, we used linear interpolation or extrapolation. We gathered indicators that have been widely employed in prior research on neighborhood effects to delineate characteristics of the residential population. Data included percentages of: female-headed households, families below the poverty line, unemployed adults, households that are renter-occupiers, non-Hispanic African American population, Latino (Hispanic) population, foreign-born population and the distribution of employees by occupation.

From the occupational data, we computed an occupational prestige score based on the 1989 General Social Survey prestige score by occupation (Davis et al., 1991) weighted by the observed proportional distribution of occupations of employees in the census tract. This scale has a minimum possible score of 29.44 (when all employees are laborers) and a maximum possible score of 62.24 (when all employees are in managerial-professional occupations).

Given extremely high correlations among the first four variables above, we conducted a principal components analysis that consistently across the four 1970-2000 censuses produced a single component comprised of the roughly equally weighted sum

[14] Unfortunately, our project did not have sufficient financial resources to contact young adults in our sample and obtain information from them directly, or to consult public records for employment and public assistance information.

of census tract percentages of: poor, unemployed, renters, and female household heads. We call this our neighborhood social vulnerability index, which is scaled from a potential minimum of zero to a potential maximum of 400.

[Table 2 about here]

As can be seen from descriptive statistics in Table 2, the mean neighborhood population characteristics experienced by our sample young adults when they were adolescents differ from those of the average Denver County census tract. Our sample's neighborhoods were slightly more socially vulnerable, had higher percentages of African American and foreign-born residents, and lower occupational prestige, as would be expected given the lower-income nature of our sample. What is remarkable, however, is the wide variation of our sample's neighborhood characteristics, roughly equal or greater than across all Denver tracts. This variation is testament to DHA's program for deconcentrating scattered-site public housing and offers our study statistical power absent from most observational studies.

We see the comparative richness of our neighborhood population context measures as a strength of our study. Indeed, most of the economic geography literature on neighborhood effects employs only a single neighborhood measure, raising concerns about bias from omitted neighborhood variables of importance. The multiple neighborhood population attributes we employ raises the specter of multicollinearity, however. As shown in Table 3, most of our neighborhood indicators are indeed correlated to a statistically significant degree. Preliminary diagnostic regressions revealed, however, that the conventional Variance Inflation Factor limit (5.0) was exceeded only by the percentage of Latino residents.[15] With the exclusion of this neighborhood indicator from our analyses we can be confident that our findings were not

[15] The VIF for percentage Latino was about 8 across our outcomes.

a product of multicollinearity.

[Table 3 about here]

5.4. Creation of Analytical Databases

We spent considerable effort cleaning, reconciling and augmenting the survey data. When our audits revealed inconsistencies or omissions in the responses, we attempted to contact respondents again and seek clarifications. Information provided by respondents on their residential histories was cross-checked with residential location information contained in the DHA administrative databases and Lexis-Nexis files.

Once residential history information obtained on the survey was verified for accuracy, we geo-coded each address, using the U.S. Bureau of the Census' *American FactFinder* website utility. In cases where respondents could not recall specific addresses but only proximate cross-streets, we verified these locations using MapQuest and then identified the corresponding census tract using the aforementioned Census website showing tract boundaries. This procedure provided the census tract corresponding to each location in respondents' residential histories, which, in turn, permitted us to match each location to the aforementioned battery of neighborhood indicators for census tract neighborhoods. We were able to successfully link 92 percent of the residential locations identified by respondents.

We then transformed these data for households and neighborhoods into the format of a *child-year unit of observation*. For each child-year there are variables associated with: (1) fixed child characteristics [C], (2) fixed parental characteristics [P]; (3) temporally varying child characteristics [C_t]; (4) temporally varying parental-household characteristics [P_t]; (5) temporally varying neighborhood characteristics [N_t]; (6) temporally varying outcomes [O_t]. We aggregated information across child-years 14-

18 to obtain measures of adolescent developmental context, using only child-years subsequent to the caregivers' assignment to a neighborhood by the DHA.[16]

6. Analytical Approach and Identification Strategy

Our core model employed logistic regression (with robust standard errors to account for clustering of adolescents in the same family)[17] to estimate the odds of experiencing each of the three young adult economic outcomes. Each logit model used the aforementioned youth and caregiver covariates. Due to our worry over potential selection related to the initial assignment of African Americans on the DHA waiting list and the likely selective residential mobility and stability processes occurring since initial assignment, we generated instrumental variable (IV) estimates of our neighborhood predictors based purely on variables that are exogenous to the above selection processes and are not themselves causally related to the young adult outcomes being analyzed (other than through their relationship to adolescent neighborhood context).

Our primary instrument was the corresponding set of neighborhood characteristics associated with the neighborhood *first offered* by DHA to the applicant. Our independent evaluation of DHA records showed that 75.5 percent accepted this first offered neighborhood from DHA.[18] We can safely assume that neighborhood characteristics first offered to applicants will be uncorrelated with their unobserved

[16] It also would have been interesting to explore measures of cumulative context since birth. Unfortunately, inadequate sample sizes for child-years subsequent to random assignment to DHA precluded this exploration.

[17] We used Stata's LOGIT algorithm for estimates in this paper. We do not need to worry about clustering at the neighborhood level here because children who live in the same neighborhood are experiencing a different value of the neighborhood indicator because they are experiencing such for different years of their lives and different calendar years. Indeed, due to the scattered nature of DHA housing we have remarkably few cases where sample households shared the same neighborhood cumulated over the entire 1987-2008 period; details available from authors.

[18] Though 69.5 percent accepted the originally offered DHA dwelling another six percent accepted the second unit in the same neighborhood as the first dwelling.

characteristics that might be associated both with whether they will accept and remain in the offered neighborhood and economic outcomes for their children when they become young adults. Using similar logic we specify as additional instruments both the calendar year and the age of the focal youth when the DHA offer is first made.

The results of our first-stage OLS regressions of adolescent neighborhood context variables on the above instruments (and all the covariates in our second-stage model) are presented in Table 4. Overall results were encouraging: the R-squares ranged from. 29 to .46 and all chi-squares were highly significant. Characteristics of the neighborhood first offered by DHA proved to be strong instruments for their corresponding characteristics during our sampled young adults' adolescence. Calendar year and age of youth at time of first offer also were strong instruments for all but the percentage of African American residents during adolescence.

[Table 4 about here]

Because our second-stage models are logits, many statistical properties of the two-stage least-squares (2SLS) estimator do not appertain in a straightforward way (Wooldridge, 2002: Section 15.7.2).[19] To reduce the chances of model misspecification producing inappropriately small standard errors, we employ the "control function" approach instead of traditional 2SLS. In the control function approach the residuals of the first-stage regression are added as controls to the second stage equation (Imbens and Wooldridge, 2009). As a robustness check we also estimated the models using the conventional 2SLS procedure and replicated all the substantive results that we emphasize here.

[19] We are grateful to an anonymous reviewer for suggesting the material in this paragraph.

7. Results

7.1. Core Logit Control Function Models of Young Adult Economic Outcomes

Estimated logit model coefficients, clustered robust standard errors and corresponding odds ratios for our three young adult economic outcomes are presented in Table 5 using the control function specification. Overall, the models exhibit highly significant chi square values.

[Table 5 about here]

Consider first the results for the covariates, none of which were contrary to expectations. In general there were few significant differences among ethnic/gender groups, *ceteris paribus*. The exceptions were that African American females had 1.48-times higher odds of receiving public assistance and Latino males had over seven-time greater odds of not acquiring post-secondary education, both compared to African American males. The former is to be expected, given that women typically get custody of children born outside of marriage and thus qualify for Temporary Assistance to Needy Families. Those with an immigrant caregiver had 80 percent lower odds and those whose caregiver had attained a college degree had 81 percent lower odds of not acquiring any education beyond high school. If they experienced one more instance of acute economic stress in the household during adolescence, young adults had 41 percent lower odds of acquiring education after high school. Finally, young adults from a household having a higher income during their adolescence were substantially less likely to have: (1) primarily been idle since turning age 18 and (2) not acquired post-secondary education. These results support the conventional wisdom that the norms, aspirations, role modeling and, especially, resources within a household crucially shape the economic prospects of young minority adults from low-income families.

Of more relevance to our research question are results for the neighborhood context variables. Overall, Wald chi-square tests allowed us to reject the null hypothesis that all coefficients of the four neighborhood variables equaled zero for each outcome, at $p<.05$ or better; this remained true for all but the public assistance outcome even when a Bonferroni correction was applied.[20] There were five coefficients of neighborhood variables that were significant at $p<.05$ or better. A Bonferroni test of the null hypothesis that all 12 coefficients across the three outcomes jointly equaled zero was rejected at p<.0001.[21] We conclude that the pattern of several highly significant neighborhood coefficients was unlikely to have occurred by chance. Thus, we have confidence in discussing the individually statistically significant results, focusing on those that remain significant even after Bonferroni correction: percentage foreign born and percentage African American in the no post-secondary schooling equation and occupational prestige in the public assistance equation.

Neighborhood nativity proved predictive of both young adult post-secondary education and idleness outcomes, though much more statistically significantly so in the former. A one point higher average percentage of foreign-born residents in the adolescent neighborhood was associated with 17 percent greater odds of not completing any years of formal education after high school and 6.5 percent greater odds of being neither primarily employed nor in school. Neighborhood occupational prestige proved

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[20] In this Bonferroni test the null is rejected if any of the three chi-square-statistics associated with the three estimated equations is significant with a p value less than the selected alpha level divided by the number of equations (tests). In our case, the critical value was .05/3 = .017, a threshold that was met by the chi-square values associated with all but the public assistance outcome. We thank a referee for the suggestion of this test.

[21] In this Bonferroni test the null is rejected if any t-statistics associated with the N coefficients estimated across equations is significant with a p value less than the selected alpha level divided by the number of coefficients (tests). In our case, the critical value was .05/12 = .0042, a threshold that was met by the p value associated with three coefficients: percentage of foreign born residents and percentage African American in the no post-secondary education equation and occupational prestige in the public assistance equation. The probability of observing any coefficient this different from zero as the maximum of 12 estimates was less than .0001 under the null of zero for the 12 estimated parameters. For an analogous application in a neighborhood effects test, see Kling, Liebman and Katz (2007). We thank a referee for the suggestion of this test.

predictive of both young adult receipt of public assistance and idleness outcomes, though more statistically significantly so in the former. Those experiencing a one unit-higher average occupational prestige score during adolescence were estimated to have substantially lower odds of receiving public assistance (by 32 percent) and being primarily idle (by 17 percent). Finally, the neighborhood's African American composition predicted young adult post-secondary educational attainment. A young adult who spent adolescence in a neighborhood with a one point higher average percentage of African American residents exhibited eight (8) percent greater odds of completing no post-secondary schooling.

7.2. Logit Control Function Models of Ethnic Heterogeneity of Neighborhood Effects

We probed the potential heterogeneity of effects on the basis of ethnicity by re-estimating our models on separate strata of African American and Latino young adults; results are presented in Table 6. There is strong theoretical justification for expecting such heterogeneity. African American and Latino caregivers likely adopt different techniques for motivating, monitoring, disciplining and shielding adolescents in ways that may produce differing vulnerabilities to neighborhood influences (Crowder and South, 2003; Galster and Santiago, 2006; Galster, 2012).

[Table 6 about here]

Wald chi-square tests allowed us to reject the null hypothesis that all coefficients of the four neighborhood variables equaled zero for each outcome, at $p<.05$ or better for both Latino and African American strata. However, after an analogous Bonferroni correction as above was applied, this only remained true for the post-secondary education and idleness outcomes for Latinos and the public assistance outcome for African Americans. There were four coefficients of neighborhood variables that were significant at $p<.05$ or better for Latinos but only two for African Americans. Bonferroni tests of the null hypotheses that all neighborhood variable coefficients jointly equaled zero for Latinos or for African Americans (separately or jointly) were rejected.[22] We conclude that the pattern of several highly significant neighborhood coefficients was unlikely to have occurred by chance in either stratum, suggesting neighborhood effects for both groups.

The primary message from Table 6 is one of heterogeneity in apparent neighborhood effects. In particular, African American adolescents would appear to be influenced to a stronger degree by the occupational prestige of their neighbors than Latinos, at least for the public assistance outcome. By contrast, the relationship appeared stronger for Latinos in the case of their relationship between percentage of immigrant neighbors and no post-secondary education.

7.3 Robustness Checks with Neighborhood Crime Indicators

It might be argued that it is not the demographic and socioeconomic characteristics of neighbors that ultimately matters *per se* for adolescent development but rather how these characteristics relate to neighborhood safety. Prior literature finds that exposure to violence has a variety of harmful psychological and behavioral impacts including higher probabilities of PTSD, anxiety, depression and psychological dysfunction as well has higher rates of illicit drug use and delinquency, all of which may inhibit economic and educational performance as young adults (Menard, 2002; Finkelhor, et. al, 2009; Foster and Brooks-Gunn, 2009).

As a test of the robustness of our results to this challenge, we augmented our core model with two neighborhood indicators measuring violent and property crime rates, both standardized per thousand population. The source of this information was

[22] The Bonferroni-adjusted *p* value thresholds were met by the *p* values associated with two coefficients: (1) percentage of foreign born residents in the Latino no post-secondary education equation and (2) occupational prestige in the African American public assistance equation.

the Denver-based Piton Foundation's *Neighborhood Facts Database,* which provided small area-based, annually measured information culled from Denver police administrative databases that are not provided by the Census. These crime data are aggregated by the Piton Foundation to 77 named areas consisting of two census tracts, on average, and thus are measured at a larger spatial scale than our census-based data. We do not employ these indicators in our core model because they are limited to locations within the City and County of Denver and they are only available since 1992. As result, their use produces shrinkage of our sample size by about ten percent. Our trials with instrumented and control function models (available from the first author) revealed that these two crime indicators added no explanatory power and did not substantively alter the statistically significant findings reported in Table 5. This suggests to us that it is processes associated with the socioeconomic and demographic composition of the neighborhood, not implicit correlations with crime, that are driving our findings. We expand this discussion below.

8. Discussion

In overview, the results reported above demonstrate that several aspects of neighborhood population context experienced by adolescents from low-income African American and Latino families are statistically (even after using conservative Bonferroni corrections) and substantively important predictors of several young adult outcomes of interest to economic geographers. Below we organize the discussion around thematic categories of neighborhood context and then contrast our findings to those from MTO.

8.1. Neighborhood Nativity and Ethnic Composition

We have found that higher percentages of foreign-born residents were associated with higher odds of not acquiring postsecondary education, both for the full sample and especially Latinos. We think that this may be explained through recourse to the fact that a majority of foreign-born residents of Denver are also Latino (primarily of Mexican-origin), especially in neighborhoods where our surveyed Latino adolescents resided. We posit that it is the limited experience with post-secondary education that such Latino immigrant neighbors possess that is at root. Such inexperience may well lead to a dearth of powerful own-group role models, and/or fruitful information networks (perhaps associated with limited English-speaking skills) in the community vis-à-vis higher educational opportunities. All of these factors may impede the educational attainment of low-income (especially) Latino adolescent neighbors. We do not think that this result can be attributed to weak normative supports for higher education in immigrant-dense communities, given that surveyed youth with immigrant caregivers evinced greater odds of undertaking some post-secondary education.

Our result that higher percentages of African American neighbors were associated with higher odds of not completing any post-secondary education (especially for African American adolescents) can be explained with analogous reasoning as above. Concentrated African American neighborhoods may be associated with the same information-poor networks and limited role models regarding higher education as previously described for immigrant-dense neighborhoods. These causal mechanisms would persuasively explain why it is low-income African American adolescents that seem more strongly influenced, since within-group role modeling and networking would be more efficacious for them compared to Latinos.

We also caution, however, against interpreting the previous result as a definitive measure of causal effect. Recall that the original DHA dwelling allocation process violated quasi-randomness in the case of distributing African American applicants across neighborhoods delineated by their ethnic composition (see Appendix A). Thus, what we observed may be explained potentially by selection effects.

8.2 Neighborhood Occupational Prestige

Residing during adolescence in a neighborhood with higher occupational prestige workers was strongly associated with reduced chances of receiving welfare as a young adult, especially for African Americans. We believe that this result can be understood from the perspective of local networks, norms and role models. Neighborhoods that surround their low-income, minority adolescents with higher prestige workers more likely expose them to norms and role models that encourage independence, education and work, networks of information about these productive opportunities and the “soft skills” required to take full advantage of them. At the same time this positive role modeling and/or stronger community collective efficacy (Sampson, Raudenbush and Earls, 1997) associated with higher-prestige neighborhoods may discourage risky behaviors by these adolescents (such as drinking, using drugs, unprotected sex, crime) that might impede their future economic success as young adults.

Our results are also consistent with those produced by qualitative research on both the MTO and Gautreaux programs. Some low-income, minority MTO caregivers in low-poverty (presumably, higher prestige than originally occupied) neighborhoods stressed during interviews the value of adult role modeling of work habits for their teens and the “soft skill” enhancement that improved their employment prospects (Briggs, Popkin and Goering, 2010; Briggs et al, 2011). This mimics results from Gautreaux that showed how positive role models and higher economic expectations in advantaged neighborhoods positively influenced lower-income African American teen in-movers (Rosenbaum, 1991; Rosenbaum, DeLuca and Tuck, 2005).

We are unsure why these occupational prestige results are exhibited more strongly for African Americans in our sample. Supplementary tests (available from the first author) indicate that it is primarily females that are generating this result, as they are the prime recipients of public assistance. We speculate that since low-income, African-American females are more likely to stay in high school and less likely to have involvements with the criminal justice system, they may be more prone to see themselves as having more potential for upward mobility through labor force participation than young males. They thus may be more attuned to potential neighborhood role models and find collective norms regarding education and employment more influential. Given that the vast majority of our sample comes from female-headed households, it also may be that female adolescents are more effectively steered by their mothers to higher-status women in the neighborhood who potentially may serve as role models.

8.3. Comparing Our Results to those from MTO

Given its salience, the findings from the MTO analysis should be compared to those from the current study, though we acknowledge at the outset that precise comparisons are impossible due to fundamental differences in study purpose, measurement and analytical design. In the domain of young adult educational and employment outcomes we find some strong neighborhood effects whereas MTO found essentially none. We think that there are several reasons for this difference.

First, there are differences in the samples of low-income families investigated. In MTO all families were selected from dilapidated public housing located in extremely disadvantaged neighborhoods; in our study all families were selected from well-maintained public housing located in a wide variety of neighborhoods. If indeed there are durable damaging effects on children from living in concentrated disadvantage (Sampson, Sharkey and Raudenbush, 2008; Hedman et al., 2013), the MTO design reduces the potentially salutary impacts of subsequent, superior environments.

Second, the neighborhood "treatments" differ substantially. MTO offers uncontrolled, "bundled" treatments: a disadvantaged public housing development neighborhood; a non-public housing development neighborhood; and a census tract with less than 10 percent poverty (at least for a year), followed by whatever neighborhood bundles of attributes voucher holders subsequently choose.[23] Our study disentangles variations in exposure to several distinct attributes comprising the neighborhood population bundle. In may be that MTO focused on a less important neighborhood attribute: poverty. Note that our social vulnerability index (involving poverty and other highly correlated attributes) never proved a strong predictor of our outcomes. Moreover, if particular neighborhoods contain two attributes that generate countervailing effects on a given outcome (such as percentages of African American or foreign-born residents vs. higher occupational status residents) they may be cancelled out inadvertantly by the MTO design.

Third, treatment exposure (both in terms of consistency and duration) is lower in MTO because many control families were forced to move as their public housing was demolished and the two experimental groups used vouchers. By contrast, our sample spent a considerable time in public housing and did not participate in the voucher program. As a consequence, our sample of households had a 6.6-year mean (six-year median) DHA residential duration, approximately twice as long as reported for the MTO experimental group (mean = 2.7 years; median = 3.3 years). Theory suggests that several neighborhood effect mechanisms require a minimum duration of exposure before their impact will occur (Galster, 2012). Furthermore, even if the *average* context is the same during a period of a child's life, two places well-above and below average

[23] MTO disaggregates aspects of the neighborhood context in measuring baseline and final conditions and assesses cross-group differences in these differences, but never tests whether these different neighborhood components relate differently to child and youth outcomes.

may yield very different consequences for a child than the one that was consistently experienced. For instance, two cases having the same mean but different variances of the given neighborhood indicator may not create identical "exposure" to that indicator; longer-duration exposure thus creates an important difference in the consistency of exposure.

Fourth, though many measures in MTO rely on self-reporting and parental reporting (as do we), MTO also has some outcomes measured with administrative records (we have none). We see no reason why reliance on caregiver recall would bias measured neighborhood effects upward, however. On the contrary, we think such errors would drive findings toward non-significance.

Fifth, adolescents were living in quite different metropolitan contexts in MTO and our study. MTO sites were Boston, New York, Baltimore, Chicago and Los Angeles. Our study was conducted in Denver, which has many demographic and geographic features that make it unlike any of the MTO sites. Denver is a newer, faster growing (except for Los Angeles) metropolitan area. It has no concentrated, impoverished, heavily disinvested African American ghetto like the MTO sites. In 2000 African Americans represented only 11 percent of the overall population, whereas Latinos comprised 32 percent. Ethnic residential segregation during the period of our study was lower than national averages for both Latinos and African Americans (Iceland, Weinberg and Steinmetz, 2002). Denver has a unified city-county government, and thus has much less geographic variation in local fiscal capacity and public services than in the other sites. All of these distinctions imply that Denver offers quite different opportunity structures, local cultural norms, public expectations and institutional supports than the MTO sites. They may play themselves out in complicated ways that manifest themselves in greater power for neighborhood effects.

9. Conclusions, Caveats, and Future Directions

Social scientists have struggled with the daunting methodological challenges of obtaining unbiased estimates of the impact of neighborhood experienced while an adolescent on young adult educational and employment outcomes, due primarily to parental geographic selection based on unobservables that may also influence outcomes for their children. An innovative public housing program instituted by the Denver Housing Authority provides a unique opportunity to explore this issue because the DHA mimics a random assignment to neighborhood for families with children who apply for DHA housing, with the possible exception of African American applicants. Specifically, for a sample of young African American and Latino adults who lived in DHA housing we investigated how neighborhood resident characteristics experienced during late adolescence (age 14-18) predicted education and employment outcomes during ages 18-33. Our logistic control function analyses found that greater adolescent exposure to foreign-born neighbors was associated with several inferior outcomes greater adolescent exposure to higher occupational prestige neighbors was associated with several superior outcomes. These results were heterogeneous on the basis of ethnicity, however.

Though we could not measure directly the causal processes that could link low-income, minority adolescents' neighborhood context with their later economic outcomes, we think our results are consistent with several, not-mutually exclusive possibilities. These include collective norms, role modeling, and local networks affecting the acquisition of information about educational and employment opportunities. The apparent importance for young adults of contexts experienced while they were adolescents speaks to the temporal durability of these neighborhood effects during the late adolescent developmental stage.

We believe that our findings offer a provocative counter to the conventional wisdom embodied in the well-known results from MTO-based studies that found no substantial neighborhood effects on young adult economic outcomes. We provided many reasons of why our results might differ from those of MTO, suggesting that null findings of MTO are not generalizable.

We urge circumspection in interpreting our results, inasmuch as our models make several simplifying assumptions about neighborhood effects (Galster, 2012). First, we measure *average* neighborhood conditions experienced during adolescence, thus potentially obscuring more extreme conditions that might be present during a few years that have particularly potent impacts. Second, we do not investigate the potentially durable impacts of early childhood neighborhood environments (Wheaton and Clarke, 2003; Sampson, Sharkey, and Raudenbush, 2008). Third, we have not employed neighborhood indicators related to environmental pollution, institutional resources, secondary schools or job access, due to insufficient information covering the wide span of calendar years when our sample was aged 14-18. Our focus here on population characteristics should not be interpreted as ruling out other potential indicators of neighborhood context that may produce powerful effects. Fourth, because of modest sample size we employ only a parsimonious set of control variables related to characteristics of sample adolescents and their households and caregivers. Fifth, our results appertain only to a single metropolitan area, the idiosyncrasies of which we have previously noted. Thus our findings may not be generalizable to larger metropolitan areas with more concentrated, disadvantaged African American ghettos and Latino barrios that may be reinforced by distressed public housing estates. Finally, our neighborhood measures do not provide direct measures of the causal processes that may link the distal environment to individual behaviors and outcomes. Though we have attempted above to draw reasonable inferences from our statistics about these processes, they are hardly definitive. In a similar vein, we have not attempted to probe here potential pathways in which neighborhood context may affect adolescents' personal exposure to violence, anti- and pro-social behaviors, nutrition, health, fertility and secondary schooling, which might reveal more about underlying causal mechanisms between the relationships we have observed between adolescent neighborhood and young adult economic outcomes. These latter shortcomings will be addressed in future work.

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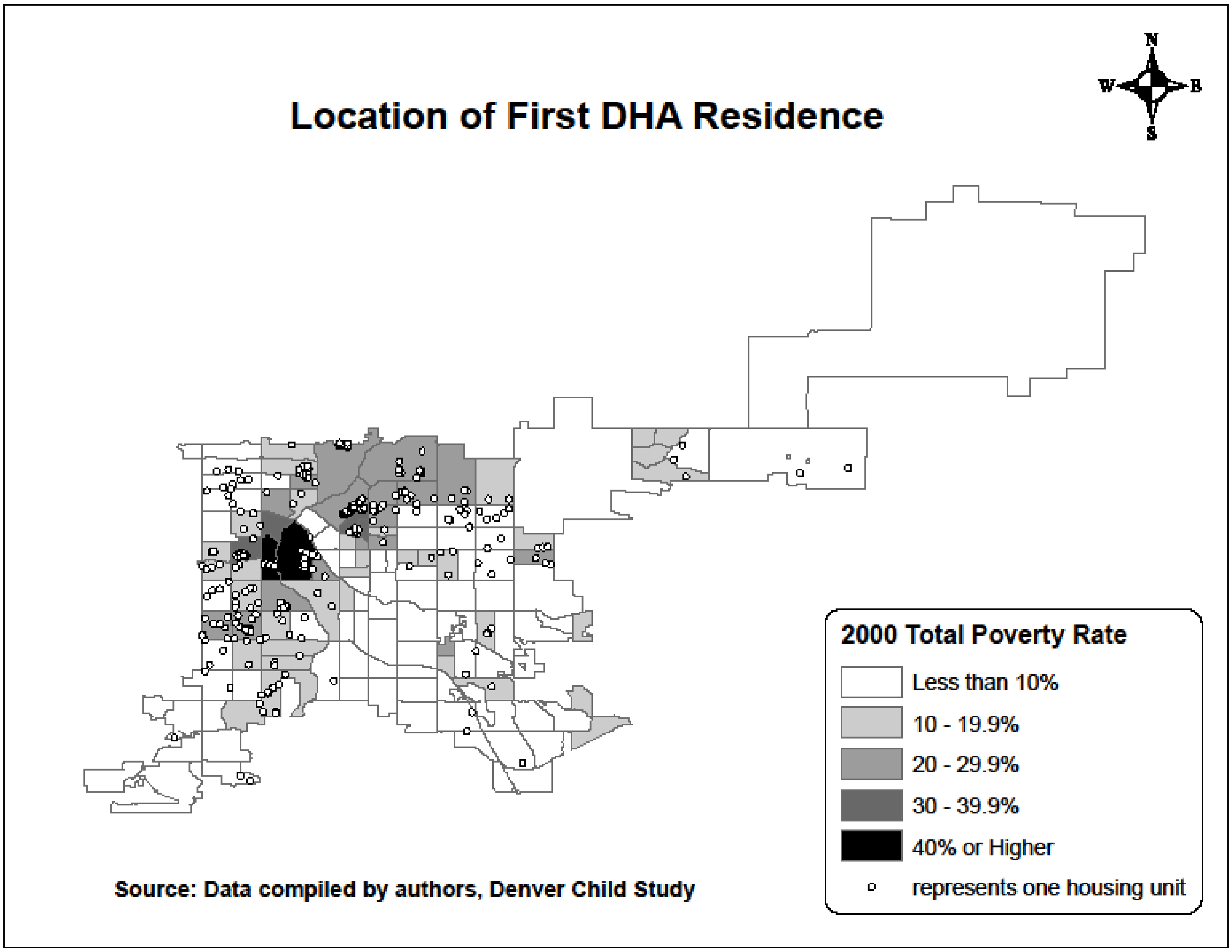
Figure 1: Locations of Sample Household's First Denver Housing Authority Dwelling



Sources: Denver Housing Authority, Piton Foundation *Neighborhood Facts* database, map by authors

Table 1.
Descriptive Statistics of Sampled Families, Adolescents and their Economic Outcomes as Young Adults

	Obs	Mean	Std. Dev.	Min	Max
Outcomes Since Turning Age 18					
Primarily Idle (not Working or in School)	353	0.17	0.38	0	1
Received Public Assistance	354	0.14	0.35	0	1
No Post-Secondary Education	360	0.87	0.33	0	1
Covariates					
Race/Ethnicity of Young Adult (omitted=African American Male)					
Latina Female	360	0.24	0.43	0	1
Latino Male	360	0.31	0.46	0	1
African American Female	360	0.23	0.42	0	1
Caregiver is Immigrant	360	0.13	0.34	0	1
Caregiver has College Degree^	360	0.10	0.30	0	1
Proportion Residing with Two Parents^^	360	0.37	0.45	0	1
Household Income ($ 1,000s)^^	360	13.78	13.29	0	66.35
Household Economic Economic Stressor Scale^^	360	1.16	1.11	0	5

N = 360 young adults
^ By time focal youth age 18
^^ Average during ages 14-18 (or from age at DHA assignment if GT 14)

Table 2. Descriptive Statistics for Neighborhood Population Indicators, Sample and Denver Overall

	Sample Young Adults (N=360)^				Denver Census Tracts,^^ 2000 (N=134)			
Neighborhood Indicator	**Mean**	**Std. Dev.**	**Min**	**Max**	**Mean**	**Std. Dev.**	**Min**	**Max**
Social Vulnerability Index	114.15	48.29	26.72	283.28	96.73	42.01	16.26	275.30
Percent African American	17.01	20.01	0.30	99.55	11.54	16.66	0.13	75.26
Occupational Prestige Score	37.09	3.11	31.77	47.30	41.01	4.37	32.33	50.14
Percent Foreign Born	21.28	10.62	0.26	68.60	15.83	10.76	2.96	49.87

^ Average during ages 14-18 (or from age at DHA assingment if GT 14)

^^ Denver City and County are congruent

Table 3. Pairwise Correlations between Neighborhood Population Indicators

	1	2	3	4	5
1. Social Vulnerability Index	1.00				
2. Percent African American	0.13*	1.00			
3. Occupational Prestige Score	-0.39*	-0.10*	1.00		
4. Percent Foreign Born	-0.03	-0.18*	-0.40*	1.00	
5. Percent Latino	0.28*	-0.45*	-0.60*	0.69*	1.00

* p < .05

Table 4. First-Stage OLS Regressions

	Dependent Variables: Neighborhood Conditions During Adolescence							
Exogenous Predictors	Social Vulnerability		% African American		Occupational Prestige		% Foreign Born	
Covariates in 2nd Stage								
Race/Ethnicity of Young Adult (omitted=African American Male)								
Latina Female	6.39	(7.14)	-18.5***	(3.38)	-1.02	(0.52)	2.77	(1.84)
Latino Male	19.9**	(7.45)	-16.1***	(3.43)	-1.50**	(0.52)	0.81	(1.72)
African American Female	1.54	(6.70)	-1.52	(3.51)	-0.35	(0.48)	-0.040	(1.60)
Caregiver is Immigrant	9.54	(8.83)	3.78	(2.37)	-0.15	(0.47)	0.13	(1.65)
Caregiver has College Degree^	0.10	(8.81)	2.71	(4.16)	0.49	(0.73)	-0.35	(2.07)
Proportion Residing with Two Parents^^	1.28	(7.09)	2.50	(1.94)	0.41	(0.37)	-2.22	(1.35)
Natural Log of Household Income^^	-0.57	(0.68)	0.042	(0.22)	-0.012	(0.039)	-0.074	(0.15)
Household Economic Stressor Scale^^	0.43	(3.33)	3.21***	(0.96)	-0.34*	(0.17)	0.29	(0.73)
Timing of DHA First Offer								
offer1988	4.74	(12.1)	6.49	(4.83)	-0.74	(0.72)	-0.41	(2.68)
offer1989	25.7	(16.4)	1.32	(3.71)	-2.28**	(0.80)	0.26	(3.12)
offer1990	20.7	(10.9)	-2.07	(4.03)	-1.33	(0.74)	0.43	(2.71)
offer1991	-2.29	(13.4)	3.23	(3.97)	-1.16	(0.78)	0.58	(3.25)
offer1992	-1.49	(13.5)	3.22	(4.37)	-1.25	(0.87)	-2.55	(2.56)
offer1993	7.34	(16.8)	-5.75	(4.67)	0.85	(1.49)	-5.46	(4.81)
offer1994	25.8	(13.3)	-4.08	(4.52)	-0.99	(1.27)	-0.88	(2.62)
offer1995	22.8	(14.0)	0.13	(4.79)	-2.17*	(0.91)	-2.50	(3.31)
offer1996	23.8	(12.7)	-4.98	(3.18)	-1.82*	(0.92)	-1.06	(3.00)
offer1997	44.5**	(14.9)	2.57	(5.20)	-4.00***	(0.85)	-2.69	(2.52)
offer1998	29.8	(15.5)	-6.95	(4.23)	-3.03***	(0.88)	-2.47	(3.69)
offer1999	13.4	(14.7)	-5.05	(4.54)	-2.13	(1.08)	-5.41	(3.41)
offer2000	27.8*	(11.4)	-1.26	(4.98)	-2.94**	(0.95)	-4.90	(2.97)
offer2001-2003	39.6**	(12.1)	-6.81	(4.62)	-3.26**	(1.09)	-3.53	(3.20)
Youth Age at Time of Offer	1.93*	(0.76)	-0.034	(0.30)	-0.19***	(0.052)	-0.89***	(0.18)
Neighborhood of First Offer								
Social Vulnerability Index	0.47***	(0.071)						
Percent African American			36.8***	(7.88)				
Occupational Prestige Score					0.50***	(0.075)		
Percent Foreign Born							63.2***	(10.7)
Constant	-25.1	(25.2)	16.2	(8.39)	26.4***	(2.66)	33.4***	(5.45)
r-sq	0.34		0.46		0.35		0.29	
Standard errors in parentheses; * p<.05; ** p<.01; *** p<.001; note all chi-sq significant at p < 1.0e-10								
^ By time focal youth age 18								
^^ Average during ages 14-18 (or from age at DHA assignment if GT 14)								

Table 5. Second-Stage Logistic Control Function Regression Results

	No Post-Secondary Education			Received Public Assistance			Primarily Idle		
Covariates	coeffic.	std. error	odds ratio	coeffic.	std. error	odds ratio	coeffic.	std. error	odds ratio
Race/Ethnicity of Young Adult (omitted=African American Male)									
Latina Female	1.65	(0.87)	5.207	-0.045	(0.82)	0.956	-0.42	(0.74)	0.657
Latino Male	2.09*	(0.95)	8.085	-1.60	(0.84)	0.202	-0.14	(0.70)	0.869
African American Female	-0.21	(0.47)	0.811	0.91*	(0.41)	2.484	-0.53	(0.55)	0.589
Caregiver is Immigrant	-1.63**	(0.52)	0.196	-0.95	(1.21)	0.387	-0.45	(0.53)	0.638
Caregiver has College Degree^	-2.13***	(0.47)	0.119	-0.94	(0.88)	0.391	-0.56	(0.65)	0.571
Proportion Residing with Two Parents^^	0.085	(0.49)	1.089	-1.18*	(0.51)	0.307	0.27	(0.35)	1.310
Natural Log of Household Income^^	-0.15*	(0.060)	0.860	0.00054	(0.051)	1.001	-0.077*	(0.034)	0.926
Household Economic Stressor Scale^^	-0.53**	(0.19)	0.589	-0.070	(0.18)	0.932	-0.26	(0.23)	0.771
Neighborhood Characteristics									
Social Vulnerability Index	-0.012	(0.0080)	0.988	-0.011	(0.0086)	0.989	0.0031	(0.0074)	1.003
Occupational Prestige Score	-0.019	(0.14)	0.981	-0.39**	(0.13)	0.684	-0.23*	(0.098)	0.827
Percent Foreign Born	0.16***	(0.043)	1.174	-0.025	(0.037)	0.975	0.063*	(0.029)	1.065
Percent African American	0.077**	(0.026)	1.080	-0.034	(0.024)	0.967	0.0080	(0.025)	1.008
Control Function Variables									
Social Vulnerability Index Residual	0.0029	(0.0091)	1.003	0.015	(0.011)	1.015	-0.0093	(0.0085)	0.991
Occupational Prestige Score Residual	-0.16	(0.17)	0.852	0.33*	(0.16)	1.391	0.026	(0.11)	1.026
Percent Foreign Born Residual	-0.17**	(0.052)	0.844	-0.016	(0.053)	0.984	-0.11**	(0.037)	0.896
Percent African American Residual	-0.072*	(0.033)	0.931	0.026	(0.027)	1.026	-0.023	(0.028)	0.977
Constant	0.90	(6.50)		15.6**	(5.52)		5.98	(4.32)	
Observations	362			356			355		
N_family clusters	210			207			207		
Chi-sq [coeffs. of all vars.=0]	76.8***			42.7***			37.6***		
Chi-sq [coeffs. of neigh'd. vars.=0]	18.4***			10.7*			12.6**		
log pseudolikelihood	-107.1			-121.6			-146.6		
r-sq_pseudo	0.22			0.18			0.10		

Clustered standard errors in parentheses; * p<.05; ** p<.01; *** p<.001

^ By time focal youth age 18

^^ Average during ages 14-18 (or from age at DHA assignment if GT 14)

Table 6. Second-Stage Logistic Control Function Regression Results for Neighborhood Indicators, by Ethnic Group

	Latino Young Adults						African American Young Adults					
	No Post-Sec. Educ.		Public Assistance		Primarily Idle		No Post-Sec. Educ.		Public Assistance		Primarily Idle	
Neighborhood Characteristics	coeffic.	std. error	coeffic.	std. error	coeffic.	std. error	coeffic.	std. error	coeffic.	std. error	coeffic.	std. error
Social Vulnerability Index	-0.0076	(0.012)	0.028*	(0.013)	0.012	(0.0092)	-0.0047	(0.017)	-0.024	(0.013)	-0.031	(0.017)
Occupational Prestige Score	-0.26	(0.23)	-0.12	(0.17)	-0.18	(0.18)	0.31	(0.25)	-0.67***	(0.20)	-0.22	(0.13)
Percent Foreign Born	0.32***	(0.063)	-0.080	(0.051)	0.081*	(0.037)	0.11	(0.077)	-0.0024	(0.058)	0.049	(0.059)
Percent African American	0.14	(0.071)	-0.28*	(0.14)	0.016	(0.051)	0.088*	(0.035)	-0.022	(0.033)	-0.023	(0.037)
Constant	9.87	(9.52)	1.67	(6.43)	2.33	(7.13)	-12.3	(11.8)	26.6***	(8.02)	11.0	(6.80)
Observations	200		159^		196		154^		157		159	
N_family clusters	118		97		116		86		90		91	
Chi-sq [coeffs. of all vars.=0]	59.0***		33.1**		26.5**		43.9***		38.4***		19.4	
Chi-sq [coeffs. of neigh'd. vars.=0]	28.3***		9.6*		12.7**		9.8*		13.4**		9.8*	
log pseudolikelihood	-42.4		-53.0		-84.4		-52.2		-52.0		-53.4	
r-sq_pseudo	0.32		0.23		0.12		0.27		0.28		0.19	

Clustered standard errors in parentheses; * p<.05; ** p<.01; *** p<.001

^ Immigrant predicted outcome perfectly; 40 (4) obs. dropped for Latinos (African Americans)

Note: all regressions include covariates and control function variables as shown in Table 5

Appendix Table A-1. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 2 Children

	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0200	-0.167	0.601	-0.583	0.604	-12.13	0.086	0.0833	0.722	0.583	0.536	0.167	0.825	-0.417	0.700	-0.417	0.714
3.0100	3.29e-15	1.000	-0.667	0.620	-12.00	0.154	3.44e-15	1.000	-1.59e-15	1.000	-0.167	0.854	0.167	0.897	-0.333	0.806
4.0100	3.00e-15	1.000	-3.72e-14	1.000	0.900	0.936	3.01e-15	1.000	-8.42e-16	1.000	-0.500	0.680	0.500	0.773	-1	0.584
4.0200	2.96e-15	1.000	-3.71e-14	1.000	0.500	0.965	1.000	**0.008**	1.000	0.509	0.500	0.680	0.500	0.773	2.87e-15	1.000
5.0200	2.89e-15	1.000	-0.500	0.734	-7.750	0.400	3.39e-15	1.000	-1.27e-15	1.000	-2.82e-14	1.000	-0.500	0.724	-0.500	0.737
7.0100	-0.500	0.231	-0.500	0.734	-9.500	0.303	0.500	0.104	-8.29e-16	1.000	-2.83e-14	1.000	-0.500	0.724	-0.500	0.737
7.0200	-0.267	0.396	-0.733	0.508	-13.97	**0.045**	0.133	0.564	0.533	0.566	0.167	0.823	-0.300	0.778	-0.267	0.812
8.0000	-0.250	0.419	-0.400	0.714	-8.889	0.194	0.100	0.660	0.600	0.513	0.200	0.785	-0.100	0.924	-0.250	0.821
9.0200	-0.500	0.231	-0.500	0.734	-18.50	**0.046**	3.40e-15	1.000	0.500	0.686	0.500	0.613	-0.500	0.724	3.14e-15	1.000
9.0300	-0.500	0.167	-0.500	0.695	-10.37	0.194	3.38e-15	1.000	0.500	0.640	-2.82e-14	1.000	0.250	0.838	-0.250	0.846
9.0500	-1.000	0.051	-3.64e-14	1.000	-1.250	0.912	3.41e-15	1.000	-1.48e-15	1.000	0.500	0.680	-0.500	0.773	-1.000	0.584
10.0000	3.04e-15	1.000	-0.250	0.845	-6.625	0.406	0.500	0.061	0.750	0.483	0.250	0.770	-0.500	0.683	-0.250	0.846
11.0100	3.71e-15	1.000	-0.429	0.717	-8.190	0.268	0.286	0.246	0.286	0.773	0.0714	0.928	0.0714	0.950	-0.143	0.905
11.0200	-0.500	0.231	-0.500	0.734	-9.425	0.306	3.37e-15	1.000	-1.16e-15	1.000	0.500	0.613	0.500	0.724	2.93e-15	1.000
13.0100	-1.000	0.051	-1.000	0.579	-18.50	0.102	3.13e-15	1.000	-6.77e-16	1.000	0.500	0.680	-0.500	0.773	2.98e-15	1.000
13.0200	-1.000	0.051	-1.000	0.579	-18.50	0.102	3.07e-15	1.000	1.000	0.509	0.500	0.680	-0.500	0.773	2.91e-15	1.000
14.0200	-0.250	0.489	-0.250	0.845	-4.398	0.581	3.12e-15	1.000	0.250	0.815	-0.250	0.770	0.250	0.838	-0.250	0.846
14.0300	-1.000	0.051	-3.61e-14	1.000	8.500	0.451	3.10e-15	1.000	-6.14e-16	1.000	-0.500	0.680	0.500	0.773	-1.000	0.584
15.0000	2.81e-15	1.000	-5.000	**0.001**	-11.75	0.203	0.500	0.104	1.000	0.418	-2.82e-14	1.000	-5.000	**0.001**	-5.000	**0.001**
16.0000	-0.278	0.372	-1.056	0.337	-10.96	0.111	0.111	0.627	-2.09e-15	1.000	0.222	0.763	-0.722	0.494	-0.556	0.617
18.0000	3.47e-15	1.000	-0.667	0.620	-12.50	0.138	3.38e-15	1.000	0.333	0.767	-0.167	0.854	-0.167	0.897	-0.333	0.806
19.0000	-0.277	0.359	-0.574	0.589	-6.530	0.326	0.0638	0.773	0.383	0.668	0.160	0.823	-0.223	0.827	-0.532	0.621
21.0000	2.93e-15	1.000	-1.000	0.497	-18.50	**0.046**	3.35e-15	1.000	0.500	0.686	-2.81e-14	1.000	-0.500	0.724	-0.500	0.737
23.0000	2.90e-15	1.000	-3.71e-14	1.000	-5.075	0.524	3.16e-15	1.000	0.500	0.640	0.250	0.770	0.250	0.838	-0.250	0.846
24.0300	-0.111	0.733	-0.333	0.772	-7.989	0.268	0.333	0.165	-0.667	0.490	0.0556	0.943	-0.167	0.880	-0.333	0.775
31.0100	2.96e-15	1.000	-3.70e-14	1.000	6.500	0.564	3.11e-15	1.000	1.000	0.509	0.500	0.680	0.500	0.773	2.91e-15	1.000
35.0000	-0.143	0.669	-0.286	0.809	-2.757	0.709	3.56e-15	1.000	0.286	0.773	0.0714	0.928	0.0714	0.950	-0.286	0.811
36.0100	2.96e-15	1.000	-0.500	0.734	-7.000	0.447	3.10e-15	1.000	0.500	0.686	0.500	0.613	-0.500	0.724	-0.500	0.737
36.0200	2.97e-15	1.000	-0.500	0.734	-8.000	0.385	0.500	0.104	0.500	0.686	-2.83e-14	1.000	0.500	0.724	-0.500	0.737
36.0300	4.07e-15	1.000	-3.57e-14	1.000	0.333	0.968	3.30e-15	1.000	-2.52e-15	1.000	-3.167	**0.001**	-0.500	0.699	-0.333	0.806
37.0300	2.96e-15	1.000	-3.72e-14	1.000	1.100	0.922	3.07e-15	1.000	-9.69e-16	1.000	-0.500	0.680	0.500	0.773	2.89e-15	1.000
41.0100	3.94e-15	1.000	-3.57e-14	1.000	-3.390	0.687	0.333	0.235	0.333	0.767	0.167	0.854	-0.167	0.897	-0.333	0.806
41.0200	2.91e-15	1.000	-3.68e-14	1.000	6.000	0.595	3.27e-15	1.000	-1.07e-15	1.000	-0.500	0.680	0.500	0.773	2.94e-15	1.000
41.0300	4.14e-15	1.000	-3.56e-14	1.000	2.833	0.736	3.26e-15	1.000	0.333	0.767	0.167	0.854	0.167	0.897	2.60e-15	1.000
41.0400	2.95e-15	1.000	-3.69e-14	1.000	1.500	0.894	3.21e-15	1.000	-1.04e-15	1.000	0.500	0.680	0.500	0.773	2.93e-15	1.000
42.0100	2.94e-15	1.000	-3.71e-14	1.000	0.500	0.965	3.14e-15	1.000	-1.03e-15	1.000	0.500	0.680	0.500	0.773	2.87e-15	1.000
42.0200	-1.000	0.051	-3.70e-14	1.000	-0.480	0.966	3.10e-15	1.000	-9.44e-16	1.000	0.500	0.680	-0.500	0.773	-1	0.584
43.0100	-1.000	0.051	-3.72e-14	1.000	-1.250	0.912	1.000	**0.008**	1.000	0.509	-0.500	0.680	-0.500	0.773	2.88e-15	1.000
43.0400	-0.500	0.231	-0.500	0.734	-8.250	0.370	0.500	0.104	0.500	0.686	0.500	0.613	0.500	0.724	2.85e-15	1.000
44.0300	-0.500	0.231	-3.71e-14	1.000	2.375	0.796	3.08e-15	1.000	-9.93e-16	1.000	-0.500	0.613	-0.500	0.724	-1.000	0.502
44.0400	2.96e-15	1.000	-3.72e-14	1.000	-0.500	0.965	1.000	**0.008**	1.000	0.509	0.500	0.680	0.500	0.773	2.91e-15	1.000
45.0100	3.38e-15	1.000	-0.143	0.904	-3.214	0.663	3.68e-15	1.000	0.286	0.773	-0.0714	0.928	-0.357	0.753	-0.143	0.905
45.0200	-0.308	0.332	-0.462	0.680	-10.67	0.128	0.154	0.509	0.538	0.566	0.192	0.798	-0.346	0.748	-0.0769	0.946
46.0200	2.97e-15	1.000	-1.000	0.579	-18.50	0.102	3.15e-15	1.000	1.000	0.509	0.500	0.680	-0.500	0.773	3.06e-15	1.000
47.0000	2.94e-15	1.000	-3.62e-14	1.000	-18.50	0.102	1.000	**0.008**	-7.03e-16	1.000	-0.500	0.680	-0.500	0.773	2.88e-15	1.000
48.0200	2.97e-15	1.000	-1.000	0.579	-18.50	0.102	1.000	**0.008**	-7.14e-16	1.000	0.500	0.680	0.500	0.773	3.24e-15	1.000
50.0100	-0.500	0.231	-0.500	0.734	-7.500	0.415	3.31e-15	1.000	0.500	0.686	-2.85e-14	1.000	-0.500	0.724	-1.000	0.502
54.0000	-0.250	0.448	-2.750	**0.019**	-9.937	0.173	3.24e-15	1.000	-0.750	0.443	-1.250	0.111	-2.500	**0.026**	-2.500	**0.035**
55.0300	-0.200	0.567	-0.200	0.871	-4.400	0.568	3.22e-15	1.000	0.200	0.846	0.1000	0.904	0.1000	0.933	-0.200	0.873
68.0900	2.91e-15	1.000	-1.000	0.579	-18.50	0.102	3.29e-15	1.000	-1.19e-15	1.000	-0.500	0.680	-0.500	0.773	2.87e-15	1.000
69.0100	2.96e-15	1.000	-3.59e-14	1.000	9.500	0.400	3.14e-15	1.000	-6.83e-16	1.000	0.500	0.680	-0.500	0.773	3.21e-15	1.000
83.0300	2.93e-15	1.000	-1.000	0.579	-18.50	0.102	3.13e-15	1.000	-1.07e-15	1.000	0.500	0.680	0.500	0.773	3.17e-15	1.000
85.3400	2.92e-15	1.000	-3.61e-14	1.000	1.500	0.894	3.20e-15	1.000	-7.22e-16	1.000	-0.500	0.680	0.500	0.773	3.21e-15	1.000
Observations	244		244		244		244		244		244		244		244	
F-Test	0.932		0.861		1.267		1.555		0.396		1.068		1.022		0.763	
p value	0.610		0.735		0.127		0.0168		1.000		0.365		0.445		0.876	
Pseudo R^2	0.206		0.194		0.261		0.302		0.0994		0.230		0.222		0.175	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																
bold = p<.05																

Appendix Table A-1. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 2 Children (cont.)

	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0200	0.0833	0.939	-1.833	0.242	-1.250	0.536	-0.333	0.844	0.500	0.182	3.417	0.562	-0.333	0.971	0.333	0.234	-0.417	**0.029**
3.0100	0.667	0.610	0.500	0.789	-0.833	0.730	0.500	0.805	0.667	0.137	6.333	0.369	-2.500	0.822	0.167	0.618	-0.167	0.462
4.0100	1.000	0.568	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.52e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
4.0200	1.000	0.568	-0.500	0.842	-10.50	**0.001**	0.500	0.854	1.000	0.096	12.00	0.205	12.50	0.403	0.500	0.265	-0.500	0.101
5.0200	-4.02e-14	1.000	-0.500	0.807	1.05e-13	1.000	-1.500	0.499	-2.33e-14	1.000	-2.66e-13	1.000	-9.500	0.436	0.500	0.173	-0.500	**0.045**
7.0100	-4.11e-14	1.000	0.500	0.807	1.500	0.570	-0.500	0.822	0.500	0.308	-2.52e-13	1.000	10.000	0.412	-1.06e-14	1.000	2.22e-14	1.000
7.0200	0.600	0.578	0.0333	0.983	-1.433	0.471	-1.567	0.349	0.400	0.278	7.800	0.181	3.367	0.714	0.433	0.117	-0.433	**0.021**
8.0000	0.450	0.672	-0.200	0.895	-2.350	0.231	-1.500	0.363	0.300	0.409	5.050	0.378	3.600	0.691	0.300	0.270	-0.400	**0.031**
9.0200	-4.04e-14	1.000	0.500	0.807	-5.500	**0.038**	-1.000	0.652	0.500	0.308	10.000	0.196	4.000	0.743	0.500	0.173	-0.500	**0.045**
9.0300	0.250	0.840	-0.250	0.888	-3.750	0.102	-0.500	0.795	-2.35e-14	1.000	-2.66e-13	1.000	10.50	0.321	-9.60e-15	1.000	-0.250	0.245
9.0500	-4.02e-14	1.000	-0.500	0.842	0.500	0.877	-1.500	0.581	1.000	0.096	-2.70e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
10.0000	-4.13e-14	1.000	-0.500	0.778	0.500	0.827	2.000	0.299	1.000	**0.019**	11.25	0.094	-2.750	0.795	0.500	0.116	-0.500	**0.021**
11.0100	0.286	0.803	-0.214	0.896	-0.929	0.661	-2.643	0.139	0.571	0.146	-2.93e-13	1.000	8.786	0.369	0.214	0.466	-0.214	0.282
11.0200	0.500	0.727	-1.49e-15	1.000	-1.500	0.570	-1.500	0.499	-2.36e-14	1.000	-2.64e-13	1.000	9.500	0.436	-9.66e-15	1.000	2.32e-14	1.000
13.0100	-4.06e-14	1.000	-0.500	0.842	-0.500	0.877	-0.500	0.854	-2.39e-14	1.000	-2.52e-13	1.000	14.50	0.332	0.500	0.265	-0.500	0.101
13.0200	-4.07e-14	1.000	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	19.00	**0.046**	-9.500	0.525	0.500	0.265	-0.500	0.101
14.0200	0.250	0.840	0.250	0.888	-0.250	0.913	0.250	0.897	0.250	0.556	15.50	**0.021**	-9.500	0.369	0.500	0.116	-0.500	**0.021**
14.0300	-4.06e-14	1.000	0.500	0.842	-0.500	0.877	-0.500	0.854	-2.38e-14	1.000	-2.52e-13	1.000	9.500	0.525	0.500	0.265	-0.500	0.101
15.0000	-4.500	**0.002**	-5.000	**0.015**	1.05e-13	1.000	-1.000	0.652	0.500	0.308	5.500	0.476	-9.500	0.436	0.500	0.173	-0.500	**0.045**
16.0000	-0.167	0.876	-1.167	0.445	-0.111	0.955	-0.222	0.893	0.333	0.361	5.222	0.365	2.000	0.826	0.389	0.155	-0.444	**0.017**
18.0000	0.333	0.799	-3.500	0.062	-1.167	0.629	-1.500	0.459	0.667	0.137	5.333	0.450	-9.500	0.394	0.500	0.136	-0.500	**0.028**
19.0000	0.191	0.853	-0.372	0.801	-0.968	0.612	-1.266	0.430	0.468	0.186	3.830	0.492	2.351	0.789	0.351	0.185	-0.479	**0.008**
21.0000	0.500	0.727	-4.500	**0.029**	-0.500	0.850	-1.500	0.499	-2.35e-14	1.000	7.500	0.332	-9.500	0.436	0.500	0.173	-0.500	**0.045**
23.0000	0.250	0.840	-0.250	0.888	-0.500	0.827	-0.500	0.795	0.250	0.556	-2.57e-13	1.000	9.000	0.394	0.500	0.116	-0.500	**0.021**
24.0300	0.444	0.691	-0.278	0.862	-1.278	0.536	-0.389	0.823	0.333	0.384	1.889	0.754	4.389	0.645	0.389	0.175	-0.500	**0.011**
31.0100	1.000	0.568	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.55e-13	1.000	15.50	0.300	0.500	0.265	-0.500	0.101
35.0000	0.429	0.709	0.214	0.896	-2.071	0.329	-2.214	0.214	0.429	0.276	3.143	0.612	5.214	0.594	0.0714	0.808	-0.357	0.074
36.0100	1.000	0.485	-1.46e-15	1.000	1.000	0.705	-1.000	0.652	1.000	**0.042**	-2.56e-13	1.000	4.000	0.743	0.500	0.173	-0.500	**0.045**
36.0200	-4.06e-14	1.000	-0.500	0.807	2.000	0.449	2.000	0.368	1.000	**0.042**	-2.62e-13	1.000	2.000	0.870	0.500	0.173	-0.500	**0.045**
36.0300	-4.11e-14	1.000	-0.500	0.789	-1.167	0.629	-1.167	0.565	0.333	0.456	11.33	0.109	-9.500	0.394	0.500	0.136	-0.500	**0.028**
37.0300	-4.11e-14	1.000	0.500	0.842	2.500	0.440	-1.500	0.581	-2.31e-14	1.000	-2.53e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
41.0100	0.333	0.799	0.167	0.929	-1.500	0.534	-1.500	0.459	0.667	0.137	4.667	0.508	3.833	0.731	0.500	0.136	-0.500	**0.028**
41.0200	1.000	0.568	-0.500	0.842	-1.500	0.643	4.500	0.099	1.000	0.096	-2.62e-13	1.000	9.500	0.525	0.500	0.265	-0.500	0.101
41.0300	1.000	0.444	0.167	0.929	-1.500	0.534	-1.500	0.459	0.667	0.137	-2.88e-13	1.000	1.167	0.917	0.167	0.618	-0.500	**0.028**
41.0400	1.000	0.568	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.58e-13	1.000	4.500	0.763	0.500	0.265	-0.500	0.101
42.0100	1.000	0.568	-0.500	0.842	-10.50	**0.001**	-1.500	0.581	1.000	0.096	-2.56e-13	1.000	7.500	0.616	0.500	0.265	-0.500	0.101
42.0200	-4.09e-14	1.000	-0.500	0.842	-1.500	0.643	-1.500	0.581	-2.31e-14	1.000	-2.55e-13	1.000	-9.500	0.525	-0.500	0.265	0.500	0.101
43.0100	-4.10e-14	1.000	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.54e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
43.0400	0.500	0.727	-1.48e-15	1.000	0.500	0.850	-5.500	**0.014**	1.000	**0.042**	-2.54e-13	1.000	9.500	0.436	0.500	0.173	-0.500	**0.045**
44.0300	0.500	0.727	-1.33e-15	1.000	0.500	0.850	-1.000	0.652	-2.32e-14	1.000	-2.54e-13	1.000	-9.500	0.436	0.500	0.173	-0.500	**0.045**
44.0400	1.000	0.568	0.500	0.842	-1.500	0.643	4.500	0.099	-2.31e-14	1.000	-2.53e-13	1.000	17.50	0.242	0.500	0.265	-0.500	0.101
45.0100	0.429	0.709	0.0714	0.965	-0.929	0.661	-1.214	0.495	0.143	0.716	-2.90e-13	1.000	2.071	0.832	0.500	0.090	-0.500	**0.013**
45.0200	0.308	0.777	-0.192	0.902	-1.500	0.455	-0.962	0.569	0.385	0.302	5.385	0.359	5.654	0.542	0.269	0.333	-0.500	**0.009**
46.0200	-4.05e-14	1.000	-0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	19.00*	0.046	-9.500	0.525	0.500	0.265	-0.500	0.101
47.0000	-4.07e-14	1.000	0.500	0.842	-10.50	**0.001**	0.500	0.854	-2.38e-14	1.000	-2.51e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
48.0200	1.000	0.568	0.500	0.842	2.500	0.440	-0.500	0.854	-2.39e-14	1.000	-2.53e-13	1.000	6.500	0.663	0.500	0.265	-0.500	0.101
50.0100	0.500	0.727	-1.05e-15	1.000	-1.000	0.705	-1.000	0.652	-2.38e-14	1.000	-2.68e-13	1.000	-9.500	0.436	0.500	0.173	-0.500	**0.045**
54.0000	-1.875	0.099	-2.375	0.143	1.05e-13	1.000	-1.000	0.569	0.500	0.197	7.000	0.252	3.500	0.717	0.375	0.196	-0.375	0.057
55.0300	0.800	0.504	0.1000	0.953	-1.300	0.556	-1.300	0.484	0.400	0.329	3.600	0.577	0.300	0.977	0.300	0.328	-0.500	**0.017**
68.0900	-4.07e-14	1.000	-0.500	0.842	-0.500	0.877	-0.500	0.854	1.000	0.096	16.00	0.092	-9.500	0.525	0.500	0.265	-0.500	0.101
69.0100	-4.06e-14	1.000	0.500	0.842	-1.500	0.643	-1.500	0.581	-2.39e-14	1.000	-2.52e-13	1.000	3.500	0.815	0.500	0.265	-0.500	0.101
83.0300	1.000	0.568	-0.500	0.842	-0.500	0.877	-0.500	0.854	1.000	0.096	-2.56e-13	1.000	3.500	0.815	0.500	0.265	-0.500	0.101
85.3400	-4.05e-14	1.000	0.500	0.842	0.500	0.877	-0.500	0.854	-2.39e-14	1.000	11.00	0.245	-9.500	0.525	0.500	0.265	-0.500	0.101
Observations	244		244		244		244		244		244		244		244		244	
F-Test	0.923		0.908		1.389		0.952		1.127		0.977		0.847		0.649		1.016	
p value	0.625		0.653		0.0571		0.572		0.277		0.525		0.758		0.967		0.456	
Pseudo R^2	0.205		0.202		0.279		0.210		0.239		0.214		0.191		0.153		0.221	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																		
bold = p<.05																		

Appendix Table A-1. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 2 Children (cont.)

	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0200	1.27e-14	1.000	-5.417	0.433	0.250	0.427	0.167	0.631	-1.93e-14	1.000	-0.333	0.373	7.750	0.271	-0.750	0.789	-1.750	0.561
3.0100	1.30e-14	1.000	-2.167	0.793	3.63e-15	1.000	0.333	0.421	0.333	0.230	0.167	0.709	10.33	0.220	1.667	0.619	1.000	0.781
4.0100	1.42e-14	1.000	-11.50	0.300	3.48e-15	1.000	3.52e-15	1.000	-1.97e-14	1.000	-0.500	0.404	5.000	0.658	-12.00	**0.008**	-6.000	0.214
4.0200	1.42e-14	1.000	0.500	0.964	1.000	**0.049**	**1.000**	0.073	-1.97e-14	1.000	-0.500	0.404	3.000	0.790	-3.000	0.505	-1.000	0.836
5.0200	1.34e-14	1.000	-6.000	0.507	4.86e-15	1.000	1.97e-15	1.000	-1.94e-14	1.000	0.500	0.307	-3.000	0.745	0.500	0.892	-0.500	0.899
7.0100	1.43e-14	1.000	4.000	0.658	3.55e-15	1.000	3.54e-15	1.000	-1.97e-14	1.000	-0.500	0.307	14.50	0.117	0.500	0.892	-0.500	0.899
7.0200	0.133	0.616	-4.167	0.541	0.133	0.667	0.400	0.242	0.133	0.560	0.0333	0.928	11.27	0.105	-1.800	0.515	0.933	0.753
8.0000	0.100	0.703	-8.650	0.198	0.250	0.413	0.250	0.458	0.1000	0.657	-0.200	0.582	6.150	0.368	-0.600	0.825	-1.050	0.719
9.0200	0.500	0.158	-10.50	0.246	4.95e-15	1.000	1.52e-15	1.000	-1.94e-14	1.000	-1.09e-15	1.000	4.500	0.625	9.63e-14	1.000	-1.500	0.703
9.0300	0.250	0.414	-1.000	0.898	4.77e-15	1.000	0.500	0.204	0.250	0.343	-1.29e-15	1.000	-3.750	0.638	1.000	0.753	0.250	0.942
9.0500	1.000	**0.022**	3.500	0.752	4.46e-15	1.000	1.61e-15	1.000	1.000	**0.008**	-0.500	0.404	27.00	**0.017**	-1.000	0.824	-4.000	0.407
10.0000	1.45e-14	1.000	-4.750	0.544	0.500	0.162	0.250	0.525	0.250	0.343	-0.250	0.555	14.25	0.075	-4.250	0.182	-1.000	0.769
11.0100	1.27e-14	1.000	-4.357	0.548	0.143	0.665	0.143	0.695	0.143	0.558	0.0714	0.856	1.429	0.847	0.857	0.771	1.143	0.717
11.0200	0.500	0.158	3.500	0.699	5.09e-15	1.000	0.500	0.271	-1.94e-14	1.000	-1.28e-15	1.000	12.50	0.176	1.500	0.683	-4.500	0.254
13.0100	1.43e-14	1.000	11.50	0.300	6.17e-15	1.000	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	8.000	0.478	1.000	0.824	-2.000	0.678
13.0200	1.44e-14	1.000	-15.50	0.163	6.10e-15	1.000	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	7.000	0.535	1.000	0.824	-1.000	0.836
14.0200	0.500	0.103	5.750	0.463	0.250	0.484	0.750	0.057	-1.98e-14	1.000	-1.46e-15	1.000	1.250	0.875	0.750	0.813	-4.250	0.214
14.0300	1.000	**0.022**	-2.500	0.821	1.000	**0.049**	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	1.000	0.929	2.000	0.656	-3.000	0.534
15.0000	1.30e-14	1.000	-5.500	0.543	1.000	**0.016**	1.23e-15	1.000	-1.92e-14	1.000	-0.500	0.307	4.000	0.664	-4.000	0.276	-3.500	0.375
16.0000	0.222	0.399	-5.611	0.405	0.833	**0.007**	0.389	0.251	0.111	0.624	-0.278	0.447	4.167	0.544	-0.611	0.823	-1.778	0.545
18.0000	1.30e-14	1.000	-3.500	0.672	2.69e-15	1.000	5.80e-16	1.000	0.333	0.230	-0.167	0.709	2.333	0.781	-1.667	0.619	-0.333	0.926
19.0000	0.149	0.559	-5.585	0.393	0.553	0.064	0.213	0.516	0.0851	0.698	-0.138	0.695	5.915	0.374	-1.489	0.574	-0.851	0.765
21.0000	1.35e-14	1.000	3.000	0.740	4.92e-15	1.000	0.500	0.271	-1.94e-14	1.000	-0.500	0.307	4.500	0.625	-2.500	0.496	3.000	0.446
23.0000	1.39e-14	1.000	-2.000	0.798	1.000	**0.006**	0.750	0.057	-1.96e-14	1.000	0.500	0.239	8.250	0.302	-0.250	0.937	-5.750	0.093
24.0300	1.23e-14	1.000	-0.389	0.956	0.778	**0.017**	0.222	0.531	0.111	0.640	-0.0556	0.885	5.889	0.414	0.222	0.938	-3.333	0.280
31.0100	1.41e-14	1.000	-2.500	0.821	1.000	**0.049**	3.21e-15	1.000	1.000	**0.008**	-0.500	0.404	-3.000	0.790	2.000	0.656	1.000	0.836
35.0000	0.143	0.614	-4.000	0.588	0.714	**0.032**	0.143	0.695	0.143	0.558	0.0714	0.856	4.143	0.575	-3.286	0.265	-5.286	0.095
36.0100	0.500	0.158	2.500	0.782	1.000	**0.016**	0.500	0.271	0.500	0.101	-0.500	0.307	7.500	0.416	-6.000	0.103	-3.500	0.375
36.0200	1.37e-14	1.000	-3.500	0.699	1.000	**0.016**	0.500	0.271	0.500	0.101	-0.500	0.307	14.00	0.130	-5.000	0.174	-3.000	0.446
36.0300	1.27e-14	1.000	-2.500	0.762	0.667	0.077	1.000*	0.017	-1.94e-14	1.000	-0.167	0.709	3.000	0.721	-0.667	0.842	-3.000	0.404
37.0300	1.42e-14	1.000	12.50	0.260	1.000	**0.049**	3.30e-15	1.000	-1.97e-14	1.000	0.500	0.404	14.00	0.215	-2.000	0.656	-2.000	0.678
41.0100	1.26e-14	1.000	-4.833	0.558	1.000	**0.008**	0.333	0.421	0.333	0.230	0.167	0.709	3.333	0.692	-2.667	0.426	-1.667	0.643
41.0200	1.37e-14	1.000	-3.500	0.752	1.000	**0.049**	2.52e-15	1.000	-1.95e-14	1.000	0.500	0.404	-3.000	0.790	1.000	0.824	-4.000	0.407
41.0300	0.333	0.302	-1.500	0.856	1.000	**0.008**	0.667	0.109	-1.94e-14	1.000	-0.167	0.709	-1.667	0.843	-0.667	0.842	-1.000	0.781
41.0400	1.39e-14	1.000	1.500	0.892	1.000	**0.049**	2.87e-15	1.000	1.000	**0.008**	0.500	0.404	25.00	**0.028**	-3.000	0.505	-4.000	0.407
42.0100	1.40e-14	1.000	1.500	0.892	1.000	**0.049**	3.13e-15	1.000	-1.96e-14	1.000	0.500	0.404	8.000	0.478	2.000	0.656	-1.000	0.836
42.0200	1.000	**0.022**	0.500	0.964	3.37e-15	1.000	3.23e-15	1.000	-1.96e-14	1.000	0.500	0.404	-5.000	0.658	2.000	0.656	-12.00	**0.014**
43.0100	1.41e-14	1.000	-9.500	0.391	1.000	**0.049**	3.31e-15	1.000	-1.96e-14	1.000	-0.500	0.404	11.00	0.330	-8.000	0.076	-5.000	0.301
43.0400	0.500	0.158	-10.00	0.269	1.000	**0.016**	3.36e-15	1.000	-1.97e-14	1.000	-0.500	0.307	4.500	0.625	-2.000	0.586	3.000	0.446
44.0300	1.41e-14	1.000	-0.500	0.956	1.000	**0.016**	0.500	0.271	-1.96e-14	1.000	-1.17e-15	1.000	-2.000	0.828	2.000	0.586	2.000	0.612
44.0400	1.42e-14	1.000	4.500	0.685	1.000	**0.049**	3.43e-15	1.000	-1.97e-14	1.000	-0.500	0.404	-4.000	0.723	-3.000	0.505	1.15e-13	1.000
45.0100	0.143	0.614	1.214	0.867	3.94e-15	1.000	0.143	0.695	0.286	0.242	0.0714	0.856	2.429	0.742	-1.000	0.734	0.571	0.856
45.0200	0.154	0.566	-5.577	0.417	0.538	0.086	0.308	0.372	-1.92e-14	1.000	-0.192	0.605	4.923	0.482	-1.308	0.639	-0.923	0.758
46.0200	1.42e-14	1.000	2.500	0.821	5.87e-15	1.000	3.50e-15	1.000	-1.97e-14	1.000	0.500	0.404	13.00	0.250	-6.000	0.183	-5.000	0.301
47.0000	1.43e-14	1.000	7.500	0.498	6.03e-15	1.000	3.65e-15	1.000	-1.98e-14	1.000	-0.500	0.404	4.000	0.723	9.45e-14	1.000	2.000	0.678
48.0200	1.000	**0.022**	12.50	0.260	5.90e-15	1.000	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	5.000	0.658	2.000	0.656	1.11e-13	1.000
50.0100	0.500	0.158	-1.500	0.868	1.000	**0.016**	0.500	0.271	-1.95e-14	1.000	-1.06e-15	1.000	-3.500	0.704	1.500	0.683	1.000	0.800
54.0000	0.250	0.371	-1.750	0.807	5.70e-15	1.000	0.375	0.296	-1.96e-14	1.000	-0.125	0.747	5.375	0.461	-0.250	0.931	-0.750	0.810
55.0300	0.400	0.177	3.700	0.625	0.200	0.562	0.200	0.598	-1.93e-14	1.000	-0.100	0.807	12.40	0.109	-2.400	0.435	-2.000	0.544
68.0900	1.37e-14	1.000	-8.500	0.443	1.000	**0.049**	2.57e-15	1.000	-1.95e-14	1.000	-0.500	0.404	15.00	0.185	2.000	0.656	-1.000	0.836
69.0100	1.43e-14	1.000	-7.500	0.498	1.000	**0.049**	3.64e-15	1.000	1.000	**0.008**	0.500	0.404	-1.000	0.929	-8.000	0.076	3.000	0.534
83.0300	1.000	**0.022**	-5.500	0.620	1.000	**0.049**	3.14e-15	1.000	-1.97e-14	1.000	-0.500	0.404	-3.000	0.790	1.000	0.824	3.000	0.534
85.3400	1.43e-14	1.000	-13.50	0.224	5.95e-15	1.000	1.000	0.073	-1.97e-14	1.000	0.500	0.404	-5.000	0.658	-6.000	0.183	1.000	0.836
Observations	244		243		244		244		244		244		244		244		244	
F-Test	1.178		0.915		3.164		1.044		1.173		0.964		1.045		1.033		1.066	
p value	0.213		0.641		4.14e-09		0.406		0.219		0.549		0.404		0.426		0.369	
Pseudo R^2	0.247		0.204		0.469		0.226		0.247		0.212		0.226		0.224		0.229	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																		
bold = p<.05																		

APPENDIX A. INVESTIGATING QUASI-RANDOM ASSIGNMENT IN OUR DHA NATURAL EXPERIMENT

Introduction

Although often advocated (e.g., Oakes 2004), some question whether natural experiments can be leveraged to draw convincing implications about causal neighborhood effects. The main reservation from doing so has been the lack of assurance that they in fact produce a quasi-random assignment of households, and thus convincingly avoid geographic selection bias. This appendix uses our natural experiment involving public housing in Denver and investigates whether it convincingly produced an essentially random allocation of households across neighborhoods.

Methods of Analyzing Randomness of Initial Assignment

A few investigations of neighborhood effects employing natural experiments have probed the degree to which quasi-random assignment was achieved. Three methods have been employed. First, the allocation processes employed in the natural experiments are described in detail in an effort to uncover points at which non-random selections could occur (e.g., Oreopoulos, 2003; Edin, Fredricksson and Åslund, 2003; Jacob, 2004; Lyle, 2007; Piil Damm, 2009; 2014). Second, the sample of individuals analyzed is divided across two or more locations and their mean characteristics are compared statistically. Third, regression is used to assess whether there are any non-zero realtionships between individual characteristics and neighborhood characteristics. We employ all three strategies here and present a fourth, original approach involving Monte Carlo simulation.

Possibilities for Tenant Self-Selections and Staff Selections in the Denver HousingAuthority Allocation Process

First, we explore the possibility of selection arising because the tenant can potentially choose between two DHA units that may be located in quite different neighborhoods. Our independent evaluation of DHA records showed that: 69.5 percent accepted the dwelling first offered from DHA, 18.8 percent accepted their second offer; 7.9 percent ended up rejecting both offers and taking a third offer later (after returning to the bottom of the wait list); 3.8 percent rejected three or more offers before being placed. Since offered dwellings were sometimes in the same neighborhood, we calculated that 75.5 percent of the tenants accepted an offer to occupy the first neighborhood offered.

Perhaps more revealing than acceptance rates is probing whether applicants ended up in neighborhoods they would have selected on their own. Before their initial assignment to a DHA dwelling, clients were asked by DHA whether they had any geographic location preferences. DHA administrative data show that 42.5 percent of the clients in our sample did not articulate any locational preference, approximately one-third expressed general geographical areas (i.e., Southwest Denver) while the remaining 23.5 percent provided responses that ranged from specific addresses to specific DHA developments (i.e., North Lincoln Campus of Learners). In order to assess whether those who stated a preference were assigned to a housing unit in their specified area, a number of different approaches were taken. For those who specified a particular address, we checked to see if that address was the DHA unit to which the client was initially assigned. For those who specified a preference for a particular DHA development, we used the unit number reported by DHA (which has an abbreviation of the development embedded in it) to assess whether the initial DHA unit was located within that development. For those who specified a preference for a particular neighborhood, we relied on our survey data to determine whether the original DHA unit was in the specified neighborhood. Lastly, initially assigned DHA units were mapped to identify where within the Denver metropolitan area they were located for those who specified a preference for a particular part of the metro area. Once these assessments were made, we were able to calculate frequencies and percentages for those who specified a geographic preference and got it (N=190; 25.8 percent) and those who specified a geographic preference but didn't get a housing unit that met that preference (N=233; 31.7 percent). Thus, our analyses indicate that the vast majority of the respondents to our survey (74.2 percent) were either instances where there was no geographic preference articulated, or where the client's stated preference was not honored. Nevertheless, a quarter of the sample ended up expressing a geographic preference and having it honored, either by luck or by refusal to accept an offer until it met their preferences. Since we are unable to ascertain the geographic location of all potential DHA unit vacancies that arose during the times that each client was assigned to their initial unit, we are unable to perform any formal statistical tests to determine whether the frequencies we obtained for those who were assigned their expressed preference were any different than what would be expected by chance.

A second potential source of selection can arise from the actions of the DHA staff. If staff have multiple vacancies to consider at one time they may make dwelling offers on the basis of observable characteristics of the applicants at the top of the waiting list. Though our interviews with DHA staff uncovered no suggestions that this occurred, we nevertheless must acknowledge this possibility.

In sum, a close examination of the DHA dwelling allocation process leaves substantial room for tenant geographic selection. A non-trivial share of DHA applicants did not accept their first offer from DHA (30.5 percent) and ended up in a neighborhood they said they preferred (26 percent). It may also be possible that DHA staff practiced some selection in their dwelling offers, though we have no direct evidence of this.

Comparisons of Individual Characteristics Across Space

A second way we test the randomness of the DHA assignment process is by ascertaining the degree to which there are any systematic patterns of where individuals with particular characteristics end up residing in their first DHA units. In other words, we investigate whether certain types of households end up disproportionately allocated to particular places, whether it be due to DHA practices and/or to choices made by applicants regarding, for instance, refusing first options. We parse space in two ways: across DHA housing developments and by census tracts. In both variants we examine a wide range of individual characteristics—26 variables in all—measuring attributes that are typically gathered in surveys used in neighborhood effects research and many others that are not (but we have acquired through our aforementioned survey). These individual characteristics are listed in columns of Exhibit A-1.[24]

[24] Note that in our study we consider only Latino and African American residents of DHA, thus we measure only African American ethnic status, with Latino ethnicity being the reference group.

Our method involves regressing each individual characteristic on a series of dummy variables. In one variant these dummies signify different DHA developments; in the other they signify census tracts.[25] We stratify these regressions by family size (zero or one child; two children; three or more children) because there is a distinct geographic pattern in Denver of where public housing units of various bedroom configurations are located. Our test of quasi-random assignment is whether the place-based dummy variables denoting where DHA households were originally placed are significantly different from zero.[26] If they are, we reject the null hypothesis of random assignment of applicants to DHA dwellings.

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[25] The scattered-site DHA developments are not identified in their allocation process by individual address but rather by broader geographic area encompassing several census tracts (though we are aware of the tract of each development). This produces the seemingly anomalous situation shown in Exhibits A-1 and A-2 where apparently many more tracts are represented than "developments."

[26] Here the number of children in the household refers to the number of eligible children for our study and not the total number of all children in the household. So, it is possible for households with 0-1 eligible children to have other siblings with the same father.

Exhibit A-1A. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 0-1 Child

DHA Development	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	-0.111	0.638	-1.133	0.113	-2.653	0.607	-0.0889	0.652	-1.156	0.062	-1.044	0.146	-0.956	0.215	-0.911	0.209
Columbine Homes	-0.500	0.052	-0.300	0.698	-4.701	0.402	-0.200	0.351	-0.267	0.691	-0.267	0.732	0.1000	0.905	-0.133	0.865
Curtis Park Home	-0.100	0.667	-0.200	0.775	-2.984	0.556	-8.31e-15	1.000	0.1000	0.869	0.200	0.776	-7.11e-15	1.000	-9.46e-15	1.000
FHA Repossessed East	-7.78e-16	1.000	0.200	0.886	6.466	0.524	-0.200	0.606	-0.600	0.621	-0.600	0.670	-0.400	0.791	0.200	0.888
Goldsmith Village	-1.03e-15	1.000	-0.133	0.886	-0.251	0.970	-0.200	0.439	-0.267	0.741	0.0667	0.943	0.600	0.552	-0.467	0.623
South Lincoln	-0.240	0.248	-1.080	0.086	-6.033	0.184	-8.12e-15	1.000	-1.000	0.066	-0.760	0.228	-0.880	0.194	-0.640	0.315
North Lincoln COL	-0.278	0.170	-0.106	0.863	-0.594	0.893	-0.117	0.490	-0.294	0.577	-0.0167	0.978	0.1000	0.879	-0.0778	0.900
Quigg Newton Homes	-0.167	0.416	-0.467	0.450	-8.084	0.071	-0.133	0.435	-0.333	0.533	0.0333	0.957	-0.0667	0.920	-0.133	0.832
Sun Valley Annex	-0.111	0.604	-0.522	0.419	-10.08	**0.032**	-0.0889	0.619	-0.156	0.781	0.0111	0.986	-0.289	0.679	-0.189	0.774
Pacific Place	-3.08e-16	1.000	-0.800	0.568	-13.78	0.175	-0.200	0.606	-0.600	0.621	-0.600	0.670	-0.400	0.791	-0.800	0.574
T Bean Tower (Elderly & Disabled)	-7.88e-16	1.000	-0.800	0.568	-13.78	0.175	-0.200	0.606	-0.600	0.621	-0.600	0.670	-0.400	0.791	-0.800	0.574
Platte Valley Homes	-0.333	0.282	-0.467	0.617	-7.451	0.271	-0.200	0.439	0.400	0.621	0.400	0.670	-0.400	0.692	-0.133	0.888
Westridge Homes	-0.227	0.280	-0.300	0.636	-5.520	0.229	-0.0182	0.917	-0.191	0.728	0.0364	0.954	-0.127	0.852	0.0182	0.977
Westwood Homes	-0.154	0.490	-1.031	0.126	-6.469	0.185	0.108	0.563	-0.369	0.526	-0.754	0.265	-0.862	0.236	-0.646	0.345
Stapleton Homes	-9.83e-16	1.000	-0.300	0.779	-6.284	0.417	-0.200	0.499	-0.100	0.914	0.400	0.710	-0.400	0.729	0.200	0.854
Thomas Connole (Elderly & Dis.)	-1.000	**0.032**	-0.800	0.568	-13.78	0.175	0.800	**0.040**	-0.600	0.621	0.400	0.776	-0.400	0.791	0.200	0.888
East Village	-0.200	0.456	-0.400	0.621	-7.034	0.230	0.600	**0.008**	-0.600	0.391	-0.400	0.622	0.200	0.819	-0.200	0.808
Combined Devel-Disp Housing S.	-0.355	0.083	-0.284	0.645	-4.886	0.274	-0.103	0.545	-0.342	0.521	0.0129	0.983	-0.271	0.684	-0.0581	0.926
Combined Devel-Disp Housing E.	-0.250	0.239	-0.250	0.696	-2.848	0.538	0.1000	0.572	-0.350	0.527	-0.150	0.815	0.200	0.772	0.0500	0.939
Combined Devel-Disp Housing W.	-0.316	0.139	-0.116	0.857	-1.142	0.806	-0.0421	0.813	-0.337	0.545	-0.0737	0.909	0.232	0.739	-0.116	0.859
Observations	261		261		261		261		261		261		261		261	
F-Test	0.898		0.917		1.491		1.842		0.930		0.891		0.985		0.531	
p value	0.590		0.566		0.0850		**0.0175**		0.550		0.599		0.481		0.952	
Pseudo R^2	0.0696		0.0710		0.111		0.133		0.0719		0.0691		0.0759		0.0424	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																
bold = p<.05																

Exhibit A-1A. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 0-1 Child (continued)

DHA Development	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	-0.756	0.327	-1.378	0.128	0.533	0.649	0.889	0.356	0.356	0.177	-0.689	0.887	-6.889	0.287	0.0889	0.580	1.58e-15	1.000
Columbine Homes	0.133	0.873	-0.267	0.786	0.0333	0.979	0.667	0.524	0.300	0.294	10.37	**0.050**	-20.00	**0.005**	0.200	0.252	1.84e-15	1.000
Curtis Park Home	0.400	0.597	-1.200	0.177	-0.300	0.794	0.200	0.832	0.400	0.122	-0.500	0.916	-9.300	0.144	0.100	0.526	0.100	0.374
FHA Repossessed East	0.800	0.597	-0.600	0.735	5.200	**0.025**	-7.48e-15	1.000	-0.200	0.698	-5.800	0.543	7.000	0.581	0.200	0.526	1.51e-15	1.000
Goldsmith Village	0.467	0.644	-0.267	0.821	-3.467	**0.025**	0.333	0.791	0.467	0.176	-5.800	0.362	-4.667	0.581	-0.133	0.526	1.75e-15	1.000
South Lincoln	-0.720	0.288	-0.960	0.227	-0.200	0.846	0.280	0.741	8.05e-15	1.000	1.120	0.793	-14.96	**0.009**	0.120	0.395	0.0800	0.427
North Lincoln COL	-0.0889	0.893	-0.267	0.730	-0.189	0.851	0.194	0.813	0.0778	0.729	-1.244	0.764	-7.139	0.197	0.0889	0.518	0.0278	0.777
Quigg Newton Homes	0.0333	0.960	-0.133	0.865	-0.333	0.743	-0.300	0.719	0.267	0.242	-0.200	0.962	-9.900	0.078	0.133	0.338	0.0667	0.502
Sun Valley Annex	0.0778	0.911	-0.656	0.423	-0.356	0.738	0.111	0.899	0.0222	0.926	4.700	0.286	-8.611	0.142	0.144	0.321	1.56e-15	1.000
Pacific Place	-0.200	0.895	-0.600	0.735	1.200	0.602	1.000	0.597	-0.200	0.698	-5.800	0.543	-20.00	0.116	0.200	0.526	1.37e-15	1.000
T Bean Tower (Elderly & Disabled)	-0.200	0.895	-0.600	0.735	0.200	0.931	1.000	0.597	0.800	0.122	-5.800	0.543	-8.000	0.528	0.200	0.526	1.51e-15	1.000
Platte Valley Homes	0.133	0.895	-0.267	0.821	1.867	0.224	-5.18e-15	1.000	0.467	0.176	3.200	0.615	-7.000	0.408	0.200	0.342	1.49e-15	1.000
Westridge Homes	0.164	0.811	-0.100	0.901	-0.527	0.613	-0.0455	0.958	0.209	0.371	0.336	0.938	-9.864	0.087	0.109	0.445	0.0909	0.372
Westwood Homes	-0.508	0.485	-0.908	0.287	0.200	0.856	0.769	0.397	0.108	0.664	-2.492	0.586	-6.077	0.319	0.0462	0.761	1.56e-15	1.000
Stapleton Homes	0.300	0.795	-0.600	0.658	1.700	0.334	-6.33e-15	1.000	-0.200	0.612	-0.300	0.967	4.500	0.642	0.200	0.407	1.47e-15	1.000
Thomas Connole (Elderly & Dis.)	-0.200	0.895	0.400	0.821	-0.800	0.728	-6.35e-15	1.000	-0.200	0.698	-5.800	0.543	7.000	0.581	-0.800	**0.012**	1.47e-15	1.000
East Village	0.200	0.819	-0.600	0.558	0.400	0.763	0.600	0.583	0.200	0.502	-2.000	0.716	-10.40	0.157	-0.200	0.273	0.200	0.124
Combined Devel-Disp Housing S.	0.0903	0.892	-0.213	0.785	0.0387	0.970	0.194	0.816	-0.00645	0.977	0.458	0.913	-5.968	0.286	0.135	0.329	1.25e-15	1.000
Combined Devel-Disp Housing E.	-1.55e-15	1.000	-0.250	0.757	-0.350	0.739	1.000	0.247	0.150	0.524	-3.200	0.462	-6.050	0.297	0.100	0.487	0.0500	0.626
Combined Devel-Disp Housing W.	0.274	0.693	-0.547	0.501	0.0421	0.968	0.421	0.627	0.168	0.477	-3.905	0.372	-7.053	0.226	0.200	0.168	0.0526	0.610
Observations	261		261		261		261		261		261		261		261		261	
F-Test	0.713		0.676		1.117		0.573		1.169		1.315		1.436		1.179		0.525	
p value	0.812		0.848		0.333		0.929		0.283		0.170		0.106		0.273		0.954	
Pseudo R^2	0.0561		0.0534		0.0851		0.0456		0.0888		0.0987		0.107		0.0895		0.0419	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																		
bold = p<.05																		

Exhibit A-1A. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 0-1 Child (continued)

DHA Development	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	-0.0889	0.657	5.756	0.338	0.289	0.269	0.133	0.611	-0.200	0.267	-0.0444	0.865	-0.0667	0.990	-0.0889	0.962	-1.911	0.332
Columbine Homes	0.133	0.540	6.200	0.342	-0.433	0.127	-0.0333	0.907	-0.200	0.306	0.0667	0.814	-6.233	0.295	0.467	0.819	0.367	0.864
Curtis Park Home	-0.100	0.611	0.900	0.879	0.100	0.697	0.100	0.697	-0.100	0.571	-0.300	0.242	5.100	0.343	-0.300	0.871	-1.100	0.570
FHA Repossessed East	-0.200	0.611	11.20	0.343	-0.600	0.243	-0.200	0.697	-0.200	0.571	0.400	0.435	-8.400	0.435	-4.200	0.257	3.200	0.409
Goldsmith Village	-0.200	0.446	11.87	0.132	0.0667	0.845	-0.200	0.560	0.133	0.571	0.0667	0.845	-3.400	0.635	0.467	0.850	-3.133	0.225
South Lincoln	0.0800	0.649	5.680	0.282	-0.240	0.296	0.360	0.118	-0.120	0.448	0.0800	0.727	1.600	0.739	-1.040	0.530	-0.920	0.595
North Lincoln COL	-0.0611	0.721	4.561	0.375	-0.0722	0.747	0.217	0.334	-0.0889	0.564	0.178	0.426	-1.844	0.694	-1.256	0.436	-0.828	0.623
Quigg Newton Homes	-0.167	0.337	4.300	0.408	-0.267	0.239	0.233	0.304	-0.167	0.285	0.133	0.555	2.033	0.668	-1.667	0.307	-1.400	0.412
Sun Valley Annex	-0.0889	0.624	0.311	**0.954**	-0.156	0.511	0.0778	0.743	-0.144	0.376	-0.0444	0.851	-1.067	0.830	-1.811	0.289	-0.578	0.746
Pacific Place	-0.200	0.611	30.20	0.011	0.400	0.436	-0.200	0.697	-0.200	0.571	0.400	0.435	8.600	0.424	-3.200	0.387	-0.800	0.836
T Bean Tower (Elderly & Disabled)	-0.200	0.611	17.20	0.145	0.400	0.436	0.800	0.121	-0.200	0.571	0.400	0.435	8.600	0.424	1.800	0.627	2.200	0.570
Platte Valley Homes	-0.200	0.446	12.20	0.122	0.400	0.243	-0.200	0.560	0.133	0.571	0.0667	0.845	3.933	0.583	-2.200	0.373	0.533	0.836
Westridge Homes	-0.109	0.540	3.609	0.499	-0.327	0.159	0.0727	0.755	-0.0182	0.909	0.0364	0.875	-1.309	0.788	-1.291	0.441	0.473	0.787
Westwood Homes	-0.0462	0.807	8.123	0.152	-0.138	0.574	-0.123	0.618	0.185	0.277	0.0154	0.950	-0.785	0.879	0.0308	0.986	-0.415	0.823
Stapleton Homes	-0.200	0.506	5.200	0.564	0.400	0.308	0.800	**0.043**	-0.200	0.459	0.400	0.307	-6.900	0.401	1.800	0.524	0.700	0.813
Thomas Connole (Elderly & Dis.)	-0.200	0.611	29.20	**0.014**	-0.600	0.243	-0.200	0.697	-0.200	0.571	0.400	0.435	10.60	0.325	-11.20	**0.003**	-7.800	**0.045**
East Village	-3.54e-15	1.000	15.00	**0.028**	3.03e-15	1.000	6.26e-15	1.000	-4.03e-15	1.000	0.200	0.499	6.400	0.303	-3.600	0.093	-2.600	0.245
Combined Devel-Disp Housing S.	-0.0387	0.823	1.910	0.713	-0.342	0.131	0.123	0.588	-0.135	0.384	0.110	0.627	-1.787	0.706	-1.232	0.449	-0.574	0.736
Combined Devel-Disp Housing E.	-3.49e-15	1.000	7.850	0.146	0.250	0.286	0.100	0.670	0.0500	0.756	0.150	0.522	-2.850	0.562	-2.150	0.204	-1.750	0.322
Combined Devel-Disp Housing W.	0.0105	0.953	9.095	0.094	-0.337	0.153	0.116	0.624	-0.0947	0.559	0.189	0.421	-1.453	0.768	-1.095	0.519	-0.221	0.901
Observations	261		261		261		261		261		261		261		261		261	
F-Test	0.619		1.677		2.800		1.260		1.165		0.787		0.955		1.209		0.865	
p value	0.897		**0.0378**		**0.000108**		0.207		0.286		0.729		0.518		0.247		0.632	
Pseudo R^2	0.0491		0.123		0.189		0.0950		0.0885		0.0615		0.0737		0.0915		0.0672	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																		
bold = p<.05																		

Exhibit A-1B. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 2 Children

DHA Development	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	0.333	0.383	0.667	0.600	9.167	0.266	3.61e-15	1.000	0.167	0.874	0.167	0.857	0.500	0.685	2.46e-14	1.000
Columbine Homes	0.333	0.298	0.417	0.695	4.542	0.509	0.500	**0.043**	0.417	0.637	0.417	0.590	2.73e-14	1.000	-0.250	0.816
Curtis Park Homes	0.0476	0.858	-0.476	0.591	0.792	0.890	0.143	0.486	-0.476	0.517	0.452	0.483	-0.286	0.739	-0.714	0.425
FHA Repossessed East	0.333	0.491	0.667	0.678	17.17	0.100	4.17e-15	1.000	-0.333	0.803	-0.333	0.776	1.000	0.521	2.38e-14	1.000
Goldsmith Village	0.333	0.491	-0.333	0.836	-7.333	0.481	4.18e-15	1.000	-0.333	0.803	-0.333	0.776	2.82e-14	1.000	2.38e-14	1.000
South Lincoln	0.175	0.500	-0.386	0.655	0.227	0.968	0.0526	0.793	0.140	0.845	0.404	0.522	-0.158	0.851	-0.842	0.335
North Lincoln COL	-0.0370	0.884	0.444	0.600	8.220	0.135	0.0741	0.706	0.0370	0.958	0.333	0.589	0.630	0.443	-0.333	0.697
220	0.333	0.491	-0.333	0.836	-7.333	0.481	4.58e-15	1.000	-0.333	0.803	-0.333	0.776	2.87e-14	1.000	-1.000	0.538
Quigg Newton Homes	0.222	0.395	0.111	0.898	0.146	0.979	0.167	0.407	0.167	0.817	0.333	0.598	0.222	0.792	-0.278	0.751
Sun Valley Annex	0.0833	0.758	0.333	0.710	3.164	0.586	4.70e-15	1.000	0.250	0.737	0.417	0.524	0.333	0.702	-0.333	0.713
Pacific Place	0.333	0.298	-1.833	0.085	5.042	0.464	4.33e-15	1.000	0.167	0.850	0.417	0.590	-2.000	0.053	-2.500	**0.021**
Platte Valley Homes	-3.83e-15	1.000	1.16e-14	1.000	-2.233	0.726	0.500	**0.029**	-1.333	0.104	0.500	0.485	0.167	0.861	-0.500	0.615
Westridge Homes	0.0333	0.904	-0.133	0.884	-3.933	0.507	0.100	0.637	0.267	0.726	0.267	0.689	0.300	0.736	-0.400	0.666
Westwood Homes	0.0333	0.904	0.167	0.856	0.552	0.926	0.100	0.637	0.367	0.630	0.467	0.484	0.200	0.822	-0.1000	0.914
Stapleton Homes	0.333	0.383	-4.333	**0.001**	-0.583	0.943	0.500	0.090	0.667	0.527	0.167	0.857	-4.500	**0.000**	-5.000	**0.000**
East Village	0.333	0.383	0.667	0.600	8.167	0.321	4.62e-15	1.000	-0.333	0.752	-0.333	0.718	0.500	0.685	-0.500	0.697
Combined Devel-Disp Hsing S.	0.0769	0.759	0.0256	0.975	3.107	0.565	0.128	0.507	-0.282	0.684	-0.128	0.833	0.154	0.849	-0.410	0.626
Combined Devel-Disp Hsing E.	0.194	0.440	0.500	0.550	8.579	0.114	0.139	0.473	-2.55e-16	1.000	0.0556	0.927	0.556	0.493	-0.278	0.742
Combined Devel-Disp Hsing W.	0.121	0.631	0.212	0.800	1.736	0.749	0.0909	0.640	-0.0606	0.931	0.242	0.691	0.333	0.682	-0.242	0.775
Observations	244		244		244		244		244		244		244		244	
F-Test	0.699		2.087		2.329		1.193		0.899		0.578		2.352		1.840	
p value	0.818		**0.00616**		**0.00184**		0.265		0.584		0.920		**0.00164**		**0.0200**	
Pseudo R^2	0.0560		0.150		0.165		0.0919		0.0709		0.0467		0.166		0.135	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																
bold = p<.05																

Exhibit A-1B. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 2 Children (continued)

DHA Development	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	-0.167	0.893	3.167	0.082	-0.500	0.846	-0.500	0.804	0.167	0.710	1.34e-13	1.000	17.83	0.106	7.02e-15	1.000	4.22e-15	1.000
Columbine Homes	-0.667	0.521	2.667	0.080	1.000	0.642	2.500	0.138	0.667	0.077	11.25	0.057	-1.917	0.835	6.93e-15	1.000	4.24e-15	1.000
Curtis Park Homes	-1.024	0.237	2.381	0.061	0.571	0.749	0.429	0.760	0.0238	0.939	6.000	0.222	4.262	0.578	-0.143	0.525	0.0714	0.655
FHA Repossessed East	0.333	0.832	2.667	0.246	-1.000	0.758	5.000	0.050	0.667	0.241	1.27e-13	1.000	10.33	0.458	6.36e-15	1.000	4.46e-15	1.000
Goldsmith Village	-0.667	0.671	2.667	0.246	-7.26e-14	1.000	-1.82e-15	1.000	0.667	0.241	16.00	0.073	-8.667	0.533	6.37e-15	1.000	4.45e-15	1.000
South Lincoln	-0.772	0.361	2.246	0.070	-0.474	0.786	-0.842	0.539	0.0351	0.909	6.579	0.171	-2.193	0.769	6.04e-15	1.000	4.67e-15	1.000
North Lincoln COL	-0.259	0.754	2.815	**0.021**	-0.481	0.778	-0.778	0.562	0.222	0.458	2.630	0.575	5.296	0.470	-0.259	0.229	0.0370	0.808
220	0.333	0.832	3.667	0.111	-1.000	0.758	-1.000	0.694	-0.333	0.557	1.22e-13	1.000	10.33	0.458	5.98e-15	1.000	4.67e-15	1.000
Quigg Newton Homes	-0.556	0.512	1.833	0.140	-0.722	0.680	-0.667	0.628	0.222	0.469	2.833	0.556	4.556	0.544	-0.222	0.314	0.167	0.287
Sun Valley Annex	-0.333	0.704	3.083	**0.017**	-0.667	0.713	-0.667	0.639	-0.167	0.600	6.333	0.204	2.667	0.732	-0.167	0.465	0.0833	0.607
Pacific Place	-2.417	**0.021**	0.917	0.546	0.750	0.727	-0.750	0.656	-0.0833	0.824	6.000	0.309	-1.917	0.835	-0.250	0.355	0.250	0.193
Platte Valley Homes	-0.333	0.729	2.833	**0.045**	-0.833	0.675	0.333	0.831	-4.96e-15	1.000	2.833	0.604	-0.833	0.922	5.69e-15	1.000	4.77e-15	1.000
Westridge Homes	-0.0667	0.941	3.267	**0.013**	-1.000	0.589	-1.100	0.448	0.0667	0.837	3.800	0.455	7.933	0.317	-0.1000	0.667	0.100	0.545
Westwood Homes	-0.567	0.527	2.767	**0.035**	-1.500	0.418	-0.400	0.783	0.0667	0.837	5.800	0.254	4.033	0.611	-0.300	0.198	4.69e-15	1.000
Stapleton Homes	-5.167	**0.000**	-1.833	0.312	0.500	0.846	-0.500	0.804	0.167	0.710	5.500	0.435	-8.667	0.431	5.97e-15	1.000	4.68e-15	1.000
East Village	-0.167	0.893	2.667	0.142	-1.000	0.697	-0.500	0.804	-0.333	0.458	1.21e-13	1.000	3.833	0.727	-0.500	0.122	4.69e-15	1.000
Combined Devel-Disp Hsing S.	-0.436	0.593	2.974	**0.013**	-1.051	0.533	-0.564	0.669	0.0513	0.862	5.077	0.273	3.513	0.626	-0.0769	0.716	0.0256	0.865
Combined Devel-Disp Hsing E.	-0.194	0.812	3.167	**0.008**	-0.528	0.755	-0.778	0.557	0.222	0.452	1.944	0.675	3.361	0.642	-0.139	0.513	0.0556	0.713
Combined Devel-Disp Hsing W.	-0.303	0.712	2.879	**0.017**	-1.061	0.532	-0.394	0.767	-0.0303	0.919	4.394	0.345	0.758	0.917	-0.182	0.394	0.152	0.317
Observations	244		244		244		244		244		244		244		244		244	
F-Test	2.138		1.514		0.447		1.044		1.226		0.952		0.879		0.874		0.744	
p value	**0.00481**		0.0821		0.979		0.411		0.238		0.520		0.609		0.616		0.771	
Pseudo R^2	0.153		0.114		0.0365		0.0814		0.0942		0.0747		0.0694		0.0690		0.0593	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts. bold = p<.05																		

Exhibit A-1B. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 2 Children (continued)

DHA Development	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	1.15e-14	1.000	-4.833	0.554	-0.500	0.174	1.000	**0.015**	-0.333	0.248	1.000	**0.025**	12.17	0.151	0.333	0.921	-7.833	**0.030**
Columbine Homes	1.14e-14	1.000	-7.583	0.267	-0.500	0.105	0.250	0.465	-0.0833	0.730	0.250	0.502	12.92	0.069	-5.917	**0.037**	-1.333	0.658
Curtis Park Homes	0.286	0.222	-9.619	0.092	-0.214	0.403	0.500	0.080	-0.262	0.193	0.286	0.357	3.881	0.510	-2.952	0.209	-2.619	0.297
FHA Repossessed East	1.10e-14	1.000	-6.333	0.540	5.98e-15	1.000	1.70e-14	1.000	-0.333	0.361	1.000	0.076	-4.333	0.685	-0.667	0.876	-4.333	0.342
Goldsmith Village	1.10e-14	1.000	-11.33	0.273	5.99e-15	1.000	1.70e-14	1.000	-0.333	0.361	1.33e-14	1.000	13.67	0.202	0.333	0.938	-1.333	0.770
South Lincoln	0.158	0.489	-10.07	0.071	-0.526	**0.036**	0.316	0.257	-0.281	0.153	0.316	0.297	2.140	0.710	-2.246	0.328	-1.386	0.572
North Lincoln COL	0.148	0.507	-7.222	0.185	-0.370	0.131	0.111	0.683	-0.185	0.336	0.407	0.170	6.815	0.227	-3.481	0.122	-0.889	0.711
220	1.07e-14	1.000	-3.333	0.747	-1.000	**0.032**	1.000	0.054	-0.333	0.361	1.000	0.076	-0.333	0.975	-5.667	0.184	0.667	0.884
Quigg Newton Homes	1.01e-14	1.000	-8.111	0.147	-0.722	**0.004**	0.167	0.550	-0.278	0.159	0.333	0.273	4.000	0.489	-1.833	0.426	-1.333	0.588
Sun Valley Annex	0.167	0.482	-10.42	0.072	-0.750	**0.004**	0.167	0.564	-0.250	0.221	0.417	0.186	6.583	0.271	-2.167	0.363	-0.500	0.844
Pacific Place	1.14e-14	1.000	-5.583	0.414	-1.000	**0.001**	0.250	0.465	-0.333	0.168	0.250	0.502	-3.083	0.663	-1.167	0.679	-2.583	0.392
Platte Valley Homes	0.167	0.521	-4.833	0.445	3.89e-15	1.000	0.167	0.598	-0.167	0.456	0.167	0.628	2.500	0.703	-1.167	0.655	-2.500	0.371
Westridge Homes	0.100	0.679	-10.33	0.080	-0.800	**0.003**	0.500	0.091	-0.133	0.521	0.400	0.213	9.267	0.129	-4.067	0.095	0.867	0.739
Westwood Homes	0.200	0.408	-7.733	0.190	-0.400	0.132	0.400	0.175	-0.333	0.110	0.200	0.533	3.167	0.604	-2.367	0.330	-1.433	0.581
Stapleton Homes	1.06e-14	1.000	-8.333	0.308	5.07e-15	1.000	1.63e-14	1.000	-0.333	0.248	1.33e-14	1.000	2.667	0.752	-5.667	0.093	-3.833	0.288
East Village	1.06e-14	1.000	4.167	0.610	-0.500	0.174	1.61e-14	1.000	-0.333	0.248	1.000	**0.025**	-1.333	0.875	-3.167	0.347	-0.833	0.817
Combined Devel-Disp Hsing S.	0.205	0.351	-4.333	0.419	-0.795	**0.001**	0.385	0.152	-0.256	0.176	0.385	0.188	3.923	0.480	-3.077	0.165	-1.590	0.501
Combined Devel-Disp Hsing E.	0.167	0.450	-5.076	0.346	-0.111	0.646	0.361	0.180	-0.167	0.380	0.472	0.108	3.306	0.553	-3.528	0.112	-3.111	0.190
Combined Devel-Disp Hsing W.	0.182	0.411	-4.606	0.393	-0.970	**0.000**	0.212	0.432	-0.212	0.266	0.424	0.149	4.333	0.438	-2.061	0.355	-0.667	0.779
Observations	244		243		244		244		244		244		244		244		244	
F-Test	0.522		1.044		7.950		1.481		0.503		1.014		0.980		0.954		1.135	
p value	0.951		0.411		1.31e-16		0.0938		0.960		0.446		0.486		0.517		0.318	
Pseudo R^2	0.0424		0.0817		0.403		0.112		0.0409		0.0792		0.0767		0.0749		0.0878	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																		
bold = p<.05																		

Exhibit A-1C. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 3+ Children

DHA Development	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	0.250	0.627	1.000	0.443	18.75	0.077	-3.82e-15	1.000	-0.750	0.631	0.250	0.833	4.70e-15	1.000	0.750	0.523
Columbine Homes	0.250	0.386	0.429	0.558	7.407	0.211	-3.45e-15	1.000	-0.179	0.838	-0.0357	0.957	0.143	0.850	0.464	0.481
Curtis Park Homes	0.0682	0.800	0.455	0.505	7.409	0.180	0.0909	0.604	-1.295	0.113	-0.205	0.741	-0.727	0.303	0.386	0.528
FHA Repossessed East	0.250	0.627	1.000	0.443	22.50	**0.034**	-3.79e-15	1.000	-0.750	0.631	0.250	0.833	1.000	0.459	-0.250	0.831
Goldsmith Village	0.250	0.627	1.000	0.443	20.00	0.059	-3.79e-15	1.000	-0.750	0.631	0.250	0.833	1.000	0.459	0.750	0.523
South Lincoln	5.54e-15	1.000	0.437	0.502	7.734	0.144	0.125	0.456	-0.125	0.873	0.188	0.752	0.188	0.781	0.500	0.394
North Lincoln COL	-0.150	0.562	0.200	0.760	15.88	**0.003**	0.0667	0.693	-1.617	**0.041**	-1.283	**0.032**	4.85e-15	1.000	-0.250	0.672
Quigg Newton Homes	-0.0658	0.795	0.474	0.460	8.752	0.093	0.158	0.339	-0.329	0.668	-0.171	0.769	0.105	0.874	0.539	0.351
Sun Valley Annex	-0.125	0.657	0.625	0.382	12.09	**0.038**	-3.53e-15	1.000	-1.375	0.109	-7.89e-16	1.000	0.625	0.398	0.375	0.560
Pacific Place	0.250	0.530	0.500	0.621	9.500	0.246	-3.58e-15	1.000	-0.750	0.535	-0.250	0.785	0.500	0.632	-0.250	0.783
Platte Valley Homes	-0.250	0.530	-4.500	**0.000**	-1.30e-13	1.000	-3.59e-15	1.000	-0.250	0.836	0.250	0.785	4.49e-15	1.000	-0.250	0.783
Westridge Homes	-0.114	0.672	0.727	0.286	12.40	**0.025**	0.182	0.300	-0.205	0.802	0.0682	0.912	0.182	0.796	0.477	0.436
Westwood Homes	0.107	0.710	-1.000	0.172	4.819	0.416	0.143	0.447	-0.464	0.596	-0.179	0.788	-1.286	0.090	-1.107	0.094
Stapleton Homes	-0.0833	0.812	0.333	0.708	5.383	0.455	0.333	0.147	-0.417	0.696	-0.0833	0.918	0.333	0.718	0.0833	0.917
East Village	0.250	0.627	-2.31e-14	1.000	-4.42e-14	1.000	-3.57e-15	1.000	-0.750	0.631	0.250	0.833	1.000	0.459	0.750	0.523
Combined Devel-Disp Hsing S.	-0.132	0.586	0.647	0.294	12.27	**0.015**	0.0882	0.578	-0.279	0.705	-0.103	0.854	0.676	0.290	0.544	0.327
Combined Devel-Disp Hsing E.	0.00758	0.975	0.576	0.351	10.54	**0.036**	0.121	0.445	-0.356	0.630	-0.235	0.675	0.455	0.477	0.417	0.454
Combined Devel-Disp Hsing W.	-0.00926	0.970	0.630	0.314	11.64	**0.022**	0.0370	0.818	-0.231	0.757	-0.0463	0.935	0.370	0.567	0.528	0.348
Observations	203		203		203		203		203		203		203		203	
F-Test	0.575		2.884		1.479		0.452		1.202		1.169		1.525		1.359	
p value	0.914		**0.000169**		0.101		0.974		0.263		0.291		0.0852		0.157	
Pseudo R^2	0.0533		0.220		0.126		0.0424		0.105		0.103		0.130		0.117	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																
bold = *p*<.05																

Exhibit A-1C. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 3+ Children (continued)

DHA Development	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	-0.250	0.828	-0.250	0.916	1.92e-14	1.000	-6.57e-15	1.000	-0.250	0.649	-13.50	0.139	8.000	0.549	3.25e-15	1.000	-2.92e-16	1.000
Columbine Homes	0.464	0.471	0.179	0.893	1.286	0.420	-0.429	0.789	0.179	0.563	-6.071	0.235	1.286	0.863	-0.143	0.542	0.143	0.375
Curtis Park Homes	0.477	0.427	-0.795	0.522	0.0909	0.951	-0.364	0.808	0.114	0.692	-5.955	0.211	6.545	0.348	3.52e-15	1.000	-5.00e-16	1.000
FHA Repossessed East	0.750	0.514	0.750	0.752	1.93e-14	1.000	-6.47e-15	1.000	-0.250	0.649	-13.50	0.139	22.00	0.100	3.21e-15	1.000	-3.69e-16	1.000
Goldsmith Village	0.750	0.514	0.750	0.752	1.000	0.725	1.000	0.727	0.750	0.174	-13.50	0.139	4.000	0.764	3.18e-15	1.000	-3.81e-16	1.000
South Lincoln	-0.0625	0.913	-0.562	0.636	-0.250	0.860	-5.91e-15	1.000	0.0625	0.820	-9.375	**0.040**	7.750	0.246	-0.187	0.370	0.187	0.192
North Lincoln COL	-0.583	0.314	-0.383	0.749	0.667	0.641	-0.467	0.746	0.417	0.133	-8.700	0.059	5.867	0.382	-0.133	0.526	-6.40e-16	1.000
Quigg Newton Homes	0.118	0.834	-0.461	0.694	0.263	0.851	0.895	0.525	0.329	0.225	-8.342	0.064	5.684	0.387	-0.263	0.202	0.211	0.137
Sun Valley Annex	0.625	0.321	0.375	0.773	0.625	0.688	0.375	0.811	0.125	0.678	-10.12	**0.043**	7.250	0.321	2.85e-15	1.000	-6.93e-16	1.000
Pacific Place	0.250	0.779	0.250	0.892	2.500	0.257	3.000	0.177	0.250	0.557	-6.000	0.395	8.500	0.411	2.86e-15	1.000	-7.06e-16	1.000
Platte Valley Homes	0.250	0.779	-0.250	0.892	2.03e-14	1.000	-6.14e-15	1.000	-0.250	0.557	-13.50	0.057	4.000	0.699	2.82e-15	1.000	-7.14e-16	1.000
Westridge Homes	0.295	0.622	0.386	0.756	-0.545	0.713	-0.727	0.626	-0.0682	0.812	-8.682	0.069	12.73	0.069	-0.273	0.212	0.0909	0.544
Westwood Homes	-1.393	**0.032**	-1.393	0.296	1.857	0.244	1.286	0.423	0.179	0.563	-7.786	0.128	8.143	0.277	-0.143	0.542	-6.44e-16	1.000
Stapleton Homes	0.0833	0.915	-2.917	0.074	2.333	0.230	-2.667	0.173	0.417	0.268	-7.167	0.250	16.67	0.068	2.92e-15	1.000	-9.54e-16	1.000
East Village	-0.250	0.828	0.750	0.752	2.000	0.482	-6.07e-15	1.000	-0.250	0.649	12.50	0.170	22.00	0.100	2.82e-15	1.000	-6.52e-16	1.000
Combined Devel-Disp Hsing S.	0.0735	0.892	-0.515	0.647	-0.382	0.776	-0.941	0.487	0.103	0.692	-10.76	**0.013**	10.18	0.108	-0.206	0.298	0.0294	0.828
Combined Devel-Disp Hsing E.	0.0530	0.922	-0.371	0.742	-0.0909	0.946	0.455	0.737	0.205	0.432	-11.50	**0.008**	10.58	0.095	-0.152	0.444	0.0606	0.655
Combined Devel-Disp Hsing W.	0.157	0.775	0.269	0.814	0.963	0.480	0.630	0.646	0.0463	0.861	-7.093	0.105	5.407	0.398	-0.185	0.356	0.0741	0.590
Observations	203		203		203		203		203		203		203		203		203	
F-Test	1.534		0.721		0.852		1.086		0.990		1.279		0.879		0.530		0.823	
p value	0.0822		0.787		0.637		0.369		0.473		0.206		0.604		0.941		0.671	
Pseudo R^2	0.131		0.0659		0.0769		0.0960		0.0883		0.111		0.0792		0.0493		0.0745	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																		
bold = p<.05																		

ExhibitA-1C. Relationships Between DHA Resident Characteristics and DHA Developments: Households with 3+ Children (continued)

DHA Development	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
Arrowhead Townhouses	-0.250	0.613	3.250	0.729	-1.28e-14	1.000	-2.63e-15	1.000	-5.40e-15	1.000	-6.77e-15	1.000	-3.250	0.763	3.500	0.337	0.750	0.865
Columbine Homes	-0.107	0.699	12.25	**0.021**	-0.571	**0.031**	0.571	0.061	-5.08e-15	1.000	0.143	0.625	8.321	0.170	-1.643	0.422	-1.679	0.498
Curtis Park Homes	-0.0682	0.792	2.795	0.568	-9.76e-15	1.000	0.455	0.110	-5.63e-15	1.000	0.273	0.317	7.659	0.175	0.500	0.793	-2.795	0.227
FHA Repossessed East	-0.250	0.613	4.250	0.650	-1.16e-14	1.000	-2.46e-15	1.000	-5.38e-15	1.000	-6.64e-15	1.000	13.75	0.204	-4.500	0.218	-9.250	**0.037**
Goldsmith Village	0.750	0.130	7.250	0.439	-1.15e-14	1.000	-2.54e-15	1.000	-5.34e-15	1.000	1.000	0.056	20.75	0.056	-5.500	0.132	-2.250	0.611
South Lincoln	-0.188	0.448	6.687	0.154	-0.500	**0.034**	0.375	0.168	0.125	0.417	0.375	0.151	2.687	0.619	0.688	0.706	-1.438	0.515
North Lincoln COL	0.150	0.547	4.250	0.368	-0.467	**0.050**	0.200	0.464	0.0667	0.667	0.400	0.129	-1.383	0.799	1.033	0.573	-1.983	0.373
Quigg Newton Homes	-0.145	0.552	6.566	0.155	-0.895	**0.000**	0.316	0.238	0.0526	0.728	0.316	0.219	2.803	0.598	0.974	0.587	-1.197	0.582
Sun Valley Annex	0.250	0.356	8.125	0.114	-0.375	0.146	0.375	0.208	-5.19e-15	1.000	0.125	0.662	2.625	0.657	0.250	0.900	-0.250	0.918
Pacific Place	0.250	0.514	13.25	0.069	-1.000	**0.007**	-1.50e-15	1.000	-5.19e-15	1.000	-6.01e-15	1.000	3.250	0.698	1.46e-14	1.000	0.250	0.942
Platte Valley Homes	-0.250	0.514	3.750	0.605	-9.39e-15	1.000	0.500	0.235	-5.19e-15	1.000	-6.04e-15	1.000	2.250	0.788	0.500	0.859	-4.750	0.166
Westridge Homes	-0.0682	0.792	9.068	0.065	-0.545	**0.027**	0.273	0.336	0.182	0.258	0.273	0.317	-0.886	0.875	0.318	0.867	-2.068	0.371
Westwood Homes	-0.107	0.699	1.393	0.791	-0.857	**0.001**	0.143	0.639	-5.13e-15	1.000	0.429	0.144	-0.250	0.967	1.786	0.383	-3.679	0.139
Stapleton Homes	0.417	0.218	13.58	**0.035**	-1.02e-14	1.000	0.333	0.369	-4.91e-15	1.000	-6.34e-15	1.000	8.417	0.255	-0.167	0.947	-2.250	0.456
East Village	-0.250	0.613	11.25	0.230	-1.39e-14	1.000	1.000	0.066	-5.22e-15	1.000	-6.05e-15	1.000	-3.250	0.763	2.500	0.493	0.750	0.865
Combined Devel-Disp Hsing S.	0.162	0.489	9.515	**0.033**	-0.647	**0.004**	0.412	0.110	0.0294	0.840	0.529*	0.033	1.956	0.702	0.206	0.905	-0.779	0.709
Combined Devel-Disp Hsing E.	-0.00758	0.974	7.098	0.111	-0.303	0.174	0.394	0.126	0.152	0.299	0.303	0.221	-0.0682	0.989	0.773	0.654	-1.311	0.531
Combined Devel-Disp Hsing W.	0.120	0.611	8.139	0.071	-0.963	**0.000**	0.370	0.155	0.148	0.315	0.259	0.300	0.194	0.970	0.352	0.840	-2.028	0.339
Observations	203		203		203		203		203		203		203		203		203	
F-Test	1.349		1.183		5.652		0.705		0.627		1.101		1.111		0.715		0.740	
p value	0.162		0.279		1.47e-10		0.803		0.876		0.354		0.344		0.793		0.767	
Pseudo R^2	0.117		0.104		0.356		0.0645		0.0578		0.0972		0.0981		0.0654		0.0675	
Note: P/C = Parent or Caregiver; reference group = Arapaho Cts.																		
bold = p<.05																		

Results of these tests using DHA development dummies are presented in Exhibit A-1(A-C), those using census tract dummies in Exhibit A-2(A-C). Exhibit A-1shows that there were few statistically significant differences in individual characteristics across the various DHA developments: of 1,482 coefficients across all family size strata only 72 (5%) were so.[27] The null hypothesis that all coefficients were zero could not be rejected in 86 percent of the regressions in Exhibit A-1, according to F tests. A similar aggregate portrait emerges from Exhibit A-2: of 3,640 coefficients across all family size strata only 202 (5.5%) were significant.[28] The null hypothesis that all coefficients were zero could not be rejected in 87 percent of the regressions in Exhibit A-2, according to F tests.

Examination of individual characteristics reveals, however, that African Americans (with any number of children) were not proportionally distributed across all DHA developments or census tracts where such developments were located.[29] We cannot be sure whether any systematic actions by the DHA and/or geographic selections by African American applicants to DHA produced this result, but the outcome was clearly inconsistent with quasi-random assignment across developments or neighborhoods. The second notable revelation was that DHA residents with disabilities (most of whom had two or fewer children) were also allocated non-randomly to a relatively few developments, producing a distinct profile for their census tract characteristics. This is not surprising, inasmuch as certain DHA developments are designed especially for elderly and disabled residents and other, scattered-site developments are rendered off-limits to the disabled because of expectations of tenant contributions to dwelling and grounds maintenance.

With these two exceptions, however, we think this evidence offers a compelling case that DHA allocations were quasi-random across developments and neighborhoods because only three (3) percent of the remaining coefficients proved statistically significant in both Exhibits A-1and A-2 and there was no pattern to these coefficients. This percentage could have been generated by chance even if true random assignment had been undertaken.

[27] The percentages across the 0-1 child, 2 children, 3+ children strata were 3%, 6%, 6%, respectively.

[28] The percentages across the 0-1 child, 2 children, 3+ children strata were 4%, 6%, 6%, respectively.

[29] Seventeen of the 37 DHA site coefficients were significantly different from zero for the African American characteristic combining both family size strata; the corresponding figure for the 97 tract coefficients was 44. F tests for this characteristic consistently rejected the null hypothesis of no relationship with location for all three child categories of African American applicants, for both DHA site and census tract regressions.

Exhibit A-2A. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 0-1 Child

	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0100	-2.46e-14	1.000	-1.000	0.604	-17.00	0.190	-1.000	**0.042**	-1.000	0.547	-1.000	0.605	9.19e-14	1.000	-1.000	0.605
2.0200	-0.267	0.524	-0.733	0.602	-12.11	0.201	-0.933	**0.009**	-0.867	0.474	-0.600	0.671	0.333	0.826	-0.333	0.813
3.0100	-1.000	0.082	-1.000	0.604	-17.00	0.190	-5.22e-14	1.000	-7.97e-15	1.000	-3.06e-14	1.000	1.000	0.630	-1.84e-14	1.000
3.0200	-0.667	0.155	-0.333	0.832	-10.67	0.314	-1.000	**0.013**	-1.000	0.460	-0.667	0.672	0.333	0.844	-0.333	0.833
5.0200	-0.500	0.314	8.11e-15	1.000	2.350	0.834	-1.000	**0.019**	-1.000	0.486	-0.500	0.765	1.000	0.579	-1.85e-14	1.000
7.0100	-2.46e-14	1.000	-0.333	0.832	-2.000	0.850	-1.000	**0.013**	-0.667	0.623	-0.333	0.833	1.000	0.556	-1.79e-14	1.000
7.0200	-0.190	0.646	-0.476	0.733	-8.343	0.374	-0.810	**0.023**	-0.571	0.634	-0.333	0.811	0.238	0.874	-0.190	0.892
8.0000	-0.0645	0.875	-0.613	0.658	-11.32	0.225	-0.935	**0.008**	-0.581	0.626	-0.419	0.762	0.0323	0.983	-0.355	0.798
9.0200	-2.45e-14	1.000	6.88e-15	1.000	5.000	0.700	-1.000	**0.042**	-8.65e-15	1.000	-3.04e-14	1.000	1.000	0.630	-1.000	0.605
9.0300	-1.000	0.082	6.67e-15	1.000	2.000	0.877	-1.000	**0.042**	-1.000	0.547	-1.000	0.605	1.000	0.630	-1.90e-14	1.000
9.0400	-2.45e-14	1.000	6.62e-15	1.000	1.500	0.908	-5.37e-14	1.000	-1.000	0.547	-3.03e-14	1.000	1.000	0.630	-1.90e-14	1.000
10.0000	-0.500	0.254	-0.500	0.734	-7.917	0.424	-1.000	**0.008**	-0.667	0.599	-0.667	0.651	0.500	0.753	-0.333	0.821
11.0100	-0.0625	0.881	-0.625	0.656	-10.90	0.249	-0.938	**0.009**	-0.688	0.570	-0.250	0.859	0.375	0.804	-0.375	0.790
14.0100	-2.47e-14	1.000	-1.000	0.604	-17	0.190	-1.000	**0.042**	-1.000	0.547	-1.000	0.605	9.18e-14	1.000	-1.000	0.605
15.0000	-0.333	0.476	-0.667	0.672	-12.00	0.257	-1.000	**0.013**	-0.333	0.806	-3.14e-14	1.000	9.19e-14	1.000	-1.88e-14	1.000
16.0000	-0.0667	0.873	-0.333	0.813	-5.205	0.582	-0.800	**0.026**	-0.333	0.783	-0.267	0.850	0.400	0.792	-0.200	0.887
18.0000	-2.44e-14	1.000	-1.000	0.549	-17.00	0.131	-0.500	0.238	-0.500	0.728	-0.500	0.765	9.19e-14	1.000	-1.85e-14	1.000
19.0000	-0.305	0.455	-0.695	0.613	-5.769	0.533	-0.881	**0.012**	-0.983	0.406	-0.712	0.605	0.102	0.945	-0.508	0.712
21.0000	-2.45e-14	1.000	5.87e-15	1.000	2.000	0.877	-1.000	**0.042**	-9.41e-15	1.000	-3.01e-14	1.000	1.000	0.630	-1.98e-14	1.000
23.0000	-2.44e-14	1.000	-0.500	0.764	-9.500	0.398	-0.500	0.238	-9.48e-15	1.000	-0.500	0.765	9.24e-14	1.000	-1.98e-14	1.000
24.0300	-0.167	0.689	-1.000	0.475	-8.504	0.367	-0.722	**0.043**	-1.111	0.357	-1.000	0.476	-0.111	0.941	-0.778	0.580
31.0200	-1.000	0.082	-1.000	0.604	-17.00	0.190	-5.51e-14	1.000	-1.000	0.547	-3.00e-14	1.000	9.26e-14	1.000	-2.01e-14	1.000
35.0000	-2.43e-14	1.000	5.30e-15	1.000	-1.000	0.938	-1.000	**0.042**	-9.87e-15	1.000	-2.98e-14	1.000	9.27e-14	1.000	-2.00e-14	1.000
36.0200	-2.43e-14	1.000	-0.500	0.764	-7.750	0.490	-1.000	**0.019**	-1.000	0.486	-0.500	0.765	0.500	0.781	-2.02e-14	1.000
37.0200	-2.43e-14	1.000	-1.000	0.604	-17.00	0.190	-5.52e-14	1.000	-1.00e-14	1.000	-3.00e-14	1.000	9.27e-14	1.000	-2.02e-14	1.000
37.0300	-0.500	0.314	-0.500	0.764	-8.325	0.458	-0.500	0.238	-1.000	0.486	-1.000	0.550	1.000	0.579	-2.02e-14	1.000
40.0300	-2.44e-14	1.000	4.81e-15	1.000	7.000	0.589	-1.000	**0.042**	-1.000	0.547	-3.01e-14	1.000	1.000	0.630	-2.03e-14	1.000
41.0100	-2.44e-14	1.000	4.92e-15	1.000	0.250	0.985	-1.000	**0.042**	-1.000	0.547	-3.01e-14	1.000	9.26e-14	1.000	-2.03e-14	1.000
41.0200	-2.43e-14	1.000	-1.000	0.604	-17.00	0.190	-1.000	**0.042**	-1.03e-14	1.000	-3.02e-14	1.000	1.000	0.630	-2.03e-14	1.000
41.0300	-0.333	0.476	-0.333	0.832	-1.250	0.906	-0.667	0.096	-1.000	0.460	-1.000	0.526	0.667	0.694	-1.95e-14	1.000
41.0400	-0.500	0.314	4.70e-15	1.000	1.450	0.897	-1.000	**0.019**	-1.000	0.486	-0.500	0.765	1.000	0.579	-2.05e-14	1.000
43.0100	-0.500	0.314	-1.000	0.549	-17.00	0.131	-5.60e-14	1.000	-1.000	0.486	-0.500	0.765	0.500	0.781	-0.500	0.765
44.0400	-2.48e-14	1.000	-0.333	0.832	-4.763	0.653	-0.667	0.096	-1.000	0.460	-1.000	0.526	0.667	0.694	-0.667	0.673
45.0100	-0.333	0.476	-0.333	0.832	-3.000	0.777	-1.000	**0.013**	-1.000	0.460	-0.667	0.672	0.333	0.844	-0.667	0.673
45.0200	-0.200	0.633	-1.200	0.394	-10.66	0.261	-0.733	**0.041**	-0.733	0.545	-1.000	0.478	-0.400	0.792	-0.867	0.540
46.0100	-1.000	0.082	8.40e-15	1.000	3.000	0.817	-1.000	**0.042**	-1.000	0.547	-3.05e-14	1.000	9.19e-14	1.000	-1.83e-14	1.000
46.0200	-1.000	0.082	8.34e-15	1.000	1.000	0.938	-1.000	**0.042**	-1.000	0.547	-1.000	0.605	9.18e-14	1.000	-1.000	0.605
50.0100	-1.000	0.082	8.66e-15	1.000	4.000	0.758	-5.18e-14	1.000	-1.000	0.547	-3.06e-14	1.000	1.000	0.630	-1.82e-14	1.000
51.0200	-1.000	0.045	-0.500	0.764	-7.775	0.489	-1.000	**0.019**	-1.000	0.486	-0.500	0.765	9.18e-14	1.000	-1.82e-14	1.000
54.0000	-2.46e-14	**1.000**	-1.000	0.604	-17	0.190	-1.000	**0.042**	-1.000	0.547	-1.000	0.605	9.18e-14	1.000	-1.000	0.605
55.0300	-0.333	0.435	-0.556	0.699	-9.111	0.346	-0.889	**0.015**	-0.889	0.472	-0.444	0.757	0.333	0.830	-0.111	0.939
68.0900	-2.49e-14	1.000	-0.333	0.832	-3.467	0.743	-1.000	**0.013**	-0.667	0.623	-0.333	0.833	1.000	0.556	-0.667	0.673
83.0300	-1.000	0.082	4.36e-15	1.000	17.00	0.190	-1.000	**0.042**	-1.000	0.547	-3.05e-14	1.000	1.000	0.630	-2.06e-14	1.000
Observations	261		261		261		261		261		261		261		261	
F-Test	1.524		0.242		1.352		1.709		0.306		0.260		0.287		0.216	
p value	**0.0276**		1.000		0.0853		**0.00711**		1.000		1.000		1.000		1.000	
Pseudo R^2	0.232		0.0458		0.211		0.253		0.0572		0.0489		0.0538		0.0411	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																
bold = p<.05																

Exhibit A-2A. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 0-1 Child (cont.)

	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0100	3.54e-14	1.000	9.63e-14	1.000	4.03e-14	1.000	7.87e-14	1.000	2.98e-14	1.000	2.31e-13	1.000	1.17e-12	1.000	-2.37e-14	1.000	-1.36e-15	1.000
2.0200	0.333	0.825	0.467	0.789	0.133	0.950	-0.200	0.911	0.467	0.342	5.333	0.565	7.533	0.536	-0.133	0.660	0.133	0.525
3.0100	1.000	0.628	9.63e-14	1.000	4.06e-14	1.000	7.87e-14	1.000	1.000	0.138	12.00	0.345	1.17e-12	1.000	-2.37e-14	1.000	-1.36e-15	1.000
3.0200	0.667	0.692	0.667	0.732	1.667	0.484	7.88e-14	1.000	3.08e-14	1.000	2.02e-13	1.000	9.000	0.509	-2.35e-14	1.000	-1.22e-15	1.000
5.0200	0.500	0.780	1.000	0.628	-4.000	0.114	0.500	0.813	2.99e-14	1.000	2.33e-13	1.000	25.00	0.085	-2.37e-14	1.000	-1.36e-15	1.000
7.0100	0.333	0.843	0.667	0.732	1.333	0.575	0.333	0.867	0.333	0.544	1.98e-13	1.000	22.00	0.107	-2.35e-14	1.000	-1.22e-15	1.000
7.0200	0.333	0.823	0.524	0.762	0.238	0.910	-0.0952	0.957	0.429	0.379	6.429	0.484	10.62	0.379	-0.0952	0.751	0.0952	0.647
8.0000	0.290	0.845	0.0645	0.970	0.548	0.793	0.161	0.927	0.258	0.593	8.065	0.377	12.42	0.301	-0.0645	0.829	-1.62e-15	1.000
9.0200	3.43e-14	1.000	9.63e-14	1.000	4.20e-14	1.000	7.88e-14	1.000	1.000	0.138	2.41e-13	1.000	25.00	0.135	-2.38e-14	1.000	1.000	**0.001**
9.0300	1.000	0.628	1.000	0.675	8.000	**0.006**	4.000	0.103	1.000	0.138	2.41e-13	1.000	22.00	0.188	-2.38e-14	1.000	-1.35e-15	1.000
9.0400	1.000	0.628	9.62e-14	1.000	2.000	0.493	7.88e-14	1.000	3.03e-14	1.000	2.41e-13	1.000	18.00	0.281	-2.39e-14	1.000	-1.34e-15	1.000
10.0000	0.333	0.832	0.333	0.855	0.833	0.708	0.667	0.721	0.500	0.331	16.17	0.096	1.12e-12	1.000	-2.31e-14	1.000	-1.18e-15	1.000
11.0100	0.250	0.868	0.438	0.801	0.750	0.724	-0.312	0.861	0.375	0.444	3.813	0.680	10.19	0.402	-2.36e-14	1.000	-1.43e-15	1.000
14.0100	1.000	0.628	9.65e-14	1.000	3.94e-14	1.000	7.81e-14	1.000	2.99e-14	1.000	2.28e-13	1.000	1.17e-12	1.000	-2.36e-14	1.000	-1.31e-15	1.000
15.0000	0.333	0.843	0.333	0.864	2.000	0.401	7.86e-14	1.000	0.333	0.544	12.67	0.222	25.33	0.064	-2.36e-14	1.000	-1.25e-15	1.000
16.0000	0.467	0.757	-0.200	0.909	0.600	0.778	0.133	0.940	0.467	0.342	5.467	0.555	13.80	0.258	-0.133	0.660	0.0667	0.751
18.0000	0.500	0.780	1.000	0.628	0.500	0.843	0.500	0.813	0.500	0.391	2.28e-13	1.000	7.000	0.628	-2.36e-14	1.000	-1.34e-15	1.000
19.0000	-0.186	0.899	0.0508	0.976	0.678	0.744	0.203	0.907	0.237	0.621	6.169	0.496	10.20	0.391	-0.102	0.731	0.0508	0.804
21.0000	3.63e-14	1.000	9.65e-14	1.000	4.32e-14	1.000	7.66e-14	1.000	1.000	0.138	14.00	0.271	17.00	0.309	-2.37e-14	1.000	-1.27e-15	1.000
23.0000	3.64e-14	1.000	9.65e-14	1.000	3.000	0.235	5.000	**0.019**	0.500	0.391	2.43e-13	1.000	13.50	0.350	-2.37e-14	1.000	-1.26e-15	1.000
24.0300	-0.111	0.941	-0.333	0.847	1.500	0.479	0.667	0.708	0.556	0.256	5.111	0.579	12.06	0.320	-0.167	0.580	0.0556	0.790
31.0200	3.62e-14	1.000	1.000	0.675	4.38e-14	1.000	7.63e-14	1.000	3.11e-14	1.000	2.48e-13	1.000	27.00	0.107	-1.000	**0.017**	-1.25e-15	1.000
35.0000	3.62e-14	1.000	9.65e-14	1.000	4.38e-14	1.000	7.63e-14	1.000	3.11e-14	1.000	2.48e-13	1.000	27.00	0.107	-2.37e-14	1.000	-1.24e-15	1.000
36.0200	3.62e-14	1.000	9.64e-14	1.000	0.500	0.843	0.500	0.813	0.500	0.391	9.000	0.413	13.50	0.350	-2.38e-14	1.000	-1.23e-15	1.000
37.0200	3.62e-14	1.000	1.000	0.675	4.43e-14	1.000	7.63e-14	1.000	3.11e-14	1.000	15.00	0.238	1.19e-12	1.000	-2.37e-14	1.000	-1.25e-15	1.000
37.0300	3.62e-14	1.000	9.65e-14	1.000	4.45e-14	1.000	7.64e-14	1.000	3.12e-14	1.000	2.50e-13	1.000	8.500	0.556	-2.37e-14	1.000	-1.23e-15	1.000
40.0300	3.61e-14	1.000	9.64e-14	1.000	4.47e-14	1.000	7.63e-14	1.000	3.12e-14	1.000	2.51e-13	1.000	27.00	0.107	-1.000	**0.017**	-1.23e-15	1.000
41.0100	1.000	0.628	1.000	0.675	1.000	0.731	2.000	0.414	3.12e-14	1.000	2.51e-13	1.000	10.00	0.549	-2.38e-14	1.000	-1.23e-15	1.000
41.0200	3.61e-14	1.000	1.000	0.675	4.46e-14	1.000	7.64e-14	1.000	3.13e-14	1.000	2.51e-13	1.000	1.20e-12	1.000	-2.38e-14	1.000	-1.23e-15	1.000
41.0300	0.667	0.692	0.333	0.864	2.000	0.401	7.74e-14	1.000	0.667	0.225	5.000	0.630	18.00	0.187	-0.333	0.325	0.333	0.156
41.0400	0.500	0.780	9.64e-14	1.000	1.000	0.692	7.63e-14	1.000	3.13e-14	1.000	9.500	0.388	15.00	0.300	-2.38e-14	1.000	-1.22e-15	1.000
43.0100	3.61e-14	1.000	0.500	0.809	-3.500	0.166	3.000	0.158	3.13e-14	1.000	2.52e-13	1.000	21.00	0.147	-0.500	0.165	-1.22e-15	1.000
44.0400	0.333	0.843	0.333	0.864	0.333	0.889	7.87e-14	1.000	0.667	0.225	2.14e-13	1.000	15.00	0.271	-2.36e-14	1.000	-1.27e-15	1.000
45.0100	0.333	0.843	-2.333	0.232	1.667	0.484	0.667	0.739	0.667	0.225	3.333	0.748	7.000	0.607	-2.36e-14	1.000	-1.31e-15	1.000
45.0200	-0.267	0.859	-0.267	0.878	1.000	0.638	0.667	0.709	0.267	0.587	4.467	0.630	12.07	0.322	-0.133	0.660	-1.24e-15	1.000
46.0100	3.55e-14	1.000	1.000	0.675	4.00e-14	1.000	7.86e-14	1.000	1.000	0.138	2.30e-13	1.000	27.00	0.107	-2.36e-14	1.000	-1.35e-15	1.000
46.0200	1.000	0.628	9.64e-14	1.000	2.000	0.493	7.86e-14	1.000	2.99e-14	1.000	2.31e-13	1.000	21.00	0.209	-2.36e-14	1.000	-1.34e-15	1.000
50.0100	1.000	0.628	1.000	0.675	3.97e-14	1.000	7.85e-14	1.000	2.99e-14	1.000	2.29e-13	1.000	16.00	0.338	-2.36e-14	1.000	-1.34e-15	1.000
51.0200	3.59e-14	1.000	9.65e-14	1.000	3.96e-14	1.000	7.85e-14	1.000	2.99e-14	1.000	2.30e-13	1.000	5.500	0.703	-2.36e-14	1.000	-1.33e-15	1.000
54.0000	3.60e-14	1.000	9.66e-14	1.000	2.000	0.493	1.000	0.683	2.99e-14	1.000	2.29e-13	1.000	1.17e-12	1.000	-2.36e-14	1.000	-1.34e-15	1.000
55.0300	0.333	0.828	0.556	0.755	1.444	0.506	0.444	0.807	0.222	0.657	7.444	0.432	14.00	0.261	-2.37e-14	1.000	-1.31e-15	1.000
68.0900	0.667	0.692	0.333	0.864	-2.667	0.263	0.333	0.867	0.667	0.225	2.18e-13	1.000	15.33	0.261	-0.333	0.325	-8.30e-16	1.000
83.0300	3.60e-14	1.000	1.000	0.675	1.000	0.731	1.000	0.683	3.15e-14	1.000	2.56e-13	1.000	27.00	0.107	-2.38e-14	1.000	-1.21e-15	1.000
Observations	261		261		261		261		261		261		261		261		261	
F-Test	0.259		0.383		1.299		0.777		0.972		0.773		0.981		0.865		0.905	
p value	1.000		1.000		0.117		0.837		0.526		0.843		0.511		0.709		0.643	
Pseudo R^2	0.0488		0.0706		0.205		0.133		0.162		0.133		0.163		0.146		0.152	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																		
bold = p<.05																		

Exhibit A-2A. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 0-1 Child (cont.)

	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0100	3.92e-14	1.000	19.00	0.195	3.94e-14	1.000	-1.000	0.134	2.20e-14	1.000	-3.11e-14	1.000	1.51e-13	1.000	1.000	0.832	7.000	0.161
2.0200	0.0667	0.849	5.867	0.583	0.200	0.677	-0.533	0.273	0.0667	0.842	-0.267	0.580	11.87	0.245	-0.667	0.846	3.400	0.351
3.0100	1.000	**0.038**	24.00	0.102	3.92e-14	1.000	-1.000	0.134	2.20e-14	1.000	-1.000	0.130	31.00	**0.027**	-5.000	0.288	7.000	0.161
3.0200	0.333	0.396	14.33	0.231	3.87e-14	1.000	-1.000	0.067	2.20e-14	1.000	-3.12e-14	1.000	5.000	0.661	1.333	0.728	3.667	0.368
5.0200	3.92e-14	1.000	3.500	0.783	0.500	0.380	-0.500	0.386	2.19e-14	1.000	-3.09e-14	1.000	5.000	0.679	-2.000	0.623	4.500	0.298
7.0100	3.93e-14	1.000	7.333	0.540	1.000	0.063	-0.667	0.221	0.333	0.372	-3.12e-14	1.000	15.00	0.189	-1.667	0.664	1.667	0.682
7.0200	0.0952	0.784	0.619	0.953	0.286	0.548	-0.714	0.139	0.190	0.565	-0.381	0.425	8.571	0.396	-0.238	0.944	4.429	0.220
8.0000	0.0323	0.926	-2.194	0.835	0.387	0.413	-0.742	0.122	0.0323	0.922	-0.419	0.376	9.516	0.343	-0.581	0.864	2.548	0.477
9.0200	3.90e-14	1.000	-3.000	0.838	3.86e-14	1.000	-1.000	0.134	2.19e-14	1.000	-3.08e-14	1.000	5.000	0.720	-2.000	0.671	2.000	0.688
9.0300	3.90e-14	1.000	-7.000	0.633	3.86e-14	1.000	-1.000	0.134	2.19e-14	1.000	-1.000	0.130	18.00	0.198	-2.000	0.671	-1.000	0.841
9.0400	3.90e-14	1.000	5.03e-13	1.000	3.86e-14	1.000	-1.000	0.134	2.19e-14	1.000	-1.000	0.130	1.57e-13	1.000	3.000	0.524	7.000	0.161
10.0000	0.333	0.364	3.000	0.789	0.167	0.740	-0.833	0.102	2.19e-14	1.000	-0.333	0.508	4.167	0.696	1.667	0.643	4.167	0.274
11.0100	3.94e-14	1.000	-1.750	0.870	0.438	0.362	-0.563	0.247	2.21e-14	1.000	-0.188	0.696	12.19	0.231	0.437	0.898	1.375	0.705
14.0100	3.90e-14	1.000	16.00	0.275	4.01e-14	1.000	-9.49e-14	1.000	2.19e-14	1.000	-3.14e-14	1.000	5.000	0.720	3.000	0.524	4.000	0.423
15.0000	3.92e-14	1.000	0.667	0.956	0.667	0.215	-0.333	0.540	2.21e-14	1.000	-0.333	0.536	17.33	0.129	0.333	0.931	5.333	0.191
16.0000	0.133	0.704	-2.600	0.808	0.667	0.166	-0.733	0.132	0.133	0.689	-0.600	0.214	13.80	0.176	1.000	0.771	3.067	0.400
18.0000	3.87e-14	1.000	25.00	**0.050**	4.05e-14	1.000	-0.500	0.386	2.18e-14	1.000	-3.13e-14	1.000	5.500	0.649	-2.500	0.539	2.500	0.563
19.0000	0.220	0.520	0.576	0.956	0.458	0.329	-0.508	0.285	0.102	0.755	-0.288	0.540	10.02	0.314	-0.0169	0.996	3.068	0.388
21.0000	3.86e-14	1.000	-7.000	0.633	1.000	0.129	-1.000	0.134	2.18e-14	1.000	-3.15e-14	1.000	1.000	0.943	3.000	0.524	1.000	0.841
23.0000	3.86e-14	1.000	-2.500	0.844	1.000	0.080	-1.000	0.084	2.18e-14	1.000	-0.500	0.382	9.500	0.432	0.500	0.902	1.500	0.728
24.0300	0.111	0.750	6.833	0.521	0.833	0.082	-0.722	0.136	0.111	0.738	-0.333	0.487	13.28	0.191	-0.111	0.974	2.333	0.520
31.0200	3.84e-14	1.000	26.00	0.077	4.22e-14	1.000	-1.000	0.134	2.18e-14	1.000	-3.15e-14	1.000	21.00	0.133	-10.00	**0.034**	-4.000	0.423
35.0000	1.000	**0.038**	-3.000	0.838	1.000	0.129	-1.000	0.134	2.18e-14	1.000	-1.000	0.130	-1.000	0.943	3.000	0.524	7.000	0.161
36.0200	3.85e-14	1.000	27.00	**0.034**	1.000	0.080	-0.500	0.386	0.500	0.207	-3.16e-14	1.000	2.500	0.836	3.000	0.462	-3.000	0.487
37.0200	1.000*	0.038	-6.000	0.682	1.000	0.129	-9.88e-14	1.000	2.18e-14	1.000	-3.15e-14	1.000	-1.000	0.943	3.000	0.524	5.000	0.316
37.0300	3.85e-14	1.000	13.00	0.306	0.500	0.380	-9.90e-14	1.000	2.18e-14	1.000	-3.16e-14	1.000	4.500	0.709	-1.000	0.806	5.000	0.247
40.0300	3.85e-14	1.000	3.000	0.838	1.000	0.129	-1.000	0.134	2.19e-14	1.000	-1.000	0.130	5.000	0.720	-2.000	0.671	3.000	0.547
41.0100	3.85e-14	1.000	-6.000	0.682	1.000	0.129	-1.000	0.134	2.18e-14	1.000	-1.000	0.130	21.00	0.133	2.000	0.671	7.000	0.161
41.0200	3.85e-14	1.000	-9.000	0.539	1.000	0.129	-1.000	0.134	2.18e-14	1.000	-3.16e-14	1.000	30.00	**0.032**	-10.00	**0.034**	3.04e-13	1.000
41.0300	0.333	0.396	2.667	0.823	0.333	0.535	-1.000	0.067	0.333	0.372	-3.26e-14	1.000	3.333	0.770	-0.333	0.931	1.333	0.743
41.0400	3.85e-14	1.000	4.500	0.723	1.000	0.080	-0.500	0.386	0.500	0.207	-0.500	0.382	1.87e-13	1.000	2.500	0.539	3.05e-13	1.000
43.0100	0.500	0.230	2.000	0.875	1.000	0.080	-0.500	0.386	2.18e-14	1.000	-3.16e-14	1.000	11.00	0.363	-3.500	0.391	2.000	0.643
44.0400	3.91e-14	1.000	6.333	0.596	1.000	0.063	-1.000	0.067	0.667	0.075	-3.14e-14	1.000	7.667	0.501	-4.000	0.298	5.333	0.191
45.0100	0.667	0.090	-5.000	0.676	3.97e-14	1.000	-0.333	0.540	0.333	0.372	-0.333	0.536	6.667	0.558	2.000	0.603	4.333	0.288
45.0200	0.200	0.569	3.733	0.727	0.400	0.405	-0.933	0.056	0.333	0.318	-0.400	0.407	8.800	0.388	0.733	0.831	3.533	0.332
46.0100	3.91e-14	1.000	-8.000	0.585	3.94e-14	1.000	-1.000	0.134	2.20e-14	1.000	-3.12e-14	1.000	10.00	0.473	2.000	0.671	5.000	0.316
46.0200	1.000	**0.038**	7.000	0.633	3.95e-14	1.000	-9.52e-14	1.000	2.20e-14	1.000	-3.12e-14	1.000	7.000	0.616	-4.000	0.395	4.000	0.423
50.0100	3.90e-14	1.000	-1.000	0.946	1.000	0.129	-1.000	0.134	1.000	**0.029**	-3.13e-14	1.000	8.000	0.566	1.000	0.832	2.90e-13	1.000
51.0200	0.500	0.230	-3.500	0.783	1.000	0.080	-0.500	0.386	2.20e-14	1.000	-3.13e-14	1.000	4.500	0.709	3.000	0.462	7.000	0.106
54.0000	3.90e-14	1.000	27.00	0.066	1.000	0.129	-1.000	0.134	2.20e-14	1.000	-3.13e-14	1.000	19.00	0.174	-2.000	0.671	3.000	0.547
55.0300	0.111	0.756	-0.111	0.992	0.111	0.821	-0.667	0.180	0.111	0.744	-0.222	0.651	11.89	0.253	1.111	0.751	3.222	0.386
68.0900	4.00e-14	1.000	8.667	0.469	0.667	0.215	-1.000	0.067	0.333	0.372	-0.333	0.536	7.000	0.539	1.667	0.664	0.667	0.870
83.0300	1.000	**0.038**	12.00	0.413	4.23e-14	1.000	-1.000	0.134	2.18e-14	1.000	-3.17e-14	1.000	4.000	0.774	-7.000	0.138	2.000	0.688
Observations	261		261		261		261		261		261		261		261		261	
F-Test	1.513		1.829		1.938		1.093		1.055		0.944		0.928		1.290		0.964	
p value	**0.0299**		**0.00277**		**0.00113**		0.333		0.390		0.576		0.603		0.123		0.540	
Pseudo R^2	0.231		0.266		0.277		0.178		0.173		0.158		0.155		0.204		0.160	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																		
bold = p<.05																		

Exhibit A-2B. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 2 Children

	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0200	-0.167	0.601	-0.583	0.604	-12.13	0.086	0.0833	0.722	0.583	0.536	0.167	0.825	-0.417	0.700	-0.417	0.714
3.0100	3.29e-15	1.000	-0.667	0.620	-12.00	0.154	3.44e-15	1.000	-1.59e-15	1.000	-0.167	0.854	0.167	0.897	-0.333	0.806
4.0100	3.00e-15	1.000	-3.72e-14	1.000	0.900	0.936	3.01e-15	1.000	-8.42e-16	1.000	-0.500	0.680	0.500	0.773	-1	0.584
4.0200	2.96e-15	1.000	-3.71e-14	1.000	0.500	0.965	1.000	**0.008**	1.000	0.509	0.500	0.680	0.500	0.773	2.87e-15	1.000
5.0200	2.89e-15	1.000	-0.500	0.734	-7.750	0.400	3.39e-15	1.000	-1.27e-15	1.000	-2.82e-14	1.000	-0.500	0.724	-0.500	0.737
7.0100	-0.500	0.231	-0.500	0.734	-9.500	0.303	0.500	0.104	-8.29e-16	1.000	-2.83e-14	1.000	-0.500	0.724	-0.500	0.737
7.0200	-0.267	0.396	-0.733	0.508	-13.97	**0.045**	0.133	0.564	0.533	0.566	0.167	0.823	-0.300	0.778	-0.267	0.812
8.0000	-0.250	0.419	-0.400	0.714	-8.889	0.194	0.100	0.660	0.600	0.513	0.200	0.785	-0.100	0.924	-0.250	0.821
9.0200	-0.500	0.231	-0.500	0.734	-18.50	**0.046**	3.40e-15	1.000	0.500	0.686	0.500	0.613	-0.500	0.724	3.14e-15	1.000
9.0300	-0.500	0.167	-0.500	0.695	-10.37	0.194	3.38e-15	1.000	0.500	0.640	-2.82e-14	1.000	0.250	0.838	-0.250	0.846
9.0500	-1.000	0.051	-3.64e-14	1.000	-1.250	0.912	3.41e-15	1.000	-1.48e-15	1.000	0.500	0.680	-0.500	0.773	-1.000	0.584
10.0000	3.04e-15	1.000	-0.250	0.845	-6.625	0.406	0.500	0.061	0.750	0.483	0.250	0.770	-0.500	0.683	-0.250	0.846
11.0100	3.71e-15	1.000	-0.429	0.717	-8.190	0.268	0.286	0.246	0.286	0.773	0.0714	0.928	0.0714	0.950	-0.143	0.905
11.0200	-0.500	0.231	-0.500	0.734	-9.425	0.306	3.37e-15	1.000	-1.16e-15	1.000	0.500	0.613	0.500	0.724	2.93e-15	1.000
13.0100	-1.000	0.051	-1.000	0.579	-18.50	0.102	3.13e-15	1.000	-6.77e-16	1.000	0.500	0.680	-0.500	0.773	2.98e-15	1.000
13.0200	-1.000	0.051	-1.000	0.579	-18.50	0.102	3.07e-15	1.000	1.000	0.509	0.500	0.680	-0.500	0.773	2.91e-15	1.000
14.0200	-0.250	0.489	-0.250	0.845	-4.398	0.581	3.12e-15	1.000	0.250	0.815	-0.250	0.770	0.250	0.838	-0.250	0.846
14.0300	-1.000	0.051	-3.61e-14	1.000	8.500	0.451	3.10e-15	1.000	-6.14e-16	1.000	-0.500	0.680	0.500	0.773	-1.000	0.584
15.0000	2.81e-15	1.000	-5.000	**0.001**	-11.75	0.203	0.500	0.104	1.000	0.418	-2.82e-14	1.000	-5.000	**0.001**	-5.000	**0.001**
16.0000	-0.278	0.372	-1.056	0.337	-10.96	0.111	0.111	0.627	-2.09e-15	1.000	0.222	0.763	-0.722	0.494	-0.556	0.617
18.0000	3.47e-15	1.000	-0.667	0.620	-12.50	0.138	3.38e-15	1.000	0.333	0.767	-0.167	0.854	-0.167	0.897	-0.333	0.806
19.0000	-0.277	0.359	-0.574	0.589	-6.530	0.326	0.0638	0.773	0.383	0.668	0.160	0.823	-0.223	0.827	-0.532	0.621
21.0000	2.93e-15	1.000	-1.000	0.497	-18.50	**0.046**	3.35e-15	1.000	0.500	0.686	-2.81e-14	1.000	-0.500	0.724	-0.500	0.737
23.0000	2.90e-15	1.000	-3.71e-14	1.000	-5.075	0.524	3.16e-15	1.000	0.500	0.640	0.250	0.770	0.250	0.838	-0.250	0.846
24.0300	-0.111	0.733	-0.333	0.772	-7.989	0.268	0.333	0.165	-0.667	0.490	0.0556	0.943	-0.167	0.880	-0.333	0.775
31.0100	2.96e-15	1.000	-3.70e-14	1.000	6.500	0.564	3.11e-15	1.000	1.000	0.509	0.500	0.680	0.500	0.773	2.91e-15	1.000
35.0000	-0.143	0.669	-0.286	0.809	-2.757	0.709	3.56e-15	1.000	0.286	0.773	0.0714	0.928	0.0714	0.950	-0.286	0.811
36.0100	2.96e-15	1.000	-0.500	0.734	-7.000	0.447	3.10e-15	1.000	0.500	0.686	0.500	0.613	-0.500	0.724	-0.500	0.737
36.0200	2.97e-15	1.000	-0.500	0.734	-8.000	0.385	0.500	0.104	0.500	0.686	-2.83e-14	1.000	0.500	0.724	-0.500	0.737
36.0300	4.07e-15	1.000	-3.57e-14	1.000	0.333	0.968	3.30e-15	1.000	-2.52e-15	1.000	-3.167	**0.001**	-0.500	0.699	-0.333	0.806
37.0300	2.96e-15	1.000	-3.72e-14	1.000	1.100	0.922	3.07e-15	1.000	-9.69e-16	1.000	-0.500	0.680	0.500	0.773	2.89e-15	1.000
41.0100	3.94e-15	1.000	-3.57e-14	1.000	-3.390	0.687	0.333	0.235	0.333	0.767	0.167	0.854	-0.167	0.897	-0.333	0.806
41.0200	2.91e-15	1.000	-3.68e-14	1.000	6.000	0.595	3.27e-15	1.000	-1.07e-15	1.000	-0.500	0.680	0.500	0.773	2.94e-15	1.000
41.0300	4.14e-15	1.000	-3.56e-14	1.000	2.833	0.736	3.26e-15	1.000	0.333	0.767	0.167	0.854	0.167	0.897	2.60e-15	1.000
41.0400	2.95e-15	1.000	-3.69e-14	1.000	1.500	0.894	3.21e-15	1.000	-1.04e-15	1.000	0.500	0.680	0.500	0.773	2.93e-15	1.000
42.0100	2.94e-15	1.000	-3.71e-14	1.000	0.500	0.965	3.14e-15	1.000	-1.03e-15	1.000	0.500	0.680	0.500	0.773	2.87e-15	1.000
42.0200	-1.000	0.051	-3.70e-14	1.000	-0.480	0.966	3.10e-15	1.000	-9.44e-16	1.000	0.500	0.680	-0.500	0.773	-1	0.584
43.0100	-1.000	0.051	-3.72e-14	1.000	-1.250	0.912	1.000	**0.008**	1.000	0.509	-0.500	0.680	-0.500	0.773	2.88e-15	1.000
43.0400	-0.500	0.231	-0.500	0.734	-8.250	0.370	0.500	0.104	0.500	0.686	0.500	0.613	0.500	0.724	2.85e-15	1.000
44.0300	-0.500	0.231	-3.71e-14	1.000	2.375	0.796	3.08e-15	1.000	-9.93e-16	1.000	-0.500	0.613	-0.500	0.724	-1.000	0.502
44.0400	2.96e-15	1.000	-3.72e-14	1.000	-0.500	0.965	1.000	**0.008**	1.000	0.509	0.500	0.680	0.500	0.773	2.91e-15	1.000
45.0100	3.38e-15	1.000	-0.143	0.904	-3.214	0.663	3.68e-15	1.000	0.286	0.773	-0.0714	0.928	-0.357	0.753	-0.143	0.905
45.0200	-0.308	0.332	-0.462	0.680	-10.67	0.128	0.154	0.509	0.538	0.566	0.192	0.798	-0.346	0.748	-0.0769	0.946
46.0200	2.97e-15	1.000	-1.000	0.579	-18.50	0.102	3.15e-15	1.000	1.000	0.509	0.500	0.680	-0.500	0.773	3.06e-15	1.000
47.0000	2.94e-15	1.000	-3.62e-14	1.000	-18.50	0.102	1.000	**0.008**	-7.03e-16	1.000	-0.500	0.680	-0.500	0.773	2.88e-15	1.000
48.0200	2.97e-15	1.000	-1.000	0.579	-18.50	0.102	1.000	**0.008**	-7.14e-16	1.000	0.500	0.680	0.500	0.773	3.24e-15	1.000
50.0100	-0.500	0.231	-0.500	0.734	-7.500	0.415	3.31e-15	1.000	0.500	0.686	-2.85e-14	1.000	-0.500	0.724	-1.000	0.502
54.0000	-0.250	0.448	-2.750	**0.019**	-9.937	0.173	3.24e-15	1.000	-0.750	0.443	-1.250	0.111	-2.500	**0.026**	-2.500	**0.035**
55.0300	-0.200	0.567	-0.200	0.871	-4.400	0.568	3.22e-15	1.000	0.200	0.846	0.1000	0.904	0.1000	0.933	-0.200	0.873
68.0900	2.91e-15	1.000	-1.000	0.579	-18.50	0.102	3.29e-15	1.000	-1.19e-15	1.000	-0.500	0.680	-0.500	0.773	2.87e-15	1.000
69.0100	2.96e-15	1.000	-3.59e-14	1.000	9.500	0.400	3.14e-15	1.000	-6.83e-16	1.000	0.500	0.680	-0.500	0.773	3.21e-15	1.000
83.0300	2.93e-15	1.000	-1.000	0.579	-18.50	0.102	3.13e-15	1.000	-1.07e-15	1.000	0.500	0.680	0.500	0.773	3.17e-15	1.000
85.3400	2.92e-15	1.000	-3.61e-14	1.000	1.500	0.894	3.20e-15	1.000	-7.22e-16	1.000	-0.500	0.680	0.500	0.773	3.21e-15	1.000
Observations	244		244		244		244		244		244		244		244	
F-Test	0.932		0.861		1.267		1.555		0.396		1.068		1.022		0.763	
p value	0.610		0.735		0.127		0.0168		1.000		0.365		0.445		0.876	
Pseudo R^2	0.206		0.194		0.261		0.302		0.0994		0.230		0.222		0.175	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																
bold = p<.05																

Exhibit A-2B. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 2 Children (cont.)

	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0200	0.0833	0.939	-1.833	0.242	-1.250	0.536	-0.333	0.844	0.500	0.182	3.417	0.562	-0.333	0.971	0.333	0.234	-0.417	**0.029**
3.0100	0.667	0.610	0.500	0.789	-0.833	0.730	0.500	0.805	0.667	0.137	6.333	0.369	-2.500	0.822	0.167	0.618	-0.167	0.462
4.0100	1.000	0.568	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.52e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
4.0200	1.000	0.568	-0.500	0.842	-10.50	**0.001**	0.500	0.854	1.000	0.096	12.00	0.205	12.50	0.403	0.500	0.265	-0.500	0.101
5.0200	-4.02e-14	1.000	-0.500	0.807	1.05e-13	1.000	-1.500	0.499	-2.33e-14	1.000	-2.66e-13	1.000	-9.500	0.436	0.500	0.173	-0.500	**0.045**
7.0100	-4.11e-14	1.000	0.500	0.807	1.500	0.570	-0.500	0.822	0.500	0.308	-2.52e-13	1.000	10.000	0.412	-1.06e-14	1.000	2.22e-14	1.000
7.0200	0.600	0.578	0.0333	0.983	-1.433	0.471	-1.567	0.349	0.400	0.278	7.800	0.181	3.367	0.714	0.433	0.117	-0.433	**0.021**
8.0000	0.450	0.672	-0.200	0.895	-2.350	0.231	-1.500	0.363	0.300	0.409	5.050	0.378	3.600	0.691	0.300	0.270	-0.400	**0.031**
9.0200	-4.04e-14	1.000	0.500	0.807	-5.500	**0.038**	-1.000	0.652	0.500	0.308	10.000	0.196	4.000	0.743	0.500	0.173	-0.500	**0.045**
9.0300	0.250	0.840	-0.250	0.888	-3.750	0.102	-0.500	0.795	-2.35e-14	1.000	-2.66e-13	1.000	10.50	0.321	-9.60e-15	1.000	-0.250	0.245
9.0500	-4.02e-14	1.000	-0.500	0.842	0.500	0.877	-1.500	0.581	1.000	0.096	-2.70e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
10.0000	-4.13e-14	1.000	-0.500	0.778	0.500	0.827	2.000	0.299	1.000	**0.019**	11.25	0.094	-2.750	0.795	0.500	0.116	-0.500	**0.021**
11.0100	0.286	0.803	-0.214	0.896	-0.929	0.661	-2.643	0.139	0.571	0.146	-2.93e-13	1.000	8.786	0.369	0.214	0.466	-0.214	0.282
11.0200	0.500	0.727	-1.49e-15	1.000	-1.500	0.570	-1.500	0.499	-2.36e-14	1.000	-2.64e-13	1.000	9.500	0.436	-9.66e-15	1.000	2.32e-14	1.000
13.0100	-4.06e-14	1.000	-0.500	0.842	-0.500	0.877	-0.500	0.854	-2.39e-14	1.000	-2.52e-13	1.000	14.50	0.332	0.500	0.265	-0.500	0.101
13.0200	-4.07e-14	1.000	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	19.00	**0.046**	-9.500	0.525	0.500	0.265	-0.500	0.101
14.0200	0.250	0.840	0.250	0.888	-0.250	0.913	0.250	0.897	0.250	0.556	15.50	**0.021**	-9.500	0.369	0.500	0.116	-0.500	**0.021**
14.0300	-4.06e-14	1.000	0.500	0.842	-0.500	0.877	-0.500	0.854	-2.38e-14	1.000	-2.52e-13	1.000	9.500	0.525	0.500	0.265	-0.500	0.101
15.0000	-4.500	**0.002**	-5.000	**0.015**	1.05e-13	1.000	-1.000	0.652	0.500	0.308	5.500	0.476	-9.500	0.436	0.500	0.173	-0.500	**0.045**
16.0000	-0.167	0.876	-1.167	0.445	-0.111	0.955	-0.222	0.893	0.333	0.361	5.222	0.365	2.000	0.826	0.389	0.155	-0.444	**0.017**
18.0000	0.333	0.799	-3.500	0.062	-1.167	0.629	-1.500	0.459	0.667	0.137	5.333	0.450	-9.500	0.394	0.500	0.136	-0.500	**0.028**
19.0000	0.191	0.853	-0.372	0.801	-0.968	0.612	-1.266	0.430	0.468	0.186	3.830	0.492	2.351	0.789	0.351	0.185	-0.479	**0.008**
21.0000	0.500	0.727	-4.500	**0.029**	-0.500	0.850	-1.500	0.499	-2.35e-14	1.000	7.500	0.332	-9.500	0.436	0.500	0.173	-0.500	**0.045**
23.0000	0.250	0.840	-0.250	0.888	-0.500	0.827	-0.500	0.795	0.250	0.556	-2.57e-13	1.000	9.000	0.394	0.500	0.116	-0.500	**0.021**
24.0300	0.444	0.691	-0.278	0.862	-1.278	0.536	-0.389	0.823	0.333	0.384	1.889	0.754	4.389	0.645	0.389	0.175	-0.500	**0.011**
31.0100	1.000	0.568	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.55e-13	1.000	15.50	0.300	0.500	0.265	-0.500	0.101
35.0000	0.429	0.709	0.214	0.896	-2.071	0.329	-2.214	0.214	0.429	0.276	3.143	0.612	5.214	0.594	0.0714	0.808	-0.357	0.074
36.0100	1.000	0.485	-1.46e-15	1.000	1.000	0.705	-1.000	0.652	1.000	**0.042**	-2.56e-13	1.000	4.000	0.743	0.500	0.173	-0.500	**0.045**
36.0200	-4.06e-14	1.000	-0.500	0.807	2.000	0.449	2.000	0.368	1.000	**0.042**	-2.62e-13	1.000	2.000	0.870	0.500	0.173	-0.500	**0.045**
36.0300	-4.11e-14	1.000	-0.500	0.789	-1.167	0.629	-1.167	0.565	0.333	0.456	11.33	0.109	-9.500	0.394	0.500	0.136	-0.500	**0.028**
37.0300	-4.11e-14	1.000	0.500	0.842	2.500	0.440	-1.500	0.581	-2.31e-14	1.000	-2.53e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
41.0100	0.333	0.799	0.167	0.929	-1.500	0.534	-1.500	0.459	0.667	0.137	4.667	0.508	3.833	0.731	0.500	0.136	-0.500	**0.028**
41.0200	1.000	0.568	-0.500	0.842	-1.500	0.643	4.500	0.099	1.000	0.096	-2.62e-13	1.000	9.500	0.525	0.500	0.265	-0.500	0.101
41.0300	1.000	0.444	0.167	0.929	-1.500	0.534	-1.500	0.459	0.667	0.137	-2.88e-13	1.000	1.167	0.917	0.167	0.618	-0.500	**0.028**
41.0400	1.000	0.568	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.58e-13	1.000	4.500	0.763	0.500	0.265	-0.500	0.101
42.0100	1.000	0.568	-0.500	0.842	-10.50	**0.001**	-1.500	0.581	1.000	0.096	-2.56e-13	1.000	7.500	0.616	0.500	0.265	-0.500	0.101
42.0200	-4.09e-14	1.000	-0.500	0.842	-1.500	0.643	-1.500	0.581	-2.31e-14	1.000	-2.55e-13	1.000	-9.500	0.525	-0.500	0.265	0.500	0.101
43.0100	-4.10e-14	1.000	0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	-2.54e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
43.0400	0.500	0.727	-1.48e-15	1.000	0.500	0.850	-5.500	**0.014**	1.000	**0.042**	-2.54e-13	1.000	9.500	0.436	0.500	0.173	-0.500	**0.045**
44.0300	0.500	0.727	-1.33e-15	1.000	0.500	0.850	-1.000	0.652	-2.32e-14	1.000	-2.54e-13	1.000	-9.500	0.436	0.500	0.173	-0.500	**0.045**
44.0400	1.000	0.568	0.500	0.842	-1.500	0.643	4.500	0.099	-2.31e-14	1.000	-2.53e-13	1.000	17.50	0.242	0.500	0.265	-0.500	0.101
45.0100	0.429	0.709	0.0714	0.965	-0.929	0.661	-1.214	0.495	0.143	0.716	-2.90e-13	1.000	2.071	0.832	0.500	0.090	-0.500	**0.013**
45.0200	0.308	0.777	-0.192	0.902	-1.500	0.455	-0.962	0.569	0.385	0.302	5.385	0.359	5.654	0.542	0.269	0.333	-0.500	**0.009**
46.0200	-4.05e-14	1.000	-0.500	0.842	-1.500	0.643	-1.500	0.581	1.000	0.096	19.00*	0.046	-9.500	0.525	0.500	0.265	-0.500	0.101
47.0000	-4.07e-14	1.000	0.500	0.842	-10.50	**0.001**	0.500	0.854	-2.38e-14	1.000	-2.51e-13	1.000	-9.500	0.525	0.500	0.265	-0.500	0.101
48.0200	1.000	0.568	0.500	0.842	2.500	0.440	-0.500	0.854	-2.39e-14	1.000	-2.53e-13	1.000	6.500	0.663	0.500	0.265	-0.500	0.101
50.0100	0.500	0.727	-1.05e-15	1.000	-1.000	0.705	-1.000	0.652	-2.38e-14	1.000	-2.68e-13	1.000	-9.500	0.436	0.500	0.173	-0.500	**0.045**
54.0000	-1.875	0.099	-2.375	0.143	1.05e-13	1.000	-1.000	0.569	0.500	0.197	7.000	0.252	3.500	0.717	0.375	0.196	-0.375	0.057
55.0300	0.800	0.504	0.1000	0.953	-1.300	0.556	-1.300	0.484	0.400	0.329	3.600	0.577	0.300	0.977	0.300	0.328	-0.500	**0.017**
68.0900	-4.07e-14	1.000	-0.500	0.842	-0.500	0.877	-0.500	0.854	1.000	0.096	16.00	0.092	-9.500	0.525	0.500	0.265	-0.500	0.101
69.0100	-4.06e-14	1.000	0.500	0.842	-1.500	0.643	-1.500	0.581	-2.39e-14	1.000	-2.52e-13	1.000	3.500	0.815	0.500	0.265	-0.500	0.101
83.0300	1.000	0.568	-0.500	0.842	-0.500	0.877	-0.500	0.854	1.000	0.096	-2.56e-13	1.000	3.500	0.815	0.500	0.265	-0.500	0.101
85.3400	-4.05e-14	1.000	0.500	0.842	0.500	0.877	-0.500	0.854	-2.39e-14	1.000	11.00	0.245	-9.500	0.525	0.500	0.265	-0.500	0.101
Observations	244		244		244		244		244		244		244		244		244	
F-Test	0.923		0.908		1.389		0.952		1.127		0.977		0.847		0.649		1.016	
p value	0.625		0.653		0.0571		0.572		0.277		0.525		0.758		0.967		0.456	
Pseudo R^2	0.205		0.202		0.279		0.210		0.239		0.214		0.191		0.153		0.221	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																		
bold = p<.05																		

Exhibit A-2B. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 2 Children (cont.)

	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
2.0200	1.27e-14	1.000	-5.417	0.433	0.250	0.427	0.167	0.631	-1.93e-14	1.000	-0.333	0.373	7.750	0.271	-0.750	0.789	-1.750	0.561
3.0100	1.30e-14	1.000	-2.167	0.793	3.63e-15	1.000	0.333	0.421	0.333	0.230	0.167	0.709	10.33	0.220	1.667	0.619	1.000	0.781
4.0100	1.42e-14	1.000	-11.50	0.300	3.48e-15	1.000	3.52e-15	1.000	-1.97e-14	1.000	-0.500	0.404	5.000	0.658	-12.00	**0.008**	-6.000	0.214
4.0200	1.42e-14	1.000	0.500	0.964	1.000	**0.049**	**1.000**	0.073	-1.97e-14	1.000	-0.500	0.404	3.000	0.790	-3.000	0.505	-1.000	0.836
5.0200	1.34e-14	1.000	-6.000	0.507	4.86e-15	1.000	1.97e-15	1.000	-1.94e-14	1.000	0.500	0.307	-3.000	0.745	0.500	0.892	-0.500	0.899
7.0100	1.43e-14	1.000	4.000	0.658	3.55e-15	1.000	3.54e-15	1.000	-1.97e-14	1.000	-0.500	0.307	14.50	0.117	0.500	0.892	-0.500	0.899
7.0200	0.133	0.616	-4.167	0.541	0.133	0.667	0.400	0.242	0.133	0.560	0.0333	0.928	11.27	0.105	-1.800	0.515	0.933	0.753
8.0000	0.100	0.703	-8.650	0.198	0.250	0.413	0.250	0.458	0.1000	0.657	-0.200	0.582	6.150	0.368	-0.600	0.825	-1.050	0.719
9.0200	0.500	0.158	-10.50	0.246	4.95e-15	1.000	1.52e-15	1.000	-1.94e-14	1.000	-1.09e-15	1.000	4.500	0.625	9.63e-14	1.000	-1.500	0.703
9.0300	0.250	0.414	-1.000	0.898	4.77e-15	1.000	0.500	0.204	0.250	0.343	-1.29e-15	1.000	-3.750	0.638	1.000	0.753	0.250	0.942
9.0500	1.000	**0.022**	3.500	0.752	4.46e-15	1.000	1.61e-15	1.000	1.000	**0.008**	-0.500	0.404	27.00	**0.017**	-1.000	0.824	-4.000	0.407
10.0000	1.45e-14	1.000	-4.750	0.544	0.500	0.162	0.250	0.525	0.250	0.343	-0.250	0.555	14.25	0.075	-4.250	0.182	-1.000	0.769
11.0100	1.27e-14	1.000	-4.357	0.548	0.143	0.665	0.143	0.695	0.143	0.558	0.0714	0.856	1.429	0.847	0.857	0.771	1.143	0.717
11.0200	0.500	0.158	3.500	0.699	5.09e-15	1.000	0.500	0.271	-1.94e-14	1.000	-1.28e-15	1.000	12.50	0.176	1.500	0.683	-4.500	0.254
13.0100	1.43e-14	1.000	11.50	0.300	6.17e-15	1.000	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	8.000	0.478	1.000	0.824	-2.000	0.678
13.0200	1.44e-14	1.000	-15.50	0.163	6.10e-15	1.000	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	7.000	0.535	1.000	0.824	-1.000	0.836
14.0200	0.500	0.103	5.750	0.463	0.250	0.484	0.750	0.057	-1.98e-14	1.000	-1.46e-15	1.000	1.250	0.875	0.750	0.813	-4.250	0.214
14.0300	1.000	**0.022**	-2.500	0.821	1.000	**0.049**	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	1.000	0.929	2.000	0.656	-3.000	0.534
15.0000	1.30e-14	1.000	-5.500	0.543	1.000	**0.016**	1.23e-15	1.000	-1.92e-14	1.000	-0.500	0.307	4.000	0.664	-4.000	0.276	-3.500	0.375
16.0000	0.222	0.399	-5.611	0.405	0.833	**0.007**	0.389	0.251	0.111	0.624	-0.278	0.447	4.167	0.544	-0.611	0.823	-1.778	0.545
18.0000	1.30e-14	1.000	-3.500	0.672	2.69e-15	1.000	5.80e-16	1.000	0.333	0.230	-0.167	0.709	2.333	0.781	-1.667	0.619	-0.333	0.926
19.0000	0.149	0.559	-5.585	0.393	0.553	0.064	0.213	0.516	0.0851	0.698	-0.138	0.695	5.915	0.374	-1.489	0.574	-0.851	0.765
21.0000	1.35e-14	1.000	3.000	0.740	4.92e-15	1.000	0.500	0.271	-1.94e-14	1.000	-0.500	0.307	4.500	0.625	-2.500	0.496	3.000	0.446
23.0000	1.39e-14	1.000	-2.000	0.798	1.000	**0.006**	0.750	0.057	-1.96e-14	1.000	0.500	0.239	8.250	0.302	-0.250	0.937	-5.750	0.093
24.0300	1.23e-14	1.000	-0.389	0.956	0.778	**0.017**	0.222	0.531	0.111	0.640	-0.0556	0.885	5.889	0.414	0.222	0.938	-3.333	0.280
31.0100	1.41e-14	1.000	-2.500	0.821	1.000	**0.049**	3.21e-15	1.000	1.000	**0.008**	-0.500	0.404	-3.000	0.790	2.000	0.656	1.000	0.836
35.0000	0.143	0.614	-4.000	0.588	0.714	**0.032**	0.143	0.695	0.143	0.558	0.0714	0.856	4.143	0.575	-3.286	0.265	-5.286	0.095
36.0100	0.500	0.158	2.500	0.782	1.000	**0.016**	0.500	0.271	0.500	0.101	-0.500	0.307	7.500	0.416	-6.000	0.103	-3.500	0.375
36.0200	1.37e-14	1.000	-3.500	0.699	1.000	**0.016**	0.500	0.271	0.500	0.101	-0.500	0.307	14.00	0.130	-5.000	0.174	-3.000	0.446
36.0300	1.27e-14	1.000	-2.500	0.762	0.667	0.077	1.000*	0.017	-1.94e-14	1.000	-0.167	0.709	3.000	0.721	-0.667	0.842	-3.000	0.404
37.0300	1.42e-14	1.000	12.50	0.260	1.000	**0.049**	3.30e-15	1.000	-1.97e-14	1.000	0.500	0.404	14.00	0.215	-2.000	0.656	-2.000	0.678
41.0100	1.26e-14	1.000	-4.833	0.558	1.000	**0.008**	0.333	0.421	0.333	0.230	0.167	0.709	3.333	0.692	-2.667	0.426	-1.667	0.643
41.0200	1.37e-14	1.000	-3.500	0.752	1.000	**0.049**	2.52e-15	1.000	-1.95e-14	1.000	0.500	0.404	-3.000	0.790	1.000	0.824	-4.000	0.407
41.0300	0.333	0.302	-1.500	0.856	1.000	**0.008**	0.667	0.109	-1.94e-14	1.000	-0.167	0.709	-1.667	0.843	-0.667	0.842	-1.000	0.781
41.0400	1.39e-14	1.000	1.500	0.892	1.000	**0.049**	2.87e-15	1.000	1.000	**0.008**	0.500	0.404	25.00	**0.028**	-3.000	0.505	-4.000	0.407
42.0100	1.40e-14	1.000	1.500	0.892	1.000	**0.049**	3.13e-15	1.000	-1.96e-14	1.000	0.500	0.404	8.000	0.478	2.000	0.656	-1.000	0.836
42.0200	1.000	**0.022**	0.500	0.964	3.37e-15	1.000	3.23e-15	1.000	-1.96e-14	1.000	0.500	0.404	-5.000	0.658	2.000	0.656	-12.00	**0.014**
43.0100	1.41e-14	1.000	-9.500	0.391	1.000	**0.049**	3.31e-15	1.000	-1.96e-14	1.000	-0.500	0.404	11.00	0.330	-8.000	0.076	-5.000	0.301
43.0400	0.500	0.158	-10.00	0.269	1.000	**0.016**	3.36e-15	1.000	-1.97e-14	1.000	-0.500	0.307	4.500	0.625	-2.000	0.586	3.000	0.446
44.0300	1.41e-14	1.000	-0.500	0.956	1.000	**0.016**	0.500	0.271	-1.96e-14	1.000	-1.17e-15	1.000	-2.000	0.828	2.000	0.586	2.000	0.612
44.0400	1.42e-14	1.000	4.500	0.685	1.000	**0.049**	3.43e-15	1.000	-1.97e-14	1.000	-0.500	0.404	-4.000	0.723	-3.000	0.505	1.15e-13	1.000
45.0100	0.143	0.614	1.214	0.867	3.94e-15	1.000	0.143	0.695	0.286	0.242	0.0714	0.856	2.429	0.742	-1.000	0.734	0.571	0.856
45.0200	0.154	0.566	-5.577	0.417	0.538	0.086	0.308	0.372	-1.92e-14	1.000	-0.192	0.605	4.923	0.482	-1.308	0.639	-0.923	0.758
46.0200	1.42e-14	1.000	2.500	0.821	5.87e-15	1.000	3.50e-15	1.000	-1.97e-14	1.000	0.500	0.404	13.00	0.250	-6.000	0.183	-5.000	0.301
47.0000	1.43e-14	1.000	7.500	0.498	6.03e-15	1.000	3.65e-15	1.000	-1.98e-14	1.000	-0.500	0.404	4.000	0.723	9.45e-14	1.000	2.000	0.678
48.0200	1.000	**0.022**	12.50	0.260	5.90e-15	1.000	1.000	0.073	-1.98e-14	1.000	-0.500	0.404	5.000	0.658	2.000	0.656	1.11e-13	1.000
50.0100	0.500	0.158	-1.500	0.868	1.000	**0.016**	0.500	0.271	-1.95e-14	1.000	-1.06e-15	1.000	-3.500	0.704	1.500	0.683	1.000	0.800
54.0000	0.250	0.371	-1.750	0.807	5.70e-15	1.000	0.375	0.296	-1.96e-14	1.000	-0.125	0.747	5.375	0.461	-0.250	0.931	-0.750	0.810
55.0300	0.400	0.177	3.700	0.625	0.200	0.562	0.200	0.598	-1.93e-14	1.000	-0.100	0.807	12.40	0.109	-2.400	0.435	-2.000	0.544
68.0900	1.37e-14	1.000	-8.500	0.443	1.000	**0.049**	2.57e-15	1.000	-1.95e-14	1.000	-0.500	0.404	15.00	0.185	2.000	0.656	-1.000	0.836
69.0100	1.43e-14	1.000	-7.500	0.498	1.000	**0.049**	3.64e-15	1.000	1.000	**0.008**	0.500	0.404	-1.000	0.929	-8.000	0.076	3.000	0.534
83.0300	1.000	**0.022**	-5.500	0.620	1.000	**0.049**	3.14e-15	1.000	-1.97e-14	1.000	-0.500	0.404	-3.000	0.790	1.000	0.824	3.000	0.534
85.3400	1.43e-14	1.000	-13.50	0.224	5.95e-15	1.000	1.000	0.073	-1.97e-14	1.000	0.500	0.404	-5.000	0.658	-6.000	0.183	1.000	0.836
Observations	244		243		244		244		244		244		244		244		244	
F-Test	1.178		0.915		3.164		1.044		1.173		0.964		1.045		1.033		1.066	
p value	0.213		0.641		4.14e-09		0.406		0.219		0.549		0.404		0.426		0.369	
Pseudo R^2	0.247		0.204		0.469		0.226		0.247		0.212		0.226		0.224		0.229	
Note: P/C = Parent or Caregiver; reference group is Tract 1.0200																		
bold = p<.05																		

Exhibit A-2C. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 3+ Children

	P/C is single parent (1=yes, 0=no)		P/C employment status at time of DHA move-in (1=employed, 0=not employed)		P/C hourly wage at time of DHA move-in		P/C disability status at time of survey (1=yes; 0=no)		P/C received TANF at time of DHA move-in (1=yes, 0=no)		P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)		P/C had checking account at time of DHA move-in (1=yes, 0=no)		P/C had health insurance at time of DHA move-in (1=yes, 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
3.0100	0.389	0.268	0.556	0.571	8.686	0.205	-0.167	0.460	0.111	0.922	0.444	0.612	-0.167	0.864	0.278	0.744
5.0200	-0.611	0.206	0.556	0.681	6.401	0.497	-0.167	0.592	0.611	0.696	0.444	0.713	-0.167	0.901	0.278	0.813
6.0000	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	0.444	0.713	-0.167	0.901	0.278	0.813
7.0200	0.0812	0.635	0.325	0.498	5.418	0.106	-0.0128	0.907	0.150	0.787	0.291	0.497	0.141	0.766	0.0470	0.910
8.0000	-0.0111	0.946	0.222	0.629	4.327	0.179	-0.167	0.117	-1.122	**0.036**	0.178	0.665	0.433	0.341	-0.122	0.759
9.0200	0.389	0.421	0.556	0.681	11.34	0.230	-0.167	0.592	-0.389	0.804	0.444	0.713	-0.167	0.901	0.278	0.813
9.0300	-0.111	0.751	0.0556	0.955	2.401	0.726	-0.167	0.460	-0.389	0.732	-0.556	0.526	0.333	0.731	-0.722	0.396
9.0400	0.139	0.593	0.306	0.674	5.526	0.277	-0.167	0.320	-0.389	0.644	-0.306	0.638	0.583	0.418	0.278	0.659
9.0500	0.389	0.268	0.556	0.571	15.15	**0.028**	0.333	0.141	0.611	0.591	0.444	0.612	0.333	0.731	-0.722	0.396
10.0000	0.264	0.187	0.0556	0.921	0.601	0.877	-0.167	0.196	0.111	0.864	0.0694	0.889	0.0833	0.880	0.0278	0.954
11.0100	0.189	0.427	-0.0444	0.947	0.351	0.940	-0.167	0.277	0.211	0.784	0.244	0.681	-0.167	0.800	0.278	0.630
11.0200	0.389	0.268	0.0556	0.955	1.651	0.809	-0.167	0.460	0.611	0.591	0.444	0.612	-0.167	0.864	0.278	0.744
13.0100	0.389	0.421	0.556	0.681	14.15	0.135	0.833	**0.008**	0.611	0.696	0.444	0.713	0.833	0.533	0.278	0.813
14.0200	0.103	0.622	0.413	0.481	9.794	**0.018**	-0.0238	0.860	0.183	0.788	0.159	0.762	0.405	0.485	0.135	0.791
14.0300	-0.611	0.206	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	0.444	0.713	-0.167	0.901	0.278	0.813
15.0000	-0.111	0.669	-0.194	0.789	-3.811	0.453	0.333	**0.048**	-0.139	0.869	-0.0556	0.932	0.0833	0.908	-0.472	0.454
16.0000	0.158	0.356	-0.0598	0.900	-1.580	0.636	-0.0897	0.416	-0.697	0.210	0.0598	0.889	-0.782	0.100	-0.261	0.530
19.0000	0.124	0.365	-0.150	0.695	2.824	0.292	-0.0784	0.375	-0.0948	0.831	-0.232	0.498	-0.0784	0.836	-0.310	0.351
21.0000	0.389	0.421	0.556	0.681	16.15	0.088	-0.167	0.592	0.611	0.696	-0.556	0.645	0.833	0.533	0.278	0.813
23.0000	0.389	0.268	0.556	0.571	10.15	0.139	-0.167	0.460	-0.389	0.732	-0.0556	0.949	0.833	0.391	-0.222	0.794
24.0300	0.189	0.427	-2.044	**0.002**	-4.099	0.377	-0.167	0.277	-0.189	0.806	0.244	0.681	0.0333	0.960	-0.122	0.832
35.0000	0.189	0.427	0.356	0.593	4.001	0.389	0.0333	0.828	0.211	0.784	0.244	0.681	0.0333	0.960	0.0778	0.893
36.0100	0.389	0.421	0.556	0.681	18.15	0.056	-0.167	0.592	-0.389	0.804	0.444	0.713	-0.167	0.901	0.278	0.813
36.0200	0.0253	0.888	-0.0808	0.872	-0.548	0.876	0.0152	0.896	0.0657	0.910	0.0808	0.857	0.379	0.447	0.00505	0.991
41.0100	0.389	0.136	0.306	0.674	2.929	0.564	-0.167	0.320	0.111	0.895	-0.0556	0.932	0.0833	0.908	-0.222	0.724
41.0300	-0.111	0.751	0.556	0.571	17.15	**0.013**	-0.167	0.460	-0.389	0.732	-0.556	0.526	0.833	0.391	0.278	0.744
41.0400	0.389	0.268	0.556	0.571	12.90	0.061	-0.167	0.460	-0.389	0.732	-0.0556	0.949	0.833	0.391	-0.222	0.794
42.0200	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	0.444	0.713	-0.167	0.901	0.278	0.813
43.0400	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	0.444	0.713	0.833	0.533	0.278	0.813
44.0300	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	-0.556	0.645	-0.167	0.901	-0.722	0.538
44.0400	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	-0.389	0.804	-0.556	0.645	0.833	0.533	0.278	0.813
45.0100	-0.278	0.344	-0.444	0.588	-7.849	0.171	-0.167	0.378	-0.389	0.682	0.111	0.879	-0.167	0.837	-0.0556	0.938
45.0200	0.0556	0.772	-1.111	**0.040**	-1.768	0.637	-0.0556	0.653	-0.167	0.789	-0.111	0.817	-1.056	**0.048**	-1.278	**0.007**
46.0200	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	0.444	0.713	-0.167	0.901	0.278	0.813
47.0000	0.389	0.421	-0.444	0.742	-7.849	0.406	-0.167	0.592	0.611	0.696	-0.556	0.645	0.833	0.533	0.278	0.813
48.0200	0.389	0.421	0.556	0.681	10.25	0.278	-0.167	0.592	0.611	0.696	0.444	0.713	0.833	0.533	0.278	0.813
50.0100	-0.611	0.206	-0.444	0.742	-7.849	0.406	-0.167	0.592	-0.389	0.804	0.444	0.713	0.833	0.533	0.278	0.813
2.0000	-0.611	0.206	0.556	0.681	15.15	0.109	-0.167	0.592	-0.389	0.804	-0.556	0.645	0.833	0.533	-0.722	0.538
54.0000	0.0556	0.772	0.333	0.535	4.568	0.224	-0.0556	0.653	-0.167	0.789	7.63e-16	1.000	0.611	0.251	0.0556	0.905
55.0300	0.389	0.421	0.556	0.681	15.15	0.109	-0.167	0.592	0.611	0.696	0.444	0.713	0.833	0.533	0.278	0.813
68.0900	0.389	0.421	0.556	0.681	12.15	0.199	-0.167	0.592	-0.389	0.804	0.444	0.713	0.833	0.533	0.278	0.813
83.1100	-0.111	0.751	0.0556	0.955	1.151	0.866	-0.167	0.460	0.111	0.922	-0.0556	0.949	0.333	0.731	-0.722	0.396
83.1200	0.389	0.421	0.556	0.681	8.151	0.388	-0.167	0.592	-0.389	0.804	-0.556	0.645	-0.167	0.901	0.278	0.813
119.0200	0.389	0.421	0.556	0.681	16.15	0.088	-0.167	0.592	-0.389	0.804	-0.556	0.645	0.833	0.533	0.278	0.813
Observations	203		203		203		203		203		203		203		203	
F-Test	0.647		0.628		1.476		0.697		0.332		0.202		0.549		0.424	
p value	0.954		0.964		**0.0433**		0.919		1.000		1.000		0.989		0.999	
Pseudo R^2	0.153		0.149		0.291		0.163		0.0847		0.0532		0.133		0.106	
Note: P/C = Parent or Caregiver; reference group is Tract 2.0200																
bold = p<.05																

Exhibit A-2C. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 3+ Children (cont.)

	P/C had too little money for food at time of DHA move-in (1=yes, 0=no)		P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)		Frequency that P/C drank alcohol since becoming a parent		Frequency that P/C smoked marijuana since becoming a parent		P/C ever seen a psychiatrist (1=yes, 0=no)		Number of years during childhood that P/C lived in public housing		Number of years during childhood that P/C lived in a home owned by parents		P/C born in the United States (1=yes; 0=no)		Spanish language interview (1=yes; 0=no)	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
3.0100	0.722	0.384	1.111	0.461	0.889	0.641	-0.833	0.661	-1.77e-15	1.000	1.056	0.865	0.333	0.969	-0.222	0.400	0.278	0.145
5.0200	-0.278	0.808	0.111	0.957	-0.111	0.966	-0.833	0.751	-0.500	0.331	21.56	**0.012**	-12.67	0.292	0.278	0.445	-0.222	0.396
6.0000	-0.278	0.808	1.111	0.593	-0.111	0.966	-0.833	0.751	-0.500	0.331	-5.444	0.524	12.33	0.304	-0.722	**0.048**	-0.222	0.396
7.0200	0.261	0.520	0.803	0.276	-0.419	0.653	-1.372	0.141	-0.269	0.140	-0.291	0.923	2.333	0.583	0.0470	0.715	-0.145	0.119
8.0000	0.389	0.318	0.511	0.470	0.222	0.804	-0.633	0.478	-0.100	0.567	-2.911	0.317	-1.733	0.671	0.144	0.244	-0.222	**0.013**
9.0200	0.722	0.528	1.111	0.593	1.889	0.473	-0.833	0.751	-0.500	0.331	-5.444	0.524	14.33	0.233	-0.722	**0.048**	-0.222	0.396
9.0300	0.222	0.789	0.611	0.685	0.389	0.838	-0.833	0.661	-1.85e-15	1.000	1.056	0.865	8.333	0.339	0.278	0.293	-0.222	0.243
9.0400	-0.278	0.652	0.111	0.921	2.639	0.064	0.417	0.768	-0.500	0.072	1.056	0.818	-5.917	0.360	0.278	0.157	-0.222	0.116
9.0500	0.222	0.789	0.611	0.685	-0.111	0.954	-0.833	0.661	-0.500	0.181	5.556	0.370	-7.667	0.379	0.278	0.293	-0.222	0.243
10.0000	0.472	0.319	0.611	0.477	1.139	0.296	-1.208	0.266	-1.79e-15	1.000	1.056	0.765	-7.167	0.150	0.153	0.310	-0.0972	0.370
11.0100	0.522	0.354	0.311	0.761	0.489	0.706	0.167	0.897	-0.100	0.692	-5.444	0.196	-3.467	0.557	0.278	0.122	-0.222	0.086
11.0200	-0.278	0.738	0.611	0.685	2.889	0.131	2.667	0.162	-1.59e-15	1.000	2.056	0.740	-12.67	0.147	0.278	0.293	-0.222	0.243
13.0100	0.722	0.528	1.111	0.593	1.889	0.473	-9.833	**0.000**	0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
14.0200	-0.135	0.785	0.111	0.902	0.0317	0.978	-0.833	0.464	-0.0714	0.748	-5.444	0.143	3.048	0.558	-0.151	0.339	-0.222	0.052
14.0300	-0.278	0.808	1.111	0.593	-0.111	0.966	-0.833	0.751	0.500	0.331	15.56	0.070	-12.67	0.292	0.278	0.445	-0.222	0.396
15.0000	-0.0278	0.964	-4.139	**0.000**	1.639	0.248	-2.833	**0.046**	0.250	0.366	4.056	0.378	6.333	0.327	0.278	0.157	-0.222	0.116
16.0000	0.261	0.520	-0.274	0.710	-0.188	0.840	-1.218	0.191	-0.269	0.140	2.940	0.332	-2.359	0.579	0.278	**0.032**	-0.222	**0.018**
19.0000	-0.278	0.392	-0.0654	0.912	0.0948	0.899	-1.010	0.176	-1.50e-15	1.000	-0.121	0.960	-1.196	0.725	0.131	0.206	-0.134	0.073
21.0000	0.722	0.528	0.111	0.957	-0.111	0.966	-0.833	0.751	0.500	0.331	-5.444	0.524	-12.67	0.292	-0.722	**0.048**	-0.222	0.396
23.0000	0.222	0.789	0.611	0.685	-0.111	0.954	-0.833	0.661	-0.500	0.181	-5.444	0.380	14.33	0.101	-0.222	0.400	-0.222	0.243
24.0300	0.122	0.828	0.311	0.761	0.689	0.595	-0.633	0.623	-0.300	0.236	3.156	0.453	-1.067	0.857	0.278	0.122	-0.222	0.086
35.0000	0.122	0.828	0.711	0.487	0.289	0.823	0.567	0.660	0.1000	0.692	-3.044	0.469	-3.467	0.557	0.278	0.122	-0.222	0.086
36.0100	-0.278	0.808	1.111	0.593	-0.111	0.966	-0.833	0.751	0.500	0.331	-5.444	0.524	6.333	0.597	0.278	0.445	-0.222	0.396
36.0200	-0.00505	0.991	0.657	0.397	-0.202	0.837	-1.015	0.299	-0.136	0.476	-2.263	0.477	1.061	0.812	0.0960	0.479	-0.131	0.179
41.0100	0.222	0.718	0.611	0.585	-2.111	0.137	0.167	0.906	-1.59e-15	1.000	-5.444	0.237	-5.917	0.360	0.278	0.157	-0.222	0.116
41.0300	-0.278	0.738	0.111	0.941	-0.111	0.954	-0.833	0.661	-1.63e-15	1.000	-5.444	0.380	14.33	0.101	-0.222	0.400	-0.222	0.243
41.0400	0.222	0.789	0.611	0.685	0.389	0.838	-0.333	0.861	-0.500	0.181	-5.444	0.380	0.833	0.924	0.278	0.293	-0.222	0.243
42.0200	-0.278	0.808	0.111	0.957	-0.111	0.966	-0.833	0.751	-0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
43.0400	-0.278	0.808	0.111	0.957	-0.111	0.966	-0.833	0.751	0.500	0.331	-5.444	0.524	-12.67	0.292	0.278	0.445	-0.222	0.396
44.0300	-0.278	0.808	-8.889	**0.000**	0.889	0.735	2.167	0.409	-0.500	0.331	-5.444	0.524	6.333	0.597	0.278	0.445	-0.222	0.396
44.0400	-0.278	0.808	0.111	0.957	-0.111	0.966	-0.833	0.751	-0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
45.0100	-0.278	0.689	-2.889	**0.023**	-3.111	0.053	-3.833	**0.017**	-0.167	0.593	-5.444	0.294	5.333	0.464	-0.389	0.079	0.444	**0.006**
45.0200	-1.056	**0.021**	-1.667	**0.045**	1.889	0.072	0.389	0.709	-0.167	0.414	-1.000	0.768	1.778	0.709	0.167	0.249	-0.222	**0.034**
46.0200	0.722	0.528	1.111	0.593	-0.111	0.966	-0.833	0.751	-0.500	0.331	-5.444	0.524	-12.67	0.292	0.278	0.445	-0.222	0.396
47.0000	-0.278	0.808	0.111	0.957	-9.111	**0.001**	-0.833	0.751	-0.500	0.331	18.56	**0.031**	-12.67	0.292	0.278	0.445	-0.222	0.396
48.0200	-0.278	0.808	0.111	0.957	0.889	0.735	-0.833	0.751	-0.500	0.331	6.556	0.443	-12.67	0.292	0.278	0.445	-0.222	0.396
50.0100	0.722	0.528	1.111	0.593	1.889	0.473	-9.833	**0.000**	-0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
2.0000	0.722	0.528	0.111	0.957	-0.111	0.966	-0.833	0.751	-0.500	0.331	-5.444	0.524	14.33	0.233	-0.722	**0.048**	-0.222	0.396
54.0000	0.0556	0.903	0.556	0.501	-0.444	0.671	-1.056	0.312	-0.0556	0.785	0.222	0.948	7.667	0.109	0.278	0.056	-0.222	**0.034**
55.0300	-0.278	0.808	0.111	0.957	-0.111	0.966	-0.833	0.751	-0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
68.0900	0.722	0.528	1.111	0.593	0.889	0.735	0.167	0.949	0.500	0.331	-5.444	0.524	-3.667	0.760	0.278	0.445	-0.222	0.396
83.1100	0.222	0.789	0.111	0.941	0.389	0.838	-0.333	0.861	0.500	0.181	-5.444	0.380	13.33	0.127	-0.222	0.400	0.278	0.145
83.1200	0.722	0.528	1.111	0.593	0.889	0.735	0.167	0.949	0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
119.0200	-0.278	0.808	0.111	0.957	1.889	0.473	0.167	0.949	-0.500	0.331	-5.444	0.524	14.33	0.233	0.278	0.445	-0.222	0.396
Observations	203		203		203		203		203		203		203		203		203	
F-Test	0.511		1.359		0.876		1.061		0.855		0.920		1.153		1.323		0.989	
p value	0.995		0.0887		0.690		0.386		0.723		0.617		0.261		0.109		0.500	
Pseudo R^2	0.124		0.275		0.196		0.228		0.192		0.204		0.243		0.269		0.216	
Note: P/C = Parent or Caregiver; reference group is Tract 2.0200																		
bold = p<.05																		

Exhibit A-2C. Relationships Between DHA Resident Characteristics and Census Tracts: Households with 3+ Children (cont.)

	Biological father always lived in household with child(ren) (1=yes; 0=no)		Parent's age at time of DHA move-in		P/C African American (1=yes; 0=no)		Parent have HS diploma at time of DHA move-in (1=yes; 0=no)		Parent have any higher education at time of DHA move-in (1=yes; 0=no)		Kids share same biological dad (1=yes; 0=no)		Parent Depressive Symptomatology Scale at time of interview		Parenting Efficacy Scale at time of interview		Parenting Beliefs Scale at time of interview	
Census Tract	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
3.0100	0.833	**0.012**	0.833	0.895	-0.111	0.719	0.167	0.657	-0.0556	0.760	-0.389	0.258	-2.222	0.758	1.333	0.578	1.444	0.622
5.0200	-0.167	0.713	7.333	0.399	-0.111	0.794	-0.333	0.520	-0.0556	0.824	-0.389	0.411	-3.222	0.746	3.333	0.313	-0.0556	0.989
6.0000	-0.167	0.713	1.333	0.878	-0.111	0.794	-0.333	0.520	-0.0556	0.824	-0.389	0.411	18.78	0.060	-7.667	**0.021**	-1.056	0.794
7.0200	0.0641	0.689	2.872	0.351	0.274	0.072	-0.0256	0.889	0.0983	0.268	-0.0812	0.628	-3.607	0.306	0.0256	0.982	0.406	0.776
8.0000	0.233	0.131	2.200	0.457	0.489	**0.001**	4.61e-16	1.000	-0.0556	0.514	-0.122	0.448	1.844	0.586	-0.333	0.767	0.678	0.622
9.0200	-0.167	0.713	7.333	0.399	-0.111	0.794	0.667	0.199	-0.0556	0.824	-0.389	0.411	-8.222	0.408	-0.667	0.840	2.944	0.466
9.0300	0.333	0.311	5.833	0.355	-0.111	0.719	0.167	0.657	-0.0556	0.760	-0.389	0.258	-2.222	0.758	2.333	0.330	-4.056	0.167
9.0400	0.333	0.172	-2.167	0.643	-0.111	0.628	0.167	0.549	0.444	**0.001**	-0.139	0.585	-5.222	0.329	0.0833	0.963	2.194	0.313
9.0500	-0.167	0.612	9.333	0.140	-0.111	0.719	-0.333	0.375	-0.0556	0.760	-0.389	0.258	-2.222	0.758	1.333	0.578	-0.0556	0.985
10.0000	0.0833	0.656	6.083	0.092	0.264	0.136	0.167	0.436	-0.0556	0.591	-0.264	0.178	4.778	0.246	-1.667	0.223	0.319	0.848
11.0100	0.0333	0.881	-0.667	0.876	-0.111	0.596	0.0667	0.793	-0.0556	0.652	-0.189	0.417	-0.622	0.899	2.133	0.190	2.544	0.201
11.0200	-0.167	0.612	1.833	0.771	-0.111	0.719	0.167	0.657	0.444	**0.015**	0.111	0.746	17.28	**0.018**	0.333	0.889	1.944	0.507
13.0100	-0.167	0.713	1.333	0.878	-0.111	0.794	-0.333	0.520	-0.0556	0.824	0.611	0.197	13.78	0.167	-4.667	0.159	2.944	0.466
14.0200	0.262	0.183	4.905	0.194	0.175	0.345	0.0952	0.671	-0.0556	0.609	0.468	**0.023**	-3.937	0.361	1.190	0.406	1.087	0.534
14.0300	0.833	0.067	7.333	0.399	-0.111	0.794	-0.333	0.520	-0.0556	0.824	0.611	0.197	1.778	0.858	-0.667	0.840	-0.0556	0.989
15.0000	0.333	0.172	4.583	0.328	0.889	**0.000**	0.167	0.549	-0.0556	0.680	-0.139	0.585	9.028	0.093	-0.667	0.707	-0.0556	0.980
16.0000	0.0641	0.689	-3.205	0.299	0.889	**0.000**	0.0513	0.780	-0.0556	0.531	-0.158	0.346	0.932	0.791	0.872	0.456	0.0214	0.988
19.0000	0.0392	0.760	-0.225	0.927	0.418	**0.001**	-0.0392	0.789	0.0327	0.645	-0.00654	0.961	-0.399	0.888	0.627	0.503	0.621	0.588
21.0000	-0.167	0.713	11.33	0.193	-0.111	0.794	-0.333	0.520	-0.0556	0.824	-0.389	0.411	10.78	0.279	-2.667	0.419	-1.056	0.794
23.0000	-0.167	0.612	-0.167	0.979	-0.111	0.719	-0.333	0.375	0.444	**0.015**	-0.389	0.258	-6.222	0.389	1.833	0.444	1.444	0.622
24.0300	-0.167	0.454	-2.067	0.629	0.889	**0.000**	0.0667	0.793	-0.0556	0.652	-0.389	0.096	-0.222	0.964	0.933	0.566	0.544	0.784
35.0000	0.0333	0.881	-2.667	0.533	0.489	**0.021**	-0.133	0.601	0.144	0.242	-0.389	0.096	3.778	0.440	0.733	0.652	3.144	0.115
36.0100	-0.167	0.713	6.333	0.466	0.889	**0.038**	0.667	0.199	-0.0556	0.824	0.611	0.197	-4.222	0.671	-2.667	0.419	1.944	0.630
36.0200	0.0152	0.928	3.788	0.243	0.434	**0.007**	0.0303	0.875	-0.0556	0.551	-0.0253	0.886	0.141	0.970	0.333	0.786	2.308	0.126
41.0100	0.0833	0.732	5.333	0.255	0.889	**0.000**	0.167	0.549	-0.0556	0.680	0.111	0.662	-6.222	0.245	1.083	0.542	2.194	0.313
41.0300	0.333	0.311	8.333	0.187	0.889	**0.005**	0.167	0.657	0.444	**0.015**	0.111	0.746	-9.722	0.179	3.333	0.165	-7.556	**0.011**
41.0400	-0.167	0.612	-1.167	0.853	0.889	**0.005**	0.167	0.657	-0.0556	0.760	-0.389	0.258	4.278	0.553	-0.667	0.781	-5.056	0.085
42.0200	0.833	0.067	-2.667	0.759	0.889	**0.038**	0.667	0.199	-0.0556	0.824	-0.389	0.411	-3.222	0.746	3.333	0.313	-5.056	0.211
43.0400	-0.167	0.713	9.333	0.284	0.889	**0.038**	0.667	0.199	-0.0556	0.824	-0.389	0.411	3.778	0.704	3.333	0.313	4.944	0.221
44.0300	-0.167	0.713	1.333	0.878	0.889	**0.038**	-0.333	0.520	-0.0556	0.824	-0.389	0.411	-7.222	0.468	-2.667	0.419	0.944	0.815
44.0400	-0.167	0.713	7.333	0.399	0.889	**0.038**	-0.333	0.520	0.944	**0.000**	0.611	0.197	-7.222	0.468	1.333	0.686	-5.056	0.211
45.0100	0.500	0.070	5.000	0.344	-0.111	0.668	-0.333	0.289	0.278	0.069	0.278	0.334	-5.222	0.387	2.667	0.184	-0.0556	0.982
45.0200	0.167	0.354	-4.667	0.178	0.111	0.512	4.64e-16	1.000	-0.0556	0.576	0.0556	0.767	-2.556	0.518	0.444	0.735	-0.389	0.808
46.0200	0.833	0.067	-1.667	0.848	-0.111	0.794	-0.333	0.520	-0.0556	0.824	-0.389	0.411	0.778	0.938	-9.667	**0.004**	0.944	0.815
47.0000	-0.167	0.713	-0.667	0.939	-0.111	0.794	0.667	0.199	-0.0556	0.824	0.611	0.197	-7.222	0.468	1.333	0.686	-1.056	0.794
48.0200	0.833	0.067	2.333	0.788	0.889	**0.038**	-0.333	0.520	-0.0556	0.824	-0.389	0.411	-10.22	0.304	2.333	0.480	2.944	0.466
50.0100	-0.167	0.713	2.333	0.788	0.889	**0.038**	-0.333	0.520	-0.0556	0.824	-0.389	0.411	-4.222	0.671	1.333	0.686	-5.056	0.211
2.0000	0.833	0.067	8.333	0.338	0.889	**0.038**	0.667	0.199	-0.0556	0.824	0.611	0.197	-11.22	0.260	3.333	0.313	-5.056	0.211
54.0000	-0.0556	0.757	4.667	0.178	-4.56e-15	1.000	0.111	0.589	-0.0556	0.576	-0.167	0.375	3.222	0.415	-0.444	0.735	3.389	**0.036**
55.0300	0.833	0.067	11.33	0.193	-0.111	0.794	-0.333	0.520	0.944	**0.000**	0.611	0.197	-11.22	0.260	3.333	0.313	4.944	0.221
68.0900	0.833	0.067	1.333	0.878	0.889	**0.038**	-0.333	0.520	-0.0556	0.824	0.611	0.197	18.78	0.060	-5.667	0.087	-0.0556	0.989
83.1100	0.333	0.311	-18.17	**0.004**	0.389	0.210	0.167	0.657	-0.0556	0.760	-0.389	0.258	-7.222	0.317	-0.167	0.944	-0.0556	0.985
83.1200	0.833	0.067	2.333	0.788	0.889	**0.038**	-0.333	0.520	0.944	**0.000**	-0.389	0.411	-8.222	0.408	-2.667	0.419	1.944	0.630
119.0200	0.833	0.067	2.333	0.788	-0.111	0.794	-0.333	0.520	-0.0556	0.824	-0.389	0.411	7.778	0.434	3.333	0.313	1.944	0.630
Observations	203		203		203		203		203		203		203		203		203	
F-Test	1.179		0.988		3.075		0.562		2.076		1.168		1.035		1.021		0.954	
p value	0.231		0.502		**0.000000153**		0.986		**0.000555**		0.242		0.425		0.448		0.559	
Pseudo R^2	0.247		0.216		0.461		0.135		0.366		0.245		0.224		0.221		0.210	
Note: P/C = Parent or Caregiver; reference group is Tract 2.0200																		
bold = *p*<.05																		

Relationships between Individual Characteristics and Neighborhood Characteristics

Even if (as we have found) there were non-random assignments to DHA developments or neighborhoods on the basis of African American or disability status, it would not necessarily follow that there would be a strong relationship between these statuses and a wide variety of neighborhood *characteristics*. Thus, our third investigative strategy involves the use of continuously measured neighborhood characteristics instead of dummy variables to probe their potential systematic co-variation with characteristics of individual DHA families. Specifically, we employed the same individual characteristics as above and 12 characteristics of census tracts' population and housing (percentages of: female-headed households, poor families and individuals, unemployed adults, those with only elementary school education, those with college degrees, employees in professional/technical occupations, non-Latino African American population, Latino population, foreign-born population, housing vacancy rate, homes built prior to 1940, homes that are owner-occupied) conventionally used in neighborhood effect studies. We employed multivariate regression (again stratified by family size) to estimate the statistical associations between 27 individual and 12 neighborhood characteristics. As before, a quasi-random assignment would be reflected in coefficients approximating zero and an insignificant F-test for the regression as a whole.

Results are shown in Exhibit A-3A-C. Overall, of the 36 regressions, 26 exhibited insignificant F-tests. More convincingly, of the 972 regression estimates, 900 (92 percent) yielded coefficients that were statistically insignificant. Across the three family-size strata the percentages of insignificant coefficients were 91, 93 and 92, respectively, suggesting that generally the outcomes corresponded to quasi-random assignment. Further examination is required, however, to ascertain if there was any systematic sorting by a particular household characteristic as revealed by that characteristic garnering the bulk of the statistically significant coefficients.

Exhibit A-3A. Relationships Between DHA Resident and Neighborhood Characteristics: Households with 0-1 Child

Characteristics of DHA Resident	Percent female headed households in neighborhood		Percent of residents 25+ with LT 9th grade education		Percent of residents 25+ with Bachelor's degree or more		Percent foreign born in neighborhood		Neighborhood poverty rate		Percent Black residents in neighborhood		Percent Hispanic residents in neighborhood		Neighborhood unemployment rate		Neighborhood vacancy rate		Neighborhood homeownership rate		Percent homes built before 1940 in neighborhood	
	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value
P/C is single parent (1=yes, 0=no)	1.011	0.160	1.045	**0.007**	0.975	**0.023**	1.028	0.098	1.015	0.064	1.012	0.276	1.012	0.082	1.010	0.663	1.022	0.465	0.985	**0.022**	0.997	0.695
P/C employment status at time of DHA move-in (1=employed, 0=not employed)	0.991	0.156	0.974	0.067	1.005	0.652	0.993	0.575	0.993	0.249	1.005	0.512	0.991	0.162	1.013	0.482	1.015	0.561	1.006	0.277	1.007	0.280
P/C hourly wage at time of DHA move-in	0.100	0.177	-0.111	0.356	0.049	0.664	0.033	0.733	-0.053	0.486	0.014	0.743	0.001	0.973	-0.155	0.304	-0.230	0.057	-0.006	0.897	-0.016	0.724
P/C disability status at time of survey (1=yes; 0=no)	0.992	0.396	0.964	0.050	1.033	**0.005**	1.008	0.631	0.990	0.280	1.013	0.195	0.982	**0.019**	0.953	0.066	1.020	0.562	0.997	0.699	1.015	0.107
P/C received TANF at time of DHA move-in (1=yes, 0=no)	1.016	**0.016**	1.049	**0.003**	0.969	**0.017**	0.970	**0.043**	1.026	**0.000**	1.009	0.275	1.007	0.293	1.069	**0.001**	1.175	**0.000**	0.984	**0.009**	1.016	**0.029**
P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)	1.002	0.743	1.012	0.405	0.986	0.159	0.997	0.807	1.007	0.311	0.998	0.833	1.002	0.799	1.030	0.115	1.051	0.060	0.998	0.671	1.005	0.505
P/C had checking account at time of DHA move-in (1=yes, 0=no)	0.992	0.222	0.960	**0.005**	1.028	**0.010**	1.005	0.715	0.988	0.064	1.011	0.190	0.986	**0.024**	0.992	0.682	0.947	**0.042**	1.005	0.339	1.005	0.492
P/C had health insurance at time of DHA move-in (1=yes, 0=no)	0.999	0.846	0.975	0.139	1.012	0.333	0.978	0.142	0.996	0.633	1.016	0.144	0.987	0.092	1.007	0.731	1.035	0.251	1.005	0.448	1.011	0.146
P/C had too little money for food at time of DHA move-in (1=yes, 0=no)	0.996	0.526	0.993	0.654	1.003	0.760	1.001	0.946	0.994	0.377	1.005	0.511	0.994	0.363	0.975	0.208	1.009	0.747	1.004	0.450	0.997	0.626
P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)	0.990	0.119	0.990	0.477	1.009	0.363	1.029	**0.038**	0.992	0.223	0.984	0.080	1.003	0.587	0.989	0.551	0.934	**0.013**	1.002	0.733	0.991	0.215
Frequency that P/C drank alcohol since becoming a parent	-0.036	0.493	0.113	0.158	-0.111	0.131	0.033	0.615	0.003	0.949	-0.015	0.605	0.031	0.272	0.012	0.910	0.045	0.616	0.021	0.510	0.039	0.206
Frequency that P/C smoked marijuana since becoming a parent	0.018	**0.026**	0.011	0.425	-0.002	0.871	-0.015	0.163	0.014	0.095	0.007	0.129	-0.005	0.298	0.008	0.668	0.028	**0.049**	-0.008	0.148	0.003	0.585
P/C ever seen a psychiatrist (1=yes, 0=no)	0.997	0.650	1.008	0.610	0.998	0.883	1.008	0.569	0.998	0.774	1.009	0.250	1.002	0.755	0.993	0.717	1.052	0.051	1.002	0.781	1.012	0.092
Number of years during childhood that P/C lived in public housing	-0.072	0.401	-0.188	0.149	0.276	**0.010**	0.024	0.824	-0.187	**0.011**	0.058	0.197	-0.061	0.183	-0.238	0.147	-0.147	0.309	0.082	0.095	-0.081	0.097
Number of years during childhood that P/C lived in a home owned by parents	-0.025	0.856	0.120	0.581	-0.307	0.107	0.061	0.721	0.142	0.290	-0.108	0.129	0.075	0.317	0.329	0.217	-0.155	0.507	-0.064	0.437	-0.029	0.730
P/C born in the United States (1=yes; 0=no)	1.003	0.791	1.035	0.145	0.967	**0.015**	1.032	0.227	1.001	0.928	0.998	0.876	1.017	0.077	0.975	0.431	0.972	0.489	1.004	0.699	0.993	0.538
Spanish language interview (1=yes; 0=no)	0.996	0.786	0.977	0.485	1.005	0.827	0.988	0.730	0.994	0.717	1.008	0.656	1.000	0.985	1.023	0.614	1.007	0.910	1.009	0.486	1.022	0.215
Biological father always lived in household with child(ren) (1=yes; 0=no)	0.986	0.140	0.969	0.106	1.017	0.186	0.995	0.774	0.991	0.353	0.990	0.448	0.992	0.339	1.007	0.795	0.985	0.673	1.009	0.263	1.006	0.545
Parent's age at time of DHA move-in	0.084	0.678	0.450	0.137	-0.332	0.247	-0.132	0.595	-0.004	0.985	0.057	0.603	0.041	0.714	-0.224	0.577	0.220	0.521	0.079	0.517	0.030	0.804
Year that P/C moved into first randomly assigned unit	0.100	0.594	-0.407	0.149	0.098	0.722	0.341	0.118	-0.149	0.419	0.014	0.891	0.001	0.989	0.157	0.676	-0.906	**0.000**	-0.023	0.838	-0.109	0.327
P/C African American (1=yes; 0=no)	1.004	0.548	0.979	0.137	1.016	0.126	1.005	0.692	1.000	0.990	1.056	**0.000**	0.978	**0.001**	0.989	0.559	1.033	0.203	0.994	0.273	1.008	0.215
Parent have HS diploma at time of DHA move-in (1=yes; 0=no)	1.005	0.419	1.007	0.661	0.993	0.507	1.002	0.858	1.006	0.406	0.992	0.365	1.010	0.160	1.034	0.093	0.999	0.956	0.995	0.377	1.010	0.155
Parent have any higher education at time of DHA move-in (1=yes; 0=no)	0.975	**0.025**	0.971	0.160	1.016	0.260	1.062	**0.001**	0.977	**0.030**	1.011	0.323	0.990	0.264	0.938	**0.034**	0.859	**0.003**	1.010	0.251	0.990	0.337
Kids share same biological dad (1=yes; 0=no)	0.986	**0.035**	0.953	**0.004**	1.040	**0.008**	1.033	**0.038**	0.979	**0.003**	0.998	0.782	0.990	0.158	0.946	**0.007**	0.893	**0.000**	1.008	0.178	1.001	0.855
Parent Depressive Symptomatology Scale at time of interview	0.029	0.847	0.355	0.116	-0.223	0.303	0.238	0.183	0.068	0.652	-0.035	0.669	0.101	0.211	0.126	0.678	-0.086	0.741	-0.115	0.194	0.002	0.984
Parenting Efficacy Scale at time of interview	-0.130	0.094	-0.169	0.179	0.070	0.561	0.027	0.794	-0.096	0.229	-0.043	0.330	0.008	0.860	-0.070	0.672	-0.118	0.398	0.075	0.113	-0.001	0.984
Parenting Beliefs Scale at time of interview	-0.267	**0.023**	-0.002	0.991	-0.124	0.522	0.154	0.340	-0.028	0.834	-0.109	0.106	0.065	0.367	0.283	0.275	-0.132	0.561	0.040	0.622	-0.023	0.778

Note: P/C = Parent or Caregiver; OR = odds ratios for dichotomous outcomes; all neighborhood characteristics measured at time of first DHA move-in

N=265

bold = *p*<.05

Exhibit A-3B. Relationships Between DHA Resident and Neighborhood Characteristics: Households with 2 Children

Characteristics of DHA Resident	Percent female headed households in neighborhood		Percent of residents 25+ with LT 9th grade education		Percent of residents 25+ with Bachelor's degree or more		Percent foreign born in neighborhood		Neighborhood poverty rate		Percent Black residents in neighborhood		Percent Hispanic residents in neighborhood		Neighborhood unemployment rate		Neighborhood vacancy rate		Neighborhood homeownership rate		Percent homes built before 1940 in neighborhood	
	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value
P/C is single parent (1=yes, 0=no)	1.003	0.754	1.001	0.960	1.005	0.721	1.011	0.508	0.997	0.713	1.019	0.090	0.997	0.746	0.982	0.467	0.984	0.586	1.003	0.728	1.003	0.692
P/C employment status at time of DHA move-in (1=employed, 0=not employed)	1.007	0.316	0.965	**0.023**	1.018	0.157	0.970	**0.018**	0.997	0.629	1.032	**0.001**	0.979	**0.003**	0.987	0.547	0.993	0.792	1.007	0.231	1.001	0.906
P/C hourly wage at time of DHA move-in	-0.067	0.630	0.120	0.542	-0.558	0.454	0.027	0.841	0.004	0.981	-0.124	**0.007**	0.103	0.204	0.177	0.576	0.709	0.234	0.070	0.447	0.120	0.271
P/C disability status at time of survey (1=yes; 0=no)	1.004	0.671	1.007	0.747	1.008	0.616	0.992	0.698	1.007	0.524	1.007	0.454	0.996	0.687	0.988	0.688	1.042	0.240	0.986	0.134	0.991	0.370
P/C received TANF at time of DHA move-in (1=yes, 0=no)	1.016	**0.023**	1.048	**0.003**	0.960	**0.005**	0.996	0.738	1.025	**0.001**	0.997	0.653	1.013	**0.045**	1.064	**0.004**	1.081	**0.002**	0.985	**0.018**	1.000	0.962
P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)	1.009	0.231	1.005	0.726	0.992	0.503	1.002	0.857	1.010	0.162	1.010	0.199	1.002	0.815	1.034	0.121	1.011	0.662	0.994	0.299	1.003	0.619
P/C had checking account at time of DHA move-in (1=yes, 0=no)	1.002	0.793	0.958	**0.007**	1.024	**0.040**	0.970	**0.029**	0.996	0.546	1.013	0.076	0.980	**0.002**	0.978	0.313	0.988	0.640	1.003	0.671	1.004	0.519
P/C had health insurance at time of DHA move-in (1=yes, 0=no)	0.992	0.304	0.997	0.854	0.997	0.787	0.992	0.559	0.996	0.585	1.001	0.898	0.995	0.487	0.990	0.665	1.057	0.083	1.004	0.573	0.992	0.268
P/C had too little money for food at time of DHA move-in (1=yes, 0=no)	1.008	0.269	0.984	0.294	1.014	0.226	0.998	0.851	1.007	0.344	1.016	**0.028**	0.988	0.056	1.022	0.311	1.010	0.702	0.992	0.172	1.001	0.906
P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)	0.992	0.234	0.961	**0.010**	1.013	0.252	1.002	0.894	0.989	0.141	0.995	0.531	0.988	0.054	0.985	0.487	0.945	**0.036**	1.003	0.579	0.994	0.371
Frequency that P/C drank alcohol since becoming a parent	-0.063	0.374	0.122	0.192	-0.565	0.079	0.057	0.408	-0.041	0.619	-0.026	0.534	0.050	0.267	-0.070	0.686	-0.002	0.995	0.058	0.199	0.021	0.753
Frequency that P/C smoked marijuana since becoming a parent	-0.044	0.565	0.148	0.094	-0.642	**0.028**	0.077	0.251	-0.015	0.868	-0.019	0.657	0.058	0.198	-0.029	0.874	-0.107	0.777	0.042	0.404	0.035	0.602
P/C ever seen a psychiatrist (1=yes, 0=no)	0.998	0.806	0.991	0.544	1.006	0.616	0.998	0.851	0.998	0.755	1.006	0.403	0.997	0.602	1.004	0.865	0.992	0.743	1.005	0.445	0.999	0.932
Number of years during childhood that P/C lived in public housing	-0.301	0.287	-0.468	0.238	1.648	0.293	-0.327	0.212	-0.453	0.092	-0.048	0.787	-0.173	0.373	-0.761	0.225	1.291	0.353	0.217	0.257	-0.298	0.203
Number of years during childhood that P/C lived in a home owned by parents	-0.415	**0.038**	0.123	0.764	0.612	0.697	0.109	0.691	-0.349	0.201	-0.126	0.406	0.080	0.672	-0.260	0.689	-0.051	0.971	0.146	0.434	-0.103	0.676
P/C born in the United States (1=yes; 0=no)	1.007	0.494	0.993	0.754	1.000	0.987	1.012	0.528	1.005	0.633	1.018	0.176	0.991	0.351	1.010	0.727	1.011	0.763	0.993	0.420	0.989	0.221
Spanish language interview (1=yes; 0=no)	0.973	0.095	1.026	0.408	1.001	0.958	1.007	0.776	0.984	0.280	0.942	0.065	1.019	0.197	0.961	0.346	0.996	0.935	1.009	0.438	1.022	0.103
Biological father always lived in household with child(ren) (1=yes; 0=no)	0.981	0.070	0.971	0.155	1.011	0.447	0.984	0.392	0.988	0.220	0.993	0.523	0.989	0.185	0.987	0.654	1.017	0.617	1.014	0.090	0.991	0.341
Parent's age at time of DHA move-in	0.157	0.424	-0.345	0.169	0.570	0.613	-0.273	0.069	0.081	0.722	-0.021	0.855	-0.102	0.439	0.083	0.863	1.304	0.093	-0.007	0.959	0.018	0.921
Year that P/C moved into first randomly assigned unit	0.163	0.472	0.296	0.347	-0.591	0.649	0.262	0.176	0.244	0.307	0.100	0.433	0.073	0.641	0.375	0.471	-1.595	0.055	-0.185	0.184	0.101	0.617
P/C African American (1=yes; 0=no)	1.016	**0.025**	0.968	**0.032**	1.024	**0.042**	0.983	0.172	1.009	0.211	1.097	**0.000**	0.969	**0.000**	1.041	0.052	1.066	**0.011**	0.998	0.678	1.025	**0.000**
Parent have HS diploma at time of DHA move-in (1=yes; 0=no)	0.994	0.403	0.992	0.625	0.999	0.926	1.007	0.601	0.993	0.375	1.016	**0.028**	0.990	0.154	0.980	0.365	1.001	0.981	1.009	0.190	1.001	0.931
Parent have any higher education at time of DHA move-in (1=yes; 0=no)	1.000	0.986	1.022	0.375	0.997	0.881	1.052	**0.005**	0.995	0.680	1.012	0.239	1.009	0.384	0.980	0.539	0.914	0.066	0.999	0.895	1.002	0.863
Kids share same biological dad (1=yes; 0=no)	1.000	0.979	0.997	0.839	1.008	0.465	1.009	0.473	0.995	0.465	1.007	0.337	0.999	0.932	0.977	0.283	0.989	0.657	1.002	0.793	1.006	0.346
Parent Depressive Symptomatology Scale at time of interview	0.025	0.951	-0.219	0.704	2.283	0.250	-0.055	0.889	0.130	0.770	-0.135	0.543	0.012	0.964	0.782	0.363	0.520	0.789	-0.193	0.467	0.104	0.766
Parenting Efficacy Scale at time of interview	-0.029	0.656	0.096	0.258	-0.533	**0.038**	0.042	0.498	-0.018	0.808	-0.010	0.791	0.035	0.398	-0.062	0.682	-0.020	0.950	0.043	0.307	0.018	0.748
Parenting Beliefs Scale at time of interview	-0.014	0.913	-0.019	0.919	-0.277	0.699	-0.068	0.580	0.007	0.961	-0.095	0.104	0.041	0.634	0.102	0.732	0.928	**0.025**	0.064	0.455	0.081	0.450

Note: P/C = Parent or Caregiver; OR = odds ratios for dichotomous outcomes; all neighborhood characteristics measured at time of first DHA move-in

N=216

bold = *p*<.05

Exhibit A-3C. Relationships Between DHA Resident and Neighborhood Characteristics: Households with 3+ Children

Characteristics of DHA Resident	Percent female headed households in neighborhood		Percent of residents 25+ with LT 9th grade education		Percent of residents 25+ with Bachelor's degree or more		Percent foreign born in neighborhood		Neighborhood poverty rate		Percent Black residents in neighborhood		Percent Hispanic residents in neighborhood		Neighborhood unemployment rate		Neighborhood vacancy rate		Neighborhood homeownership rate		Percent homes built before 1940 in neighborhood	
	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value	Coeff./OR	P value
P/C is single parent (1=yes, 0=no)	1.002	0.807	0.997	0.864	0.997	0.872	1.007	0.644	0.999	0.936	1.010	0.240	0.999	0.886	0.996	0.884	1.013	0.679	0.999	0.917	1.002	0.767
P/C employment status at time of DHA move-in (1=employed, 0=not employed)	0.996	0.621	1.006	0.757	0.997	0.816	1.028	0.056	0.994	0.418	1.002	0.803	1.001	0.875	0.970	0.177	0.928	**0.013**	0.999	0.852	0.995	0.466
P/C hourly wage at time of DHA move-in	-0.054	0.562	0.127	0.579	-0.315	0.428	0.125	0.215	-0.060	0.469	-0.098	0.519	0.115	0.113	-0.110	0.633	-0.322	0.148	0.059	0.368	0.023	0.765
P/C disability status at time of survey (1=yes; 0=no)	0.992	0.530	1.045	0.174	0.952	0.215	1.001	0.960	0.999	0.911	0.990	0.456	1.016	0.245	1.035	0.334	1.033	0.466	1.010	0.364	1.014	0.235
P/C received TANF at time of DHA move-in (1=yes, 0=no)	1.004	0.557	1.010	0.578	1.004	0.773	0.984	0.244	1.012	0.130	0.991	0.218	1.004	0.585	1.035	0.128	1.030	0.298	0.991	0.204	1.003	0.724
P/C receiving Food Stamps at time of DHA move-in (1=yes, 0=no)	1.010	0.238	1.025	0.191	0.995	0.732	1.008	0.587	1.016	0.070	0.992	0.267	1.010	0.198	1.047	0.060	0.969	0.292	0.985	**0.036**	1.011	0.154
P/C had checking account at time of DHA move-in (1=yes, 0=no)	0.999	0.888	0.952	**0.010**	1.034	**0.037**	0.993	0.613	0.991	0.279	1.012	0.100	0.977	**0.002**	0.960	0.088	0.928	**0.020**	1.003	0.647	0.982	**0.018**
P/C had health insurance at time of DHA move-in (1=yes, 0=no)	0.992	0.336	0.994	0.742	1.028	0.155	1.034	**0.033**	0.991	0.261	0.990	0.160	1.008	0.274	0.973	0.249	0.911	**0.003**	1.001	0.862	1.001	0.943
P/C had too little money for food at time of DHA move-in (1=yes, 0=no)	1.004	0.600	1.011	0.554	1.000	0.985	0.990	0.480	1.005	0.535	0.999	0.858	0.997	0.720	1.002	0.930	1.000	0.995	0.995	0.481	0.997	0.722
P/C had difficulty paying all bills at time of DHA move-in (1=yes, 0=no)	1.000	0.990	1.015	0.431	0.986	0.388	1.022	0.118	0.998	0.782	1.003	0.698	1.003	0.673	1.007	0.758	0.954	0.125	0.996	0.593	1.001	0.846
Frequency that P/C drank alcohol since becoming a parent	-0.003	0.905	-0.004	0.936	-0.028	0.761	-0.009	0.709	-0.001	0.979	-0.015	0.663	0.009	0.592	0.031	0.556	-0.007	0.889	0.005	0.717	0.001	0.946
Frequency that P/C smoked marijuana since becoming a parent	0.008	0.225	-0.019	0.243	0.003	0.926	-0.004	0.644	0.005	0.371	0.008	0.485	-0.002	0.744	0.023	0.149	-0.004	0.828	-0.004	0.380	0.002	0.677
P/C ever seen a psychiatrist (1=yes, 0=no)	1.000	0.990	1.006	0.729	0.975	0.137	0.974	0.061	1.004	0.637	0.997	0.649	1.003	0.639	1.028	0.223	1.028	0.324	1.003	0.692	0.999	0.925
Number of years during childhood that P/C lived in public housing	-0.017	0.867	-0.316	0.175	0.657	0.099	-0.245	**0.009**	-0.011	0.906	0.014	0.931	-0.143	0.056	-0.017	0.946	0.236	0.332	0.037	0.594	0.033	0.684
Number of years during childhood that P/C lived in a home owned by parents	0.058	0.500	-0.213	0.310	-0.070	0.854	0.075	0.437	0.033	0.673	-0.076	0.595	-0.001	0.989	0.063	0.770	-0.283	0.177	-0.084	0.158	-0.129	**0.049**
P/C born in the United States (1=yes; 0=no)	1.008	0.478	1.016	0.520	0.981	0.249	0.988	0.491	1.011	0.352	1.003	0.784	0.998	0.860	1.018	0.564	1.081	0.086	0.986	0.142	1.003	0.753
Spanish language interview (1=yes; 0=no)	0.995	0.770	0.983	0.623	0.996	0.890	0.987	0.642	0.988	0.467	0.988	0.498	1.014	0.388	1.015	0.734	0.953	0.441	1.021	0.155	1.004	0.776
Biological father always lived in household with child(ren) (1=yes; 0=no)	0.985	0.088	0.961	**0.047**	1.020	0.189	0.988	0.444	0.983	0.065	0.991	0.284	0.986	0.068	0.944	**0.027**	0.963	0.251	1.010	0.210	0.980	**0.014**
Parent's age at time of DHA move-in	-0.523	**0.024**	0.577	0.364	-0.622	0.582	0.516	0.055	-0.417	0.052	-0.933	**0.011**	0.301	0.145	-1.267	**0.029**	-1.362	**0.018**	0.212	0.241	-0.288	0.164
Year that P/C moved into first randomly assigned unit	-0.171	0.193	0.118	0.726	-0.611	0.289	0.422	**0.000**	-0.154	0.194	-0.306	0.152	0.236	**0.017**	-0.296	0.376	-0.721	**0.016**	0.063	0.517	-0.077	0.494
P/C African American (1=yes; 0=no)	1.026	**0.001**	0.975	0.153	1.020	0.193	0.966	**0.016**	1.023	**0.004**	1.053	**0.000**	0.967	**0.000**	1.064	**0.007**	1.097	**0.002**	0.986	**0.041**	1.013	0.076
Parent have HS diploma at time of DHA move-in (1=yes; 0=no)	0.990	0.192	0.973	0.146	1.040	**0.015**	1.002	0.897	0.987	0.112	0.999	0.855	0.995	0.541	0.979	0.363	0.938	**0.042**	1.012	0.102	1.004	0.539
Parent have any higher education at time of DHA move-in (1=yes; 0=no)	0.974	0.123	0.994	0.859	1.017	0.444	1.038	0.113	0.979	0.195	1.011	0.367	0.996	0.780	0.957	0.324	0.957	0.445	1.008	0.553	1.004	0.782
Kids share same biological dad (1=yes; 0=no)	0.989	0.167	0.976	0.205	1.003	0.821	1.019	0.183	0.991	0.263	0.995	0.508	1.000	0.990	0.989	0.626	0.929	**0.024**	1.008	0.279	0.992	0.273
Parent Depressive Symptomatology Scale at time of interview	-0.164	0.245	-0.228	0.522	-0.044	0.945	0.127	0.432	-0.162	0.197	-0.208	0.376	-0.043	0.719	-0.600	0.072	-0.491	0.159	0.063	0.544	-0.121	0.305
Parenting Efficacy Scale at time of interview	0.000	0.995	0.017	0.909	-0.050	0.846	-0.011	0.866	-0.009	0.866	0.122	0.192	-0.010	0.839	0.030	0.838	0.144	0.324	0.034	0.421	0.101	**0.018**
Parenting Beliefs Scale at time of interview	-0.121	0.119	-0.314	0.099	0.646	**0.045**	0.028	0.762	-0.123	0.073	-0.188	0.143	-0.018	0.796	-0.144	0.478	-0.249	0.213	0.069	0.228	0.034	0.616

Note: P/C = Parent or Caregiver; OR = odds ratios for dichotomous outcomes; all neighborhood characteristics measured at time of first DHA move-in

N=265

bold = *p*<.05

Only two individual characteristics had a frequency of statistically significant coefficients that were greater than average: African-American DHA tenant (15 percent) and household wages (14 percent). It is noteworthy that although disability status generated a non-random assignment to particular developments due to DHA rules (as shown in Exhibit A-1) this apparently did not produce a strong association with particular neighborhood characteristics because the locations where the disabled were assigned evinced considerable variation.

Of course, geographic selection bias arises to the extent that individual household characteristics that are *not* observed (or controlled statistically) are correlated with both neighborhood characteristics and child outcomes. In this regard it is revealing to separate the individual characteristics listed in Exhibit A-3 into the first 15 (which were not observable to DHA officials because they were gleaned from our household survey) and the last 12 (which likely were). Ninety-five percent of the former set's coefficients were not statistically significant, whereas only 88 percent of the later set's were. This is consistent with the notion that, although DHA's assignment process may not have produced a completely random assignment across neighborhood characteristics based on household characteristics that DHA staff could observe, it nevertheless likely produced such based on household characteristics that they could *not* observe.

We therefore conclude that this third piece of evidence suggests the DHA allocation process produced a quasi-random assignment *across geographic characteristics*, with the possible exception of two individual characteristics observable by the DHA—African-American ethnicity and household wages—that are easily controlled in our analyses. Even more importantly, we conclude that the DHA allocation process produced a quasi-random assignment across geography in terms of individual characteristics *not* observable by the DHA (but observable to us from our survey). This gives us some confidence that any additional household characteristics we do not observe in our study are similarly quasi-randomly allocated across neighborhood characteristics.

Relationships between Typically Unobserved Individual Characteristics and Neighborhood Characteristics using Monte Carlo Simulation

Recall that the key issue at hand is whether DHA's assignment of public housing tenants to neighborhoods effectively removes the correlation between *unobservable* (i.e., cannot be controlled statistically) parental characteristics that might affect both characteristics of location chosen and individual outcomes being investigated. We investigated this by examining the degree to which a variety of characteristics of parents/caregivers in our sample that typically are not observed in neighborhood effect studies were correlated with multiple characteristics of their neighborhoods at the time of initial assignment by DHA. The intuition guiding our analysis is as follows. An actual random assignment of DHA applicants to DHA dwellings will likely produce by chance a few non-zero pairwise correlations between DHA household characteristics and neighborhood characteristics. A Monte Carlo simulation repeating such random assignments will generate bootstrapped standard errors and distributions of such correlations for each pair. This provides the benchmark against which we will compare the *actual* pairwise correlations between DHA household characteristics and neighborhood characteristics. If the pattern of the actual correlations does not differ significantly from that produced by the simulation, we will fail to reject the null hypothesis that the DHA assignment process yielded a quasi-random geographic assignment of households according to their unobserved characteristics.

In particular, we implemented this strategy as follows. We considered here the unobserved (by DHA and typically in other studies) characteristics of parents (listed in Exhibit A-4) and the characteristics of census tracts considered above. For each of the three aforementioned family sizes of DHA tenants we calculated the Pearsonian correlation between each pairwise combination of parental characteristics and neighborhood characteristics observed when the DHA first assigned our sample households to their DHA units.

As a comparative benchmark for these correlations we conducted Monte Carlo simulations in which each sample household was, indeed, randomly assigned to one of the DHA units (for the appropriate family size) with its associated bundle of neighborhood characteristics that we observed whenever the initial assignment of household in our study actually occurred.[30] In each iteration after all households were randomly assigned we calculated correlations for all pairwise combinations of parental characteristics and neighborhood characteristics. We used 10,000 repetitions of these simulations to produce distributions for all pairwise combinations of parental characteristics and neighborhood characteristics and associated bootstrapped standard errors. This allowed us to estimate: (1) for each correlation a 95 percent confidence interval, and (2) across all pairwise correlations how many significantly different from zero would be expected by chance when produced by a random assignment process.

The results are reported in Exhibit A-4. The parental characteristics are listed in the rows and the three family-size strata in the columns. The cells show for how many of the possible neighborhood characteristics the initial DHA assignment produced an actual correlation with the given parental characteristic that was significantly different from zero at the 5 percent level (two-tailed test); the actual correlation coefficient and the neighborhood characteristic involved are reported in these cases. The exhibit shows that for families with no or one child and families with two children, only eight (5 percent of possible correlations) were statistically different from zero; the corresponding figure for families with three or more children was 12 (8 percent of possible correlations). Our simulations showed that in over 98 percent and 95 percent of the cases, respectively, a *larger* number of statistically significant correlations were produced by a *random assignment.* This strongly indicated that the relatively rare non-zero correlations we observed from initial DHA allocations of tenants to neighborhoods (shown in Exhibit A-4) were consistent with those that would have been generated by a pure process of random assignment. These results suggest that the DHA natural experiment likely removes the correlation between parental characteristics (which we do not observe and cannot control in our Denver study) that may potentially affect both initial DHA neighborhood characteristics and subsequent individual outcomes.

[30] The programming and execution of these simulations was conducted by Dr. Albert Anderson of PDQ Inc., whose contribution we gratefully acknowledge.

Exhibit A-4. Simulation Results: Number of Statistically Significant Correlations between Typically Unobserved Household Characteristics and Neighborhood Characteristics

Household Characteristic	Families with 0-1 Child	Families with 2 Children	Families with 3+ Children
Ever not enough food for family while reside in this location	0	1 (%black=.14)	0
Ever unable to pay all bills while reside in this location	2 (%foreign-born = .13; %vacant = -.16)	2 (%elem. school ed. = -.17; %vacant = -.14)	1 (%vacant = -.12)
Frequency of alcohol use since becoming parent	2 (%unemployed = -.16; %owner =.13)	0	1 (%black = -.09)
Frequency of marijuana use since becoming parent	1 (%black = .17)	0	0
Frequency of drug use since becoming parent	1 (%black = .13)	0	0
Ever seen psychologist, psychiatrist or counselor	0	0	0
Did your parents ever live in public housing when you were growing up	1 (%female heads = .22)	0	1 (%foreign born = -.18)
Did your parents ever own their home when you were growing up	0	3 (%elem. school = .26; %college = -.26; %own = .20)	0
Born in U.S.	1 (%college = -.16;)	0	0
Primary language is Spanish	0	0	0
Father of child always lived in home while child growing up	0	0	5 (%female heads = -.11; %elementary school = -.10; %poor = -.10; %own = .09; %pre-1940 homes= -.12)
Parental depression (CESD) scale	0	1 (%Latino = .13)	2 (%elem. school = .13; %Latino=.13)
Parental self-efficacy scale	0	0	0
Parental beliefs & practices scale	0	1 (%Latino = -.21)	2 (%college = -.09; %black = -.12)

Source: authors' calculations based on Monte Carlo simulations of Denver Child Study survey data; statistically significant household-neighborhood characteristic correlations shown parenthetically

Conclusion

Natural experiments involving residential placements under the auspices of some public program offer potentially powerful vehicles for measuring neighborhood effects because they can rupture the association between unobserved characteristics of the individuals being studied and characteristics of their neighborhood. In this appendix we have investigated the extent to which a natural experiment involving public housing in Denver offers such potential.

Our analysis of the Denver Housing Authority's dwelling allocation procedures revealed considerable room for tenant self-selection and/or DHA staff selection to enter. Nevertheless, we found that the initial occupancy mimicked a quasi-random assignment process to DHA dwellings or neighborhoods, with the exception of African American ethnicity and disability status. Only African American ethnicity (and to a lesser degree, household wages) exhibited above-average frequencies of associations with neighborhood conditions, however. This suggests that, *conditioned on ethnicity and wages,* the DHA allocation process produced a quasi-random initial assignment across neighborhood characteristics. The empirical implication is that models estimating neighborhood effects using the current data must control for ethnicity and wages to avoid geographic selection bias. We, in fact, do so in all analyses conducted in this paper.

Even more importantly, two sorts of analyses indicate that the DHA allocation process produced a quasi-random assignment across neighborhood conditions in terms of individual characteristics *not* observable by the DHA (but observable to us from our survey). This gives us some confidence that any additional household characteristics we do not observe in our study are similarly quasi-randomly allocated across neighborhood characteristics.

Nevertheless, the clear indication of non-random assignment based on African American status is worrisome. We therefore are motivated to use initially offered neighborhood as an identifying strategy for assuring only exogenous variation in our neighborhood context measures is the source of our parameter estimates.

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