Asian Immigrant Children's School Performance:
The Influences of Neighborhoods and Schools

Suet-ling Pong
Penn State University
310D Rackley Building, University Park, PA 16802
Pong@pop.psu.edu
814-863-3770 (voice)
814-865-1480 (fax)

and

Lingxin Hao
Johns Hopkins University
Hao@jhu.edu

Asian Immigrant Children's School Performance:
Neighborhood and School Influences

Abstract

Using data from the Adolescent Health Survey, we examine if neighborhood and school characteristics can explain Asian immigrant youth's educational advantage. Although we found no significant SES disadvantage of foreign-born Asian students, and third-generation Whites are more likely than second-generation Asians to live in low SES neighborhoods and to attend low SES schools, immigrant Asian students are more likely than are native White students to live in neighborhoods with greater concentration of minorities, and with higher proportions of female-headed households and of women working full time. Foreign-born Asian students reported more negative school climate and larger class size. An advantage all Asian students have is that they are more likely to have school peers with high GPA. These racial differences in neighborhoods and schools taken together, however, do not account for the performance gap between native Whites and Asian students of immigrants.

In this study we investigate the effects of neighborhoods and schools on the educational performance for the children of Asian immigrants. Educational differences between immigrant groups often mirror the social contexts in which these groups are embedded. The most widely-studied social context for Asian immigrant children's assimilation has been the family. Researchers have identified a number of family factors in Asian immigrant children's education: parental expectations or optimism, parental language, length of residence in the U.S., family structure, sibship size, parental support and involvement (Suarez-Orzco, 1989; Kao and Tienda, 1995; Portes and Rumbaut, 1996; Glick and White, 2000; Rumbaut and Cornelius, 1995; Fuligni, 1997). However, even taking into account these various family factors, there are important educational differences between Asian and non-Hispanic Whites as well as differences between various Asian groups that cannot be accounted for (Rong & Grant, 1992; Portes & MacLeod, 1996; Hao & Bonstead-Bruns, 1998; Hirschman 2001).

More recent research on Asian immigrant children's schooling has turned to the influence of other social contexts, particularly the neighborhood (Sampson, Squires, and Zhou, 2000). In fact, one of the most puzzling findings in the immigrant literature is that some groups of immigrant youth outperform others even when these youth are from equally disadvantaged immigrant communities and they attend equally disadvantageous schools (Zhou and Logan 2003). Research to date is far from conclusive and, in fact, the search for neighborhood and school influences to explain differences in immigrant children's schooling is still in its infancy. Most studies are qualitative in nature with small and localized samples, and it is unclear if the study findings can be generalized to children of immigrants nationally.

Our study, using a nationally representative sample of adolescents, aims to narrow this knowledge gap.

In this paper we ask the following research questions: Is Asian immigrants' school performance associated with the characteristics of neighborhood peers, the characteristics of neighborhood adults, and the relative socioeconomic status of the child's family with the socioeconomic status of other families in the neighborhood? Similarly, do we find Asian immigrants' school performance to be related to their school peers and adults in school?

Theoretical Considerations

Since W.J. Wilson's (1987) seminal work on the social disorganization of the inner city and its consequences for creating a "truly disadvantaged" population, studies of neighborhood have proliferated and made a number of theoretical and methodological advances (see reviews by Leventha and Brooks-Gunn, 2000; Harding, 2003). Discussions on these disadvantages are often rooted in social disorganization theory (Wilson, 1987) or epidemic theory (Crane, 1991). By contrast, explanations for the advantages of of living in higher status neighborhoods usually follow social capital theory (Coleman, 1988, Sampson, Morenoff, and Earls, 1999) and research on concentrated wealth (Massey and Denton, 1993). When it comes to the mechanisms through which neighborhood exerts an effect on individuals, researchers can resort to the more comprehensive theoretical framework advanced by Jencks and Mayer (1990), who identified five models that link neighborhood characteristics to individual residents' behaviors. This framework guides our selection of variables for this study.

Jencks and Mayer proposed a taxonomy that includes five models: the epidemic model, the collective socialization model, the institution model, the competition model, and

the relative deprivation model. The epidemic model predicts that negative peer influence will spread problem behavior. The collective socialization model predicts that neighborhood role models and monitoring will promote student engagement and achievement. The institution model links the quality of neighborhood schools to student outcomes. The competition model postulates that classmates compete for scarce neighborhood resources. Finally, the relative deprivation model suggests that students from vulnerable families with relatively low standing in the neighborhood are likely to develop a feeling of deprivation.

Data and Samples

We use the base year survey of the National Longitudinal Study of Adolescent Health (Add Health website, see www.cpc.unc.edu/projects/addhealth). Add Health is a nationally representative study of youth in grades 7-12. Add Health sampling was first conducted at the school-level, and then at the student-level within schools. The first wave was completed in 1995 with a sample of over 20,000 adolescent students from more than 170 schools. The high school sample is representative of U.S. schools with respect to region of country, urbanicity, school type, ethnicity, and school size.

There are two school surveys in the Add Health base year study. One is the administrator report provided by the school administrator. The other is an "in-school" survey, which is a self-administered instrument for *all* students in grades 7 to 12 in the participating 140 schools during the 1994-95 school year. The questionnaire included topics such as the social and demographic characteristics of the adolescent, the education and occupation of parents, household structure, friendships and so on. In addition, each adolescent was given a roster of students in his/her school so that he/she could identify up to 5 male and 5 female friends, to locate and record their student numbers, and to indicate which of 5 activities they

had done with each of these friends during the past week. Because friends' student numbers were recorded, a child's peer group and friendship networks can be determined and described in detail. The in-school questionnaire was completed by more than 90,000 adolescents.

Add Health also provides data at the neighborhood level. As part of Add Health's data collection, over 2,000 neighborhood variables were extracted from the 1990 Census of Population and Housing and were linked to individual students. The neighborhood units in Add Health included the census block group, census tract, and county. In this paper, we use a Census tract to represent a neighborhood. The analyses reported below make use of data from the first wave (1994-95) of the In-home survey, In-school survey, School Administrative Survey, School Information Codebook, and the Contextual data.

Our study sample eliminates adolescents who have missing information on their grade-point-averages or on their home location as indicated by a Census tract. There are 1,035 adolescents having missing GPA, and an additional 9 adolescents who have missing information on their neighborhood location. The total study sample has 17,719 adolescents within 133 schools.

Our study sample contains substantial cross-classification between schools and neighborhoods. All 17,719 adolescents come from 2,212 Census tracts. Students can share memberships in a tract but attend different schools. Only in 1,707 Census tracts do resident adolescents attend the same school. Adolescents living in other tracts are split between two or three schools. There are a total of 2,722 tract-school specific units.

Outcome Variable

The outcome measure for this study is adolescents' school performance, indicated by their self-reported GPA which is the average grade of at least three of the four subjects:

English, math, history, and social studies. Grades are measured on a four point scale with A=4, B=3, C=2, and D/F=1. Previous studies have found that self-reported grades are highly correlated with actual grades taken from official school records (Dornbusch, et al., 1987).

Neighborhood Variables

We have information on the number of 16-19 years olds who did not complete high school and are idle, i.e. not in school or arm forces or in the labor force. We match this racial characteristics of the Census tract with an adolescent's reported race to construct the number of co-racial peer not in school, have no high school diploma and are out of the labor force. Two variables, the proportion of co-racial adults having a college degree, and the proportion of adults in professional and managerial occupations indicate the extent to which there are positive role models in the neighborhood. Education and occupation are typical measures of SES, so we combine these two variables to create a *neighborhood SES composite* (Conbach's α=.85). This composite is further divided into two dummy variables showing high and low neighborhood SES indicated whether the neighborhood SES is one standard deviation above and one standard deviation below the mean SES, respectively. Other neighborhood variables include the proportion of femal-head, co-racial households with children, the proportion of women aged 16 and above who work full time, and a measure of racial segregation.

School Variables

We organized the school variables under the same two models: epidemic and collective socialization (see Table 2). The former emphasize the peer influence and the latter focus on the teacher and a structural characteristic (i.e., class size) that has implications on teacher-student relationships. Adolescent's *nominated peers' GPA* indicates both positive and negative peer influence on the adolescent's schooling. This variable is constructed by

averaging the adolescent's nominated school friends' GPA. The number of friends nominated is up to 10, and some of the nominated friends who do not attend the same school are not included.

Negative school climate is a composite of two variables showing individual adolescents' disagreement to the questions about their feelings toward their school. Each of these individual-level variables is summed to the school level and then averaged to construct a school-level variable. They are then combined as an alpha score.

Problem behavior is another composite, in this case consisting of three individual variables indicating the average number of times students have trouble with teachers, with homework, and with other students. Again, each individual variable is summed to the school level and then averaged to create a school-level variable before all three school-level variables are combined.

Teacher quality composite combines two school-level variables: the percentage of teachers in a school who have worked for five or more years, and the percentage of teachers having an MA or a higher degree. Finally, average class size in a school is used to indicate the amount of attention teachers can allocate to each student in class as a measure of teachers' supervision and monitoring.

Other Variables

The adolescent respondents were asked whether they were born in the U.S., whether their fathers were born in the U.S., and whether their mothers were born in the U.S. Using nativity information, we constructed three generational-status variables. The 1st *generation* adolescents are those who were born outside the U.S. and who have at least one foreign-born parent. Adolescents are defined as belonging to the 2nd *generation* if they themselves were

native born, but who have at least one parent born outside of the U.S. The 3rd+ *generation* adolescents are those who are native-born and have native parents. If the adolescent's nativity is unknown but both parents were born in the U.S., we assume that this adolescent is the 3rd+ generation.

The adolescent's race/ethnicity is reported in various places in both the in-home and in-school survey. Our analysis compares the determinants of school grades across seven ethnic and generational groups of children: the 3rd+ generation of *non-Hispanic White*, the 1st, 2nd, 3rd+ generations of *Asian*, and all other racial/ethnic groups regardless of their generational status.

Adolescent's socioeconomic status is represented by *parental education* and the log of *household income*. Parent's highest education level is measured by four dummy variables: less than high school graduate, some college, and college or more. The reference category is high school graduate.

Other control measures, obtained from the in-home survey, include the adolescent's *grade level*, gender (being *male*), and the child's family structure.[1] Family structure is indicated by three variables: *stepfamily* with biological and non-biological parents; *single-parent family* with only one biological parent; and *guardian family* with no biological parents. The reference group is the *two-parent family* where both biological parents are present in the household.

Methodology

There are well-known methodological challenges involved in the estimation of neighborhood effects. Selection bias, or unobserved heterogeneity, is one such problem. We

[1] In exploratory analysis we also included the number of siblings living in the household but did not find any significant associations, thus we excluded this variable from our final analysis.

are unclear about the extent to which differences in children's education are attributable to their neighborhood characteristics, as opposed to the underlying reasons why their parents make choices about where they live. More highly educated parents may choose to live in neighborhoods with good schools. In this case, their children's school performance may reflect parental aspirations and involvement rather than the neighborhood characteristics. Thus, without controlling for family characteristics, neighborhood effects may be biased upward. However, controlling for family characteristics could also lead to downward bias of neighborhood estimates, if neighborhood effects are mediated through the family(Jencks and Mayer, 1990; Harding 2003). Suppose that neighborhood poverty is the cause of low family income. In this case, a study that controls for the effect of family income reduces the true, larger effect of neighborhood. Perhaps because of these counterbalancing forces, attempts to correct for selection bias through the application of sibling models (Aaronson, 1997) or instrumental variable methods (Foster and McLanahan, 1996; Duncan, Connell, and Klebanov, 1997) did not improve the estimation of neighborhood effects substantially (Leventhal and Brooks-Gunn, 2000).

Another methodological challenge facing neighborhood effects on education outcomes is the incorporation of school characteristics in the study. Neighborhood researchers have long recognized the importance of the school as a neighborhood institution that has powerful impact on child development. And some researchers have considered school effects alongside with neighborhood effects (Ainsworth, 2002; Catsambis and Beveridge, 2001; Entwisle, Alexander, and Olson, 1994; Garner and Raudenbush, 1991). However, in a review of neighborhood research from 1990 to 1998, Leventhal and Brooks-

Gunn (2000, p. 323) found no studies that examined school and neighborhood characteristics simultaneously test for the existence of school-mediated neighborhood effects.

To study the mediating factor of school in the relationship between neighborhoods and a child's education poses a non-trivial methodological problem. The methodological difficulty arises when we consider both neighborhoods and schools simultaneously. Geographically speaking, a neighborhood, be it measured as a census tract or a postal zipcode, is usually a smaller unit than a school's catchment area. On the one hand, a number of neighborhoods could feed into the same school and, in large cities, this number could be quite large. On the other hand, it is possible that children living in the same neighborhood attend different schools. Therefore, neighborhoods are not completely "nested" within schools, statistically speaking, although students or residents are nested within both units. This type of data structure does not readily lend itself to common statistical procedures such as two- or three-level hierarchical models. We apply here a *cross-classified random effects model* (Goldstein, 1994) to overcome this difficulty so we are able to estimate the effects of schools and neighborhoods effects separately with greater precision. To our knowledge, no previous study in the U.S. has taken this approach to research into neighborhood and school effects simultaneously.

In our study, both neighborhoods and schools are contextual units within which the students are situated. The hierarchical nature of our data violates the homogeneity assumption in conventional models, thus it is appropriate to use multi-level models that take into account the potential heterogeneity across schools or neighborhoods. However, the usual hierarchical linear models (HLM) can handle multiple-level data only when these levels are "nested" (Bryk and Raudenbush, 1992), that is, each student goes to one and only

one school. The problem we have at hand is not so simple. Although each student lives in one and only one neighbor, and goes to one and only one school, each neighborhood may be resided by adolescents who goes to a variety of schools. Therefore, neighborhoods are not "nested" within schools. A three-level HLM model would not be appropriate because one has to eliminate tracts that "send" adolescents to more than one school. A two-level HLM model would be appropriate as long as the cross-classified cases are identified. We build an "unstructured" level-2 cross-classified random effects model that specifies a unique school-tract location (Goldstein, 1994):

$$y_{i(jk)} = \beta_0 + \beta_1 X_{i(jk)} + u_{(jk)} + e_{i(jk)}.$$

This is a two-level model where the ith student is classified by the jth school and the kth neighborhood. Y is the response variable of school performance. This model assumes that the covariance between two students is zero if they attend the same school but live in different neighborhoods, or if they live in the same neighborhood but attend different schools. Their covariance is nonzero only if they belong to the same school and neighborhood. Thus this cross-classified model makes more restrictive assumptions about the cross-classified cases than the "marginal structured" model discussed in Goldstein (1994), or the cross-classified random effects model discussed in Raudenbush and Bryk (2002). Unlike the latter model, our analysis does not distinguish the random effects for schools and census tracts. Despite of this restrictive assumption, Goldstein (1994) found little difference in the fixed effect estimates between the unstructured and structured models. Since our concern is the fixed effects of schools and neighborhoods, the indistinguishable random effects do not affect the purpose and conclusions of this study.

Analysis Results

Descriptive Analysis

Table 3 shows the weighted sample means of GPA by ethnic and generation groups, the characteristics of the neighborhoods in which each group lives, and the characteristics of the school each group attends. Consistent with previous research (e.g., Hao and Bonstead-Bruns, 1998), the results here show high school performance among Asian students. Adolescents of Asian immigrants outperform non-immigrant and non-Hispanic White students.

The type of neighborhoods in which 1st generation Asian youths reside differ little from those where 3rd+ generation White youths live. Third generation Asian adolescents reside in neighborhoods with significantly lower number of idle youths. Second generation children of Asian immigrants are also significantly more likely to reside in high SES neighborhoods and less likely to enter low SES neighborhoods than do 3rd generation White children. Asian youths live alongside with significantly lower proportion of female-headed households with children than do 3rd generation White youths. Compared to 3rd generation White youths, Asians of any generation are more likely to locate in communities with higher rates of female labor force participation and racial dispersion (i.e., high percentage of minority groups).

Although 1st generation immigrant students of Asian descent attend schools with more negative school climates and large average class size than do 3rd generation White students, Asian students manage to maintain school friends who earn higher GPAs. Having high performing peers is also the characteristics of 2nd and 3rd generation Asian youths, but 3rd generation Asian youths are less likely than 3rd+ generation White to enter higher SES schools. Except for the foreign-born, Asian students are less likely to attend lower SES schools than do 3rd generation White students.

Separate Analysis of Neighborhood and School

Given the differences between 3rd+ generation White and Asian groups' neighborhood and school characteristics, we would expect that neighborhoods or schools account for some of the differences in adolescents' school outcomes. Table 4 partially corroborates this expectation. Four cross-classification random coefficient models are presented here. Looking across all 4 models, we can see how the association between changes in the Asian-White GPA gap when different sets of variables are entered. Model 1 tells what we already know: Asian students who have immigrant parents have significantly higher GPAs than do 3rd generation White students. Using a t-test, we found significant generation differences that indicate generational decline: foreign-born Asian adolescent perform substantially better than their native born co-racial youth. Not only do foreign-born Asian students outperform native-born Asian students, native-born 2nd generation Asian students also outperform their co-ethnic 3rd+ generation counterparts.

Neighborhood variables are added to this individual model in Model 2. We can see some significant neighborhood effects on student GPA. High SES neighborhoods are positively associated with adolescents' GPA, but neighborhoods with high proportions of co-racial female-headed households are negatively associated with youth's GPA. Also, adolescents' GPA tends to be lower in neighborhoods with high levels of fulltime labor force participation among women. For Asian students, although they are highly represented in neighborhoods with high percentage of women working full time, they are less likely than other groups to live in neighborhoods with high percentage of female-headship. These disadvantaged and advantaged neighborhood effects cancel each other out, leaving virtually no change in the Asian-White gap after neighborhood variables are taken into account.

In a separate model - Model 3, we added to the basic individual model the school factors. All school factors here significantly affect adolescents' GPA. The largest school effect comes from adolescents' nominated school peers. No doubt peers influence each other's behavior. Judging from the t-statistics (not presented), nominated peers' influence is larger than the influence of the "generalized other" schoolmates, measured by negative school climate and problem behaviors in school. After controlling for school characteristics, the gap between 3rd generation Whites and the 1st or 2nd generation Asians narrowed slightly, but the change is insignificant, suggesting that school characteristics do not contribute to the Asian-White achievement gap.

In exploratory analysis, we found that changes in the ethnic-generation differences is primarily due to the type of peers adolescents are associated with, so we exclude nominated peers' GPA in Model 4. Here we can see that the Asian-generation coefficients are similar to those in Model 3. This suggests that neither neighborhood-level and school-level factors (nominated peers are measured at the individual level) do not explain the performance gap between 3rd generation Whites and Asian immigrant students.

Examining Family, Neighborhood and School Factors

Because family characteristics exert a major influence on adolescents' life chances, regardless the adolescent's place of residence, it is crucial to control for family characteristics in order to obtain unbiased estimates of neighborhood effects (Jencks & Mayer, 1990; Leventhal & Brooks-Gunn, 2001). Table 5 shows the four models random coefficient models, each of which includes family background characteristics measured by parental education, family structure, and household income. From Model 5 we can see that the

achievement gap between 3rd generation Whites and Asians persist in this model, suggesting that this racial gap is independent of the family.

Neighborhood SES is associated with family SES, so taking into account family SES reduces the effect of neighborhood SES (see Model 6 in Table 5). Also, part of the disadvantage of living in a neighborhood with high proportion of co-racial female-headed households can be explained by the family situations of the resident adolescents, many of whom live with single parents themselves. Thus, controlling for adolescents' family structure eliminates some of the academic disadvantages that are associated with neighborhoods having a high proportion of female-headship. When family variables are included in Model 6, the effects of high neighborhood SES and neighborhood co-racial female-headship are reduced, although both variables remain statistically significant determinants of adolescents' GPA. By contrast, controlling family background effects *increases* the negative impact of neighborhood women's full time work on children's school performance.

Another reason why the impact of high neighborhood SES has dropped in size, from .16 to .09, is because of the inclusion of an interaction term between individual adolescents' low parental education (without less than high school graduation) and high neighborhood SES (Model 6). This interaction term is used to tap the conceptual model of relative deprivation. The coefficient of this interaction term is negative, as expected. According to Jencks and Mayer (1990), lower SES adolescents compare themselves to their high SES neighbors and feel deprived. Thus we expect that they do worse in high SES neighborhoods than do their counterparts in lower or middle SES neighborhoods. However, such neighborhood difference represented by the interaction term is statistically insignificant.

Model 7 includes both family and school variables. Here, the effect of school SES drops substantially after family SES is taken into account. Not only does school climate effect reduce in size, the effect of problem behaviors at school on adolescents' performance becomes insignificant statistically. Also, the neighborhood effects are reduced for neighborhood co-racial female-headship and neighborhood SES, and the proportion of women working full time becomes insignificant. This suggests that there are mediating effects of the school on the relationship between neighborhood factors and adolescents' school performance outcomes. Had we not taken into account school characteristics, neighborhood effects would have been slightly biased upward. Despite the fact that all measured contextual factors of the family, school, and neighborhood are included in Model 7, generational differences among Asian students are virtually unchanged. Our results provide no evidence that neighborhood characteristics explain either the educational advantage of Asian youths over 3rd generation White students.

Summary and Conclusions

Our purpose in this paper has been to illuminate the role played by neighborhoods in the achievement differences between Asian immigrants and the non-immigrant "mainstream" American children. Our research builds on the simple premise that children's school performance is tied to the social and economic opportunities of the geographical space in which they reside. Guided by Jencks and Mayer's (1990) theoretical framework on five mechanisms of neighborhood effects, we identified variables and constructed multiple-indicator composites to measure contextual factors that correspond to five theoretical constructs. We also extend Jencks and Mayer's framework to specify various channels by which schools, as neighborhood institutions, operate in ways similar to neighborhoods in the

transmission of advantages and disadvantages to children. Epidemic influence and collective socialization are mechanisms of neighborhood effects, as they are mechanisms of school effects. Neighborhoods are defined in this study as census tracts. Applying a cross-classification random effects model that takes into account the cross-classified and hierarchical structure of the data, we examine whether neighborhoods mediate the academic performance differences between non-immigrant White adolescents and their Asian counterparts.

We do not find evidence neighborhood characteristics explain away superior school performance of Asian students of immigrants. Puzzling as it may be, school performance differences between non-immigrant White adolescents and Asian adolescents of immigrants cannot be explained by *any* differences in their family, schools, or neighborhoods.

Despite this non-finding, our results reveal that the strongest neighborhood predictors on GPA are the empirical measures that correspond to the theoretical model of collective socialization. High SES adult neighbors who have a college education and hold professional and managerial occupations provide positive role models that encourage adolescents' academic achievement, but co-racial single mothers raising children in the neighborhood serve the opposite effect (except among Asian immigrant children). Therefore, neighborhood role models serve as a form of collective socialization are the most important mechanism. This result is the most consistently found neighborhood effect on children's academic achievement and attainment (Ainsworth, 2002; Vartania & Gleason, 1999; and see reviews by Leventhal & Brooks-Grun, 2000; and by Jencks and Mayer, 1990).

References

Aaronson, D. 1997. "Sibling estimates of neighborhood effects." In J. Brooks-Gunn, G.J. Duncan, & J.L. Aber (Eds.), Neighborhood Poverty: Vol.2. Policy Implications in Studying Neighborhoods, pp. 80-93. New York: Russell Sage Foundation.

Ainsworth, James W. 2002. "Why Does It Take a Village? The Mediation of Neighborhood Effects on Educational Achievement." Social Forces 81(1): 117-152.

Bankston, Carl L. III, S. J. Caldas, and M. Zhou. 1997. "The Academic Achievement of Vietnamese American Students: Ethnicity as Social Capital." *Sociological Focus* 30:1-16.

Billy, John O.G., Cubbins, Lisa A., Grady, William R., Kim, Hyoshin, & Klepinger, Daniel H. 2001. "Contextual Effects on Adolescent Alcohol Use." Paper presented at the 2001 Add Health Users Workshop, Bethesda, MD, August 9-10.

Bryk, A., and S. Raudenbush. 1992. *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage Publications.

Catsambis, Sophia & Beveridge, Andrew A. 2001. "Does Neighborhood Matter? Family, Neighborhood, and School Influences on Eighth-Grade Mathematics Achievement." Sociological Focus 34 (4): 435-457.

Clasen, D. and B. Brown. 1985. The multidimensionality of peer pressure in adolescence. J. of Youth and Adolescence, 14, 451-67.

Coleman, J. 1961. The adolescent society. New York, NY: Free Press.

----------. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology* 94:s95-s120.

----------. 1990. *Foundation of Social Theory*. Cambridge: Harvard University Press.

Crane, J. 1991. "The Epidemic Theory of Ghettos and Neighborhood Effects on Dropping Out and Teenage Childbearing." American Journal of Sociology 96: 1126-1159.

Dornbusch, S. 1987. Individual moral choices and social evaluations: a research odyssey. In E. Lawler and B. Markovsky (ed.) *Advances in group processes: theory and research*. Greenwich, CT: JAI Press.

Duncan, G.J., Connell, J.P. & Klebanov, P.K. 1997. "Conceptual and Methodological Issues in Estimating Causal Effects of Neighborhoods and Family Conditions on Individual Development." In J. Brooks-Gunn, G.J. Duncan, & J.L. Aber (Eds.),

Neighborhood Poverty: Vol. I. Context and Consequences for Children, pp. 219-250. New York: Russell Sage Foundation.

Entwisle, D.R., Alexander, K.L. & Olson, L.S. 1994. "The Gender Gap in Math: Its Possible Origins in Neighborhood Effects." American Sociological Review 59: 822-838.

Foster, E.M. & McLanahan, S. 1996. "An Illustration of the Use of Instrumental Variables: Do Neighborhood Conditions Affect a Young Person's Chance of Finishing High School?" Psychological Methods, 1: 249-260.

Fridrich, A. and D. Flannery. 1995. The effects of ethnicity and acculturation on early adolescent delinquency. Journal of Child and Family Studies, 4, 69-87.

Fuligni, A.J. 1997. The academic achievement of adolescents from immigrant families: the role of family background, attitudes, and behavior. Child Development, 68, 351-363.

Glick, J. E. and White, M.J. 2000. "Immigrant Cohorts and Achievement in High School." Paper presented at the Annual Meeting of the Population Association of America, Los Angeles, CA, March.

Goldstein, Harvey. 1994. "Multilevel Cross-Classified Models." *Sociological Methods and Research* 22(3): 364-375.

Hao, L., and M. Bonstead-Bruns. 1998. "Parent-Child Differences in Educational Expectations and the Academic Achievement of Immigrant and Native Students." *Sociology of Education* 71: 175-198.

Harding, David. 2003. "Counterfactual Models of Neighborhood Effects: The Effect of Neighborhood Poverty on Dropping Out and Teenage Pregnancy." American Journal of Sociology 109 (3): 676-719.

Hernandez , D. J., and E. Charney, eds. 1998. *From Generation To Generation: The Health and Well-Being of Children in Immigrant Families*. Washington D.C.: National Academy Press.

Jencks, Christopher & Mayer, Susan E. 1990 "Residential Segregation, Job Proximity, and Black Job Opportunities." In Laurence E. Lynn, J., and Michael G.H. McGeary (Eds.), Inner-City Poverty in the United States. Washington, D.C.: National Academy Press.

Kao, G., and M. Tienda. 1995 "Optimism and Achievement: The Educational Performance of Immigrant Youth." *Social science quarterly*, MAR 01 v 76 n 1, 1

Leventhal, Tama & Brooks-Gunn, Jeanne. 2000. "The Neighborhoods They Live in: The Effects of Neighborhood Residence on Child and Adolescent Outcomes." Psychological Bulletin 126 (2): 309-337.

Massey, D. S., and N. Denton. 1993. *American Apartheid: Segregation and the Making of the Underclass*. Cambridge, MA: Harvard U. Press.

Portes, A., and M. Zhou. 1993. "The New Second Generation: Segmented Assimilation and Its Variants." *Annals of the American Academy of Political and Social Science* 530: 74-96.

Portes, A., and MacLeod, D. 1996. "Educational Progress of Children of Immigrants: The Roles of Class, Ethnicity, and School Context." *Sociology of Education* 69: 255-275.

Portes, A., and R. Rumbaut. 1996. *Immigrant America: A Portrait*. Berkeley: University of California Press, 2nd edition.

Rong, X.L. and L. Grant. 1992. "Ethnicity, Generation, and School Attainment of Asians, Hispanics, and Non-Hispanic Whites." Sociological Quarterly 33: 625-36.

Rumberger, Russell W. & Thomas, Scott L. 2000. "The Distribution of Dropout and Turnover Rates Among Urban and Suburban High Schools." *Sociology of Education* 73(1): 39-67.

Rumbaut, R. G., and W. A. Cornelius. 1995. *California's Immigrant Children: Theory, Research, and Implications for Educational Policy*. CA: The Center for U.S.-Mexican Studies, University of California, San Diego.

Sampson, R. J., J. D. Morenoff, and F. Earls. 1999. "Beyond Social Capital: Spatial Dynamics of Collective Efficacy for Children." *American Sociological Review* 64: 633-660.

Sampson, R.J., Squires, G.D., and Zhou, M. 2001. *How Neighborhoods Matter: The Value of Investing at the Local Level*. Washington D.C.: American Sociological Association.

Suarez-Orzco, M.M. 1989. *Central American Refugees and U.S. High Schools: A Psychological Study of Motivation and Achievement*. Stanford, CA: Stanford U. Press.

Vartanian, Thomas P. & Gleason, Philip M. 1999. "Do neighborhood conditions affect high school dropout and college graduation rates?" The Journal of Socio-Economics 28: 21-41.

Vernez, G. and A. Abrahamse. 1996. *How Immigrants Fare in U.S. Education*. Santa Monica, CA: RAND.

Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: U. of Chicago Press.

Zhou, M. 1997. "Growing Up American: The Challenge Confronting Immigrant Children and Children of Immigrants." *Annual Review of Sociology* 23:63-95.

Zhou, M. and J. Logan. 2003. "Increasing Diversity and Persistent Segregation: Challenges of Educating Minority and Immigrant Children in Urban America." Pp. 185-202 in *The End of Desegregation?*, edited by Stephen J. Caldas and Carl L. Bankston III. New York: Nova Science Publications.

Table 1. Neighborhood Variables

Variables and their theoretical effects	Data Source in the Contextual file
Epidemic influence	
Number of 16-19 not in school or arm forces/no HS/not in LF	TST90708
Number of co-racial peer aged 16-19 not in school or arm forces/no HS/not in LF	TST90709(W), TST90710(B), TST90711(A), TST90712(O)
Collective socialization influence	
Neighborhood role model / SES	
Proportion 25+ without HS diploma or equivalent	tst90680
Proportion co-racial 25+ without HS diploma or equivalent	tst90681, tst90682, tst90683, tst90684
Proportion 25+ with college degree +	TST90686
Proportion co-racial 25+ with college degree +	tst90687, tst90688, tst90689, tst90690
Proportion employed in managerial & professional occs.	tst90795
Proportion men 16+ in civilian LF	tst90732
Proportion co-racial men 16+ in civilian LF	tst90733, tst90734, tst90735, tst90736
Proportion men 16+ worked 48 weeks, 35+ hr/wk	tst90739
Total unemployment rate	tst90754
Proportion of households, female-headed with children	tst90485
Proportion of co-racial households, female-headed with children	tst90486, tst90487, tst90488, tst90489
Neighborhood monitoring	
Proportion women 16+ working 48 weeks, 35+ hr/wk	TST90724
Proportion of HH, married couple with children	tst90449
Proportion of co-racial HH, married couple with children	tst90450, tst90451, tst90452, tst90453
Neighborhood social cohesion	
Dispersion of racial composition	TST90010
Proportion of housing units moved into 1985-1990	TST90813

Table 2. School Variables (the Institution Model)

Variables and their theoretical effects	Data Source
Epidemic influence	
School peer GPA	Inschool & inhome
Negative School climate composite	
Average disagreement that student feel close to people at school	In-school: S62B
Average disagreement that students feel part of the school	In-school: S62E
Problem Behavior composite	
Average times students have trouble with teachers	In-school: S46A
Average times students have trouble with homework	In-school: S46C
Average times students have trouble with other students	In-school: S46D
Collective Socialization influence	
School SES composite	
School SES, percent parent managers or professionals	In-school
School SES, % parents have college or above	In-school
Average class size in school	Sch Adm: A7

Table 3. School Performance, Neighborhood and School Characteristics by Ethnic-generation Groups

Variables	3rd generation White	1st generation Asian	2nd generation Asian	3rd generation Asian
Child Outcome: GPA	2.89	3.21**	3.06*	2.88
Neighborhood				
# 16-19 co-racial peer not in school/ no HS/ not in LF	.04	.03	.03	.02**
Neighborhood: high SES	.13	.32	.40**	.17
Neighborhood: low SES	.09	.06	.02*	.00**
Prop of co-racial households, female-headed with children	.07	.04**	.04**	.03**
Prop women 16+ work full time	.47	.53**	.54**	.54**
Dispersion of racial composition	.16	.55**	.52**	.55**
School				
School peer GPA	2.95	3.21**	3.19**	3.13**
Negative school climate	2.40	2.52**	2.42	2.31
School: high SES	.12	.11	.18	.03*
School : low SES	.14	.09	.03*	.00**
Average class size	24.42	29.10*	27.87	27.37*
N	8613	570	480	97
(percent)	(48.61)	(3.22)	(2.71)	(0.55)

** p < .01, * p < .05. The reference group is 3rd generation White adolescents for all t-tests. N=17,719.

Table 4. Estimates of Family, Neighborhood, and School Factors in Adolescent's GPA

Variables	(1) individual	(2) neighbor	(3) school	(4) school
Ethnicity/Generations				
(Ref: White 3rd + generation)				
Asian	*(a, b, c)*	*(a, b, c)*	*(a, b, c)*	*(a, b, c)*
1st Generation	.33**	.35**	.29**	.37**
2nd Generation	.22**	.24**	.19**	.25**
3rd + Generation	-.04	-.02	-.02	-.01
Demographic Characteristics				
Grade (ref: 9 & 10th)				
7 & 8th grades	.12**	.12**	.09**	.11**
11 & 12	.10**	.09**	.09**	.10**
Male	-.22**	-.22**	.03	-.22**
Neighborhood Characteristics				
# 16-19 co-racial not in school/no HS/not in LF		-.22		
Neighborhood: high SES		.16**		
Neighborhood: low SES		-.03		
Prop of co-racial households, female-headed with children		-.54**		
Prop women 16+ work full time		-.26*		
Dispersion of racial composition		-.07		
School Characteristics				
School peer GPA			.46**	---
Negative school climate			-.23**	-.36**
Problem behavior			-.08**	-.13**
School: high SES			.11**	.21**
School : low SES			-.03	.02
Average class size			-.01**	-.01**

a indicates 1st to 2nd generation comparison significantly different
b indicates 2nd to 3rd generation comparison significantly different
c indicates 1st to 3rd generation comparison significantly different
** p<.01, * p<.05. N=17,719.

Table 5. Combined Effects of Family, Neighborhood, and School Factors on Adolescents' GPA

Variables	(5) Family	(6) Family + neighbor	(7) Family + school	(8) Fam + nei + sch
Ethnicity/Generations				
(Ref: White 3rd + generation)				
Asian	*(a, b, c)*	*(a, b, c)*	*(a, b, c)*	*(a, b, c)*
1st Generation	.32**	.34**	.28**	.28**
2nd Generation	.19**	.21**	.16**	.16**
3rd + Generation	-.08	-.06	-.06	-.06
Family Background				
Parent's Education (ref: high school)				
Less than high school	-.07**	-.01	-.05**	-.02
Some college	.06**	.06**	.05**	.05**
College +	.26**	.25**	.21**	.20**
Family Structure (ref: two parent family)				
1 biological, 1 step parent	-.17**	-.17**	-.14**	-.14*
1 biological parent	-.18**	-.17**	-.15**	-.14**
No biological parent's	-.20**	-.20**	-.17**	-.16**
Household Income (log)	.07**	.06**	.05**	.05**
Neighborhood Characteristics				
# 16-19 co-racial not in school/no HS/not in LF		-.04		.06
Neighborhood: high SES		.09**		.05**
Neighborhood: low SES		.00		.00
Prop of co-racial households, female-headed w children		-.34**		-.21**
Prop women 16+ work full time		-.32**		-.06
Dispersion of racial composition		-.04		.03
(less than HS) x (neighborhood high SES)		-.32		-.23
School Characteristics				
School peer's GPA			.42**	.42**
Negative school climate			-.18**	-.17**
Problem behavior			-.04	-.03
School: high SES			.05**	.05**
School : low SES			.01	.01
Average class size			-.01**	-.01**

Note: All regressions include adolescent's demographic characteristics and other ethnic-generation group.
a indicates 1st to 2nd generation comparison significantly different
b indicates 2nd to 3rd generation comparison significantly different
c indicates 1st to 3rd generation comparison significantly different
N=17,719. ** p < .01, * p < .05.