Birth Status, Family Structure, and School Readiness among Mexican Immigrant Children

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Abstract

Children from Mexican immigrant families have substantially lower levels of school readiness than do White children. Mexican origin women also have higher levels of non-marital fertility than do White women. This study used the ECLS-K to explore whether differences in birth status and in family structure mediated the relationship between race/ethnicity and school readiness, as measured by math achievement in kindergarten. We found that children born to unmarried parents scored almost 3 points lower on achievement tests than did children born to married parents. However, this disadvantage was much less for Mexican immigrant children relative to White children. Though a higher prevalence of cohabitation among the biological parents of Mexican immigrant children offered some protection against the disadvantages of being born to unmarried parents, this was offset by the fact that White children were more likely to live in step families which have particularly negative effects on achievement.

While much research has documented changes in the American family over the last few decades, the three changes that emerged as most critical in the 1990's were the increased prevalence of pre-marital cohabitation, the decline and the delay in marriage, and the increased separation of marriage from childbearing (Bachrach, Hinding, and Thomson, 2000; Bumpass and Lu, 2000). All these factors have contributed to the rise in non-marital fertility, or out-of-wedlock childbearing, an issue that has increasingly gained attention in both the academic and public arenas (Wu and Wolfe, 2001). Of particular concern are the large race/ethnic differences in non-marital fertility. In the 1990's, roughly 39% of all births to Mexican origin women were to unmarried women, compared to 21.5% for White women and 69.4% for Black women (Ventura et al., 1999). Though Black/White differences have recently narrowed somewhat, Hispanic/White differences continue to grow (South, 1999).

Research has begun to focus on what happens to women and children after a non-marital birth (Graefe and Lichter, 2002; Carlson, McLanahan, and England, 2004; Waller and McLanahan, 2004; Cooksey, 1997). Developing a more complete understanding of race/ethnic differentials in the consequences of a non-marital birth is important as the negative effects of non-marital fertility, and the family structures associated with it, are well documented in the social and behavioral sciences (Wu and Wolfe, 2001; McLanahan and Sandefur, 1994). The children of these families are more likely to be poor, to drop out of high school, to have a teenage birth, and suffer from developmental delays (McLanahan and Sandefur, 1994). Additionally, research has documented an increasing difference in the economic well-being of married and unmarried mothers, such that unmarried mothers are increasingly disadvantaged relative to married mothers (Musick, 2000). Of concern in this paper, is what happens to

Mexican Immigrant children, a rapidly growing segment of the population that remains largely understudied.

One of the factors that has received less attention in the literature on the consequences of birth status and family structure is school readiness—the degree to which young people enter the educational system prepared to participate in and master the curriculum (Pianta and Cox, 1999). This factor is particularly relevant to the issue of the early family circumstances of Mexican immigrants for two reasons. First, the circumstances of children's family lives in the years preceding the entry into school are significant predictors of how well children do when they enter school, much more so than their actual cognitive and intellectual development (Entwisle and Alexander, 1999). Second, Mexican immigrant children, like many other race/ethnic minority populations, typically have lower levels of school readiness than native-born White peers (Suarez-Orozco and Suarez-Orozco, 2001).

This paper uses data from the Early Childhood Longitudinal Study (ECLS), Kindergarten Class of 1998-1999 to look at the relationship between race/ethnicity, birth status, family structure, and school readiness, as measured by early math achievement in kindergarten. Because school readiness is a foundation for early learning and early learning is a foundation for elementary and secondary school achievement trajectories, the consequences of these initial differences in school readiness increase over time and are a major reason for related academic differences that are so apparent in the literature on adolescence (Alexander and Entwisle, 1988). Additionally, these gaps in school readiness and early learning generally compound over time contributing to differential rates of socioeconomic attainment and social mobility (Alexander and Entwisle, 1988). Thus, the early family circumstances of young Mexican immigrant children

have potentially far-reaching consequences for these children, the larger Mexican-American population, and the educational system.

Background

The higher rates of non-marital fertility put minority women and children at greater risk of disadvantageous outcomes. Given that the family context is a primary determinant of school readiness, race/ethnic differences in non-marital fertility could underlie the well-documented race/ethnic differences in early learning trajectories (Pianta and Cox, 1999; Alexander and Entwisle, 1988). Specifically, children born out of wedlock and/or raised in family forms that do not contain two biological parents typically do not do as well in school as their peers, mostly because of the socioeconomic circumstances that coincide with these statuses but also because of family processes unique to these types of families (McLanahan and Sandefur, 1994). Consequently, we might expect that such family circumstances interfere with the school readiness of these children. Given the differences in non-marital fertility between Mexican immigrant children and their White peers, therefore, we might expect that these such family circumstances are a contributing factor to their lower levels of school readiness.

However, being born to unmarried parents may not have the same effect on the well-being of all children. There is much variation in the relationship status among unmarried mothers and unmarried childbearing is no longer synonymous with single parenthood (Sigle-Rushton and McLanahan, 2002; Cherlin, 2001). A large portion of the increase in non-marital fertility is due to increased fertility within cohabiting unions (Bumpass and Lu, 2000). Overall, roughly 12% of all births occur to cohabitors and by the late 1990's roughly 40% of all non-marital births occurred to cohabitors, though this percent was closer to 50% for Hispanics and Whites (Smock,

2000; Bumpass and Lu, 2000). This has raised questions regarding the role that cohabiting relationships have for the children born into them.

Levels of cohabitation and the meaning of cohabitation vary across many factors, including race/ethnicity (Bumpass and Lu, 2000; Smock, 2000; Manning and Landale, 1996). Research has found that while Mexican American women are somewhat less likely to cohabit than Whites, they have higher fertility within cohabiting unions (Wildsmith, 2004). This ultimately results in a similar proportion of Mexican American and White children being born in cohabiting unions, but suggests that Mexican American cohabitors with children may be very different than White cohabitors with children. In contrast to much of the developed world, informal/consensual unions in Mexico are best described as surrogate marriages with full social recognition (Castro Martin, 2002). Far from representing a new cultural arrangement, as they have been characterized in the U.S., consensual unions in Mexico have been around for centuries and represent a traditional analog to formal marriages (Solis, 2004; Del Castillo, 1984). Wildsmith (2004) finds some limited evidence of this among Mexican born mothers in the United States, as those in cohabiting unions are actually less likely to marry within a year of their child's birth than those not in cohabiting unions. Given that cohabiting unions are structurally similar to married unions, in that two parents are present, a greater prevalence of cohabiting unions among the parents of Mexican immigrant children may protect them from some of the disadvantages associated with non-marital fertility.

This discussion highlights the fact that there is race/ethnic variation in the relationship status of unmarried parents. And, this variation is important for children's development (Lundberg, 2001). It is not necessarily marital status at birth per se that affects child outcomes, rather it is that marital status at birth is likely associated with parental inputs which do affect

child outcomes. Heterogeneity in family structure means heterogeneity in parental inputs, such as resources or time invested in children. In order to more fully understand the effects of non-marital fertility on children, and how it varies by race/ethnicity, we must first determine the relationship between race/ethnicity, birth status, family structure, and child outcomes. While higher levels of non-marital fertility may increase the likelihood that Mexican immigrant children have lower levels of school readiness, qualitative differences in the actual reality of non-marital fertility and family structure in this growing population (e.g., higher rates of cohabitation, non-marital fertility preceding marriage) also point to reasons why the school readiness of this population is higher than would be expected based on their socioeconomic status.

Hypotheses

Based on the brief discussion above we have developed several hypotheses. First, we expect that non-marital fertility will account for some of the race/ethnic difference in school readiness. Second, we expect that the relationship between non-marital fertility and school readiness will vary by race/ethnicity. Third, we expect that Mexican Immigrant children will be more likely to live in a cohabiting household with two biological parents and that this will offer some protection against the disadvantage associated with non-marital fertility. While we do not specifically measure parental inputs such as time spent with children or parenting style, we are able to control for socioeconomic status, which in part determines parental resources.

Data and Methods

Data and Sample

This study uses an ongoing nationally representative data set collected by the National Center for Health Statistics (NCES), the ECLS-Kindergarten Cohort, which follows 22,782

students through elementary school. The first wave of the study collected information on all students (who were enrolled in kindergarten) in the fall of 1998. Subsequent waves of data collection occurred in the spring of kindergarten and the fall and spring of first grade. Data collection consisted of interviews with parents, teachers, and school administrators and the administration of multiple evaluative and diagnostic tests to children.

The analytic sample for this study consists of all children who participated in the data collection in kindergarten and the spring of first grade, who had both parent and teacher interviews, who completed the math achievement test in the fall of kindergarten, and who had data on their birth status.[1] These restrictions resulted in a sample size of 13,732. Though these selection filters result in a sample that differs somewhat from the original sample, they do not bias the sample too strongly (Crosnoe, Forthcoming).

Measures

School readiness is measured using math IRT scores measured in the fall of Kindergarten. Children took the first stage of the math test and then, based on their performance, the low-, medium-, or high-difficultly math test. Using Item Response Theory (IRT) scores allowed for the development of a single proficiency score, which ranged from 8 to 61. The math IRT scores in the fall of kindergarten are quite low, reflecting the fact that little formal math training has occurred. However, they serve as a good indicator of school readiness. Even small differences in kindergarten have the potential to grow into large differences later on in the

[1] It is necessary to restrict the sample to children who have data from the spring of first grade, despite the fact that our dependent variable is measured in Kindergarten, because the information necessary to identify Mexican Immigrant children is only available in the first grade.

academic career of these children. All children were screened for English language proficiency before taking achievement tests. Spanish speakers who fell below a certain threshold took a Spanish-language version of the test (less than 1/4th of the Latino/a children). A dummy variable indicating whether the student was tested in Spanish is included in the analysis. Non-Spanish speakers who fell below the threshold did not take the test.

The primary focus of this study is the comparison of children from Mexican immigrant families to children of other race/ethnicities. As a result, six dummy variables are constructed which identified children as non-Hispanic White (reference), non-Hispanic Black, Mexican Immigrant, other Hispanic, Asian-American, and of Other race (e.g., Native American). Nation of origin information (county of birth) was collected for the children and at least one of their parents. This information was used to identify Mexican immigrant children (those born in Mexico or with parents born in Mexico). No nation of origin information was collected on U.S. born children with U.S. born parents; as a result, the Hispanic category contains all U.S. born children with U.S. born parents of Mexican origin as well as children from other Hispanic countries. A seventh dummy variable identifies all non-Mexican children who come from immigrant families.

A dummy variable indicates the birth status of each child. Information on whether the biological parents were ever married and if so, when the date of marriage occurred is used to identify children born to unmarried parents. Children whose biological parents were never married as well as those whose parents married after their date of birth were classified as non-marital births. We also identify the family structure of each child at the beginning of Kindergarten. We use information gathered on the living arrangements and marital status of the resident parent(s) to construct a series of dummy variables that identify children living with

married biological parents (reference), cohabiting biological parents, married step parents, cohabiting step parents, and a single parent. These measures differ from the conventional family structure measures included in the ECLS-K, but allow us to identify those children living with cohabiting biological parents. A dummy variable is included which indicates if a child is missing information on family structure.

One of the reasons that children born to unmarried parents and who live in families other than those headed by married biological parents do relatively worse across a number of outcomes is a relative lack of resources. In order to determine whether the relationship between birth status, family structure, and school readiness is attributed to other resources we include three measures of family socioeconomic status. The first is a continuous measure of socioeconomic status, ranging from -5 (low) to 3 (high), created by NCES. This scale is based on the mean of five standardized items: father/male guardian education, father/male guardian occupational status, mother/female guardian education, mother/female guardian, and family income. The second is a dummy variable measuring family poverty status which identifies children in families whose income fell below the poverty line in the fall of kindergarten. The last is a set of dummy variables which measure the level of completed education for the resident parent with the highest level of education. These measures identify parents who have less than a high school degree, a high school degree (reference), some college, and those with at least a college degree.

Two other measures are included that are particularly important to control for when looking at Mexican immigrant families. Children who had center based care or attended a school-based preschool program do better on math achievement at the beginning of kindergarten than children in other kinds of care (Magnusen et al., 2004). Mexican Immigrants are less likely to attend center based care and more likely to have relative or non-relative care. A set of dummy

variables are included which indicate whether the child had relative based care, non-relative based care, center based care, other care, attended a head start program, or had no type of pre kindergarten child care (reference). Secondly, a dummy variable is included which indicates whether the child speaks primarily English at home. Lastly, a series of control variables are included in all of the regression analyses: a dummy variable indicating the sex of the child, a continuous measure of the age of the child in months, and a dummy variable indicating whether the child lived in the South/Midwest or not.

Analytic Plan

We first use descriptive analyses to look at race/ethnic differences in school readiness, birth status, and family structure as measured at the beginning of kindergarten. To more explicitly explore the hypotheses discussed above we use ordinary least squares (OLS) regression analyses (run in SAS) to model differences in school readiness. We first establish race/ethnic differences in math IRT scores in the fall of kindergarten. We next add the main and interactive effects of birth status. We next determine whether differences in family structure account for race/ethnic differences in the relationship between birth status and school readiness. Lastly, we determine whether these relationships hold controlling for socioeconomic status, child care, and language spoken at home.

Results

Descriptive Analyses

Table 1 displays race/ethnic differences in math achievement and birth status as well as birth status differences in math achievement. In terms of math achievement, we see that Mexican immigrant children are the most disadvantaged followed by Blacks and other Hispanics. Not

surprisingly, Whites and Asian Americans are the most advantaged. Turning to birth status, we see that almost 30% of Mexican immigrant children are born to unmarried parents compared to 16% of White children. The percentage among Mexican immigrants is somewhat lower than that for the Mexican origin populations as a whole (Ventura et al. 1999). This is because in our sample, third generation Mexican American children can not be identified and non-marital fertility in this population is particularly high. Consistent with previous research we see that roughly 67% of Black children and almost 40% of Hispanic children are born to unmarried parents. The last column in this table confirms that children born to married parents have significantly higher math achievement scores than children born to unmarried parents. Therefore, it is likely that birth status mediates the relationship between race/ethnicity and achievement. However, this tells us nothing about the variation by race in the meaning of a non-marital birth.

Table 2 displays the percentage distribution of family structure (measured at the beginning of kindergarten) for all women and separately by birth status, by race/ethnicity. Looking first at all women, we see that with the exception of Black children and children of an Other race/ethnic group, the majority of children live with two married biological parents. However, it is interesting to note that roughly 10% of Mexican immigrant children live with two cohabiting parents and are the most likely of all groups to be in this family structure. This suggests that a substantial number of cohabiting unions among Mexican immigrants are enduring for at least 5 years (or for the time between the child's birth and when they enter kindergarten).

The next two panels display the same information separately by birth status. Though this paper is most concerned with what happens following a non-marital birth, how children born to married parents fare is of importance as well. Interestingly, among children born to married parents, we see that Mexican immigrant children are among the most likely (after Asian

American children) to still be with two married biological parents by the beginning of kindergarten. This reflects the somewhat lower rates of union dissolution in this population. In terms of family structure, Mexican immigrant children born to married parents are among the most advantaged and to the extent family structure is associated with achievement likely offers them some limited protection. The last panel focuses specifically on births to unmarried parents. A relatively large portion of these children's parents eventually get married, though there are race/ethnic differences in this. For example, only 11% of Black children's parents marry, though almost 25% of Mexican immigrant children's and roughly 28% of White's children's parents marry. There are also large race/ethnic differences in family structure among those who do not eventually marry. In particular, we see that 34% of Mexican immigrant children live with cohabiting biological parents. At the same time, Mexican immigrant children are the least likely to be in a single parent household and among the least likely to live with step parents, either married or cohabiting.

Regression Analyses

Table 3 displays estimates from OLS regression analysis modeling math achievement. In Model 1 we see that Black and Mexican immigrant children have the lowest levels of math achievement, controlling for region, age, sex, immigrant status, and being tested in Spanish. Asian American children have the highest. Model 2 adds the effect of birth status. Children born to unmarried parents score almost 3 points lower on the math achievement test than do children born to married parents. With the exception of Asian Americans, the race/ethnic differences in achievement, relative to White children, narrow with the inclusion of birth status. This reflects the fact that minority children are more likely to be born out-of-wedlock. However, birth status only reduces Mexican immigrant/White differences by a small amount and Mexican immigrant

children still fare much worse than White children. Model 3 allows the effect of birth status on achievement to vary by race/ethnicity and we see that there are large and significant interactions. With the exception of Asian Americans, the negative effect of a non-marital birth on math achievement is much less strong for minority children than it is for White children. In fact, the difference between Mexican immigrant children by birth status is only 1 point (-3.49+2.49) compared to 3½ points for White children. This implies that a non-marital birth is very different for Mexican immigrant children (and to a lesser extent, Black and Hispanic children) than for White children. It also demonstrates that the largest achievement disadvantage for minority children occurs to those born to married parents. Because of the difference in births status by race and because the effect of family structure is also likely to vary by birth status, the next two tables display results from analyses modeling math achievement separately by birth status.

Table 4 focuses specifically on children born to unmarried parents. Model 1 displays the baseline race/ethnic association with math achievement and confirms what we know from the above analysis, that Mexican immigrant children (and other minority children, except Asian Americans) fare worse than White children, though this difference is less than for children born to married parents. Model 2 adds measures of family structure. Not surprisingly, children in all family structures fare worse than children whose parents ultimately marry, and it is those in cohabiting step families who fare the worst. In fact, this table demonstrates the negative effects of being in any type of cohabiting family. Children with cohabiting biological parents fare worse than those with married biological parents and those with cohabiting step parents fare worse than those with married step parents. Interestingly, variation in family structure does little to mediate the race/ethnic difference in math achievement for children born to unmarried parents, though it does appear to offer at least a small amount of protection for Mexican immigrant children. Model

3 adds controls for socioeconomic status and we see that race/ethic differences are reduced substantially as are the effects of family structure. In fact, it is now only being in any type of step family (cohabiting or married) that has a negative effect on achievement, and it is White children who are the most likely to be in these family types. Taken together, these findings lend some speculative support to arguments that is the processes associated with family transitions rather than with static family structure that are important, net of socioeconomic status. Model 5 adds measures of child care and language spoken at home, of which only child care arrangements are significantly associated with math achievement. The fact that minority children are less likely to be in center based care accounts for some of their disadvantage relative to White children. However, minority children born to unmarried parents still remain disadvantaged and the overall relationship between family structure and math achievement remains virtually unchanged.

Though the primary focus of this paper is on what happens to children born to unmarried parents, as stated before, what happens to children born to married parents is clearly important. Table 5 displays estimates of math achievement for children born to unmarried parents. We just want to briefly mention a couple of interesting points. First, Mexican immigrant children born to married parents fare relatively worse than White children compared to those born to unmarried parents, however differences in math achievement are reduced substantially more among those born to married parents once controls are added (largely with the inclusion of language spoken at home). Secondly, the effects of family structure are stronger among children born to married parents and remain stronger even with controls for socioeconomic status. As all these children began in intact families, all these family structures imply some change in family structure after birth. It is interesting to note that those in cohabiting step families fare particularly poorly.

Discussion and Next Steps

This paper takes a preliminary look at the relationship between birth status, family structure, and school readiness, paying particular attention to Mexican immigrant children. The unique role of cohabitation in this population was expected to buffer against the negative effects generally associated with being born to unmarried parents. In terms of the primary hypotheses presented at the beginning of this paper, we find that non-marital fertility *is* associated with lower levels of school readiness and that higher levels of non-marital fertility among minority women, including Mexican immigrant women, account for some of their disadvantage. However, for whatever reason, the negative effects of non-marital fertility were substantially less for Mexican immigrant women (as well as Black and Hispanic women) compared to White women. We next explored whether this was due to differences in family structure.

The fact that Mexican immigrant children born to unmarried parents were more likely to live in cohabiting biological households offered a small amount of protection relative to White children. However, this was offset by the fact that White children were more likely to live in step families (married and cohabiting) which have particularly negative effects on achievement. In fact, once socioeconomic characteristics are controlled, it is only these step families which have negative effects for children. Children in living with cohabiting biological parents or living in a single parent household are no different than those whose parents ultimately marry. This is not the case among married births, where children in single family households fare less well than those in married families.

These differential effects of family structure on school readiness by birth status are in themselves interesting. Determining what factors help women make more successful life course choices, within the context of disadvantage, is critical to the well-being of women and children.

Moore (2003) has developed a research agenda that is focused specifically on how parents and neighborhood adults help shape the behavior of youth in disadvantaged neighborhoods. One of the key areas of her research points to differences in the importance of alternative two parent families (such as cohabiting and step family relationships). Essentially, the argument is that disadvantaged children may actually benefit from these alternate family structures, while more advantaged children may not. Certainly we know that children born to unmarried parents are generally more disadvantaged and live in more disadvantaged neighborhoods than children born to married parents. While we did not explore this possibility, our analysis does find that the effects of family structure vary by birth status, though the real difference seems to be in single parenthood.

In order to more fully explore the complex relationship between early family experiences and the future wellbeing of children, and how and why this may vary by race/ethnicity, we plan to take further steps in this research. The first is to follow up on school achievement by measuring math IRT scores in the 1st and 3rd grades. This will give us some insight into the early learning gains/losses of children controlling for their school readiness. Second, is to explore more directly the role of what Lundberg (2001) calls parental inputs in the relationship between birth status, family structure, and school readiness/school achievement. While economic resources are an important component of these inputs, so too are parenting skills and time spent with children. This data is available in the ECLS-K.

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Table 1: Birth Status and Math Achievement of Children Interviewed in Fall of Kindergarten, by Race/Ethnicity

	White	Black	Mexican Immigrant	Hispanic	Asian	Other	Mean Math Achievement**
Birth Status*							
Married	83.6	32.5	70.6	60.5	89.0	50.7	20.9
Non-Marital	16.5	67.5	29.4	39.5	11.0	49.3	16.8
Math Achievement*							
Mean	21.4	16.9	14.1	17.1	22.9	18.0	

Note: * All race/ethnic groups significantly different from Whites, **significantly different by Birth Status

Table 2: Percent Distribution of Family Type, by Race/Ethnicity and by Birth Status

	White	Black	Mexican Immigrant	Hispanic	Asian	Other
All Births						
married bio parents	75.3	29.9	70.3	56.7	84.5	46.2
cohabiting bio parents	2.0	6.3	10.1	7.0	2.6	11.3
married step parents	5.8	6.4	2.4	6.4	1.2	7.9
cohabiting step parents	3.4	4.4	3.6	4.0	1.7	6.1
single	12.6	50.6	12.2	24.5	9.3	26.3
missing	0.8	2.5	1.4	1.6	0.7	2.1
Married Births						
married bio parents	84.6	68.6	89.5	78.9	92.3	76.0
cohabiting bio parents	n/a	n/a	n/a	n/a	n/a	n/a
married step parents	3.9	1.7	0.5	3.1	0.8	5.5
cohabiting step parents	2.0	1.1	2.3	2.1	1.8	4.4
single	9.1	27.8	6.6	15.4	5.0	12.9
missing	0.4	0.8	1.1	0.6	0.2	1.2
Unmarried Births						
married bio parents	28.3	11.3	24.4	22.6	21.1	15.5
cohabiting bio parents	12.0	9.3	34.3	17.6	23.8	22.9
married step parents	15.9	8.7	6.9	11.4	4.8	10.5
cohabiting step parents	10.5	5.9	6.9	6.9	1.3	7.9
single	30.5	61.5	25.4	38.3	43.7	40.1
missing	2.7	3.3	2.1	3.2	5.3	3.1

Table 3. Ordinary Least Squared Regression Estimates of Kindergarten Math Achievement

	Model 1		Model 2		Model 3	
	estimate	p	estimate	p	estimate	p
Intercept	-5.41	***	-5.09	***	-4.95	***
Race/ethnicity (White)						
Black	-4.28	***	-2.73	***	-3.34	***
Mexican Immigrant	-4.08	***	-3.90	***	-4.52	***
Hispanic	-3.52	***	-2.85	***	-3.17	***
Asian	1.29	***	1.38	***	1.69	***
Other	-3.18	***	-2.27	***	-1.87	***
Immigrant	0.67	**	0.30		0.27	
Tested in Spanish	-4.22	***	-3.94	***	-4.02	***
Region (West/Northeast)						
South/Midwest	-0.65	***	-0.70	***	-0.69	***
Age in Months	0.40	***	0.40	***	0.40	***
Sex (male)						
Female	0.16		0.16		0.17	
Non-Marital Birth			-2.96	***	-3.41	***
Non-Marital*Black					1.24	**
Non-Marital*Mexican					2.49	***
Non-Marital*Hispanic					1.15	**
Non-Marital*Asian					-2.78	**
Non-Marital*Other					-0.60	
R Square	0.17		0.19		0.20	

^p<.10, *p<.05, **p<.01, ***p<.001

Table 4: Ordinary Least Squared Regression Estimates of Kindergarten Math Achievement, Non-Marital Births

	Model 1		Model 2		Model 3		Model 4	
	estimate	p	estimate	p	estimate	p	estimate	p
Intercept	-0.24		0.47		-0.95		-1.78	
Race/ethnicity (White)								
Black	-2.13	***	-2.00	***	-1.41	***	-1.32	***
Mexican Immigrant	-2.57	***	-2.66	***	-1.61	**	-1.27	*
Hispanic	-2.17	***	-2.16	***	-1.47	***	-1.27	***
Asian	-1.08		-1.09		-1.04		-0.68	
Other	-2.54	***	-2.47	***	-2.10	***	-1.81	***
Immigrant	0.00		-0.06		-0.34		-0.25	
Tested in Spanish	-3.59	***	-3.51	***	-2.30	***	-2.02	***
Region (West/Northeast)								
South/Midwest	-0.86	***	-0.88	***	-0.68	***	-0.67	***
Age in Months	0.28	***	0.28	***	0.29	***	0.30	***
Sex (male)								
Female	0.15		0.15		0.19		0.15	
Family Structure in Kindergarten (Married Bio Parents)								
Cohabiting Biological			-0.66	*	-0.04		0.05	
Married Step			-0.77	*	-0.61	^	-0.54	^
Cohabiting Step			-1.69	***	-1.03	**	-0.97	**
Single			-0.81	**	-0.05		-0.07	
Missing			-1.72	**	-0.65		-0.73	
Family SES (continuous)					1.30	***	1.14	***
Family below poverty					-0.86	***	-0.66	**
Parental Education (High School)								
Less than High School					-0.94	***	-0.89	***
Some College					0.97	***	0.84	***
College+					2.04	***	1.78	***
Child Care (No Care)								
Relative Care							0.29	
Non Relative Care							0.62	^
Center Care							1.65	***
Head Start							-0.66	*
Other Care							0.67	^
Does not Speak English at Home							-0.57	
R Square	0.12		0.13		0.20		0.22	

^p<.10, *p<.05, **p<.01, ***p<.001

Table 5: Ordinary Least Squared Regression Estimates of Kindergarten Math Achievement, Marital Births

	Model 1		Model 2		Model 3		Model 4	
	estimate	p	estimate	p	estimate	p	estimate	p
Intercept	-8.25	***	-8.04	***	-10.85	***	-11.70	***
Race/ethnicity (White)								
Black	-3.29	***	-2.96	***	-2.00	***	-1.94	***
Mexican Immigrant	-4.30	***	-4.38	***	-1.66	***	-0.81	^
Hispanic	-3.11	***	-2.97	***	-1.68	***	-1.35	***
Asian	1.71	***	1.57	***	1.66	***	2.21	***
Other	-1.85	***	-1.70	***	-1.17	***	-1.01	**
Immigrant	0.35		0.27		-0.20		0.08	
Tested in Spanish	-4.20	***	-4.24	***	-2.18	***	-1.76	***
Region (West/Northeast)								
South/Midwest	-0.64	***	-0.59	***	-0.27	^	-0.31	*
Age in Months	0.44	***	0.45	***	0.46	***	0.45	***
Sex (male)								
Female	0.19		0.19		0.15		0.15	
Family Structure in Kindergarten (Married Bio Parents)								
Married Step			-2.07	***	-0.67	^	-0.63	^
Cohabiting Step			-3.50	***	-1.78	***	-1.85	***
Single			-2.11	***	-0.72	**	-0.79	***
Missing			-2.26	**	-0.47		-0.45	
Family SES (continuous)					2.50	***	2.29	***
Family below poverty					-0.66	**	-0.44	^
Parental Education (High School)								
Less than High School					-0.48		-0.31	
Some College					0.57	**	0.47	*
College+					1.76	***	1.61	***
Child Care (No Care)								
Relative Care							0.28	
Non Relative Care							0.82	***
Center Care							1.70	***
Head Start							-0.16	
Other Care							0.86	*
Does not Speak English at Home							-1.10	***
R Square	0.15		0.16		0.26		0.27	

^p<.10, *p<.05, **p<.01, ***p<.001