The Fragile Families and Child Wellbeing Study changed its name to The Future of Families and Child Wellbeing Study (FFCWS). Due to the issue date of this document, FFCWS will be referenced by its former name. Any further reference to FFCWS should kindly observe this name change.

Keeping Promises: Single Mothers, Race, and Elementary Educational Engagement

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The present study explores how household arrangement influences parental engagement in children's elementary education among mothers in U.S. urban settings. Using two waves of panel data from the Fragile Families and Child Wellbeing Study (N = 2,982), the present paper compares the difference in educational engagement between coupled (married or cohabiting) and single mothers. Logistic regression models are utilized to examine the impacts of household arrangement on the possibility of enrolling children in tutoring, initiating a conversation with teachers, and frequent book reading with children. After controlling for household structure, financial factors, and mother and child characteristics, results suggest that, compared with mothers who live with partners, single mothers who consistently live alone at waves 4 and 5 are just as likely to hire a tutor but less likely to initiate conversations with teachers. The results also suggest no differences in after-school tutoring enrollment and frequent book reading across household arrangements. This paper also discusses some racial disparities found for parental engagement outcomes. Black mothers are more likely to hire tutors and, like single mothers in general, are less likely to initiate discussions with teachers compared to their White counterparts. Hispanic mothers read with their children less frequently than non-Hispanic mothers, which could possibly be explained by the lesser availability of children's literature written in the Spanish language compared with the English language. The findings of this paper have important implications for understanding both the engagement strategies employed and obstacles faced by single mothers in urban areas, and suggest new hypotheses for future study of racial gaps in parental engagement in children's education.

Key Words: cultural capital, educational engagement, Fragile Families and Child Wellbeing Study, living arrangement, race, single motherhood, tutoring

BACKGROUND

Numerous studies have provided empirical evidence suggesting that family background is a structural force for children's educational achievement (Quinn, 2015; Raudenbush & Eschmann, 2015; Reardon, 2011). Among family background characteristics, household and relational factors such as marital status, residential arrangements, and partnership status are strongly associated with the social and cognitive wellbeing of mothers and children (McLanahan, 2009; McLanahan et al., 2010; Teitler & Reichman, 2008). Recent research featuring Fragile Families data examines the relationship between marital status and child outcomes, suggesting that a mother's change in marital status or partners has a statistically significant negative impact on their children's wellbeing such as school readiness (Cooper et al., 2011; McLanahan, Tach, & Schneider, 2014).

Studies have also found that there are no substantial differences in various family outcomes among certain living arrangements, such as cohabitation and living with children's grandparents.[1] After controlling for socioeconomic factors, studies report no significant variation in children's or the mothers' educational success or mental wellbeing between unmarried and married couples (Brown et. al., 2015; McLanahan et al., 2010; Shapiro & Keyes, 2007). Some studies do suggest that single-parent families have substantial positive impacts on children's prospects for success (Edin & Kefalas, 2005; Musick & Meier, 2010). However, especially among single-parent mothers who experience family disruptions – divorce, separation, and widowing – the single-parent

[1] Hence, the present paper does not compare married and unmarried couples.

family structure has also been found to be associated with a negative effect on children's educational achievement, while other family transitions – marriage and living with romantic partners - have been found to yield a positive effect (Amato & Keith, 1991; Wagmiller et. al., 2010).

The present study focuses on children between 5 and 9 years old (4th and 5th waves) - an age range where many children are enrolled in elementary school. We did not include the 6th wave when children reached the age of 15 because elementary children are arguably more susceptible to family structural factors and changes in household arrangement than middle school children who become more independent in their social development. The effect of household arrangements on education for elementary schoolers and middle schoolers are likely to be nonlinear and can be examined independently, because the biological, cognitive, and social development for these two age and education groups are qualitatively different.

According to social science literature, the educational disadvantages of children from single-parent families can in large part be attributed to low financial and childcare resources available. Empirical studies have provided evidence suggesting that a two-parent family structure is beneficial for child development, household resources, and overall mental health (McLanahan, 2009; McLanahan et. al., 2010). Some research has shown that when single mothers become married, this family change can promote children's educational success due to a boost in financial security from the respective partner (Amato et al., 2007). However, prior studies examining children's educational outcomes neglect some direct mechanisms that link parental relationship status and children's academic achievement – in other words, parental engagement in children's educational affairs.

Therefore, it is important to investigate these specific parental processes that may influence children's academic achievement.

Early childhood educational development plays an increasingly important role in preparing children for future academic achievement, improving the likelihood of social mobility, and closing racial achievement gaps, especially among socioeconomically disadvantaged children (Apple, 2015; Condron, 2009; Downey et al., 2004; Heckman, 2006). Living arrangements outside of two-parent households have been reported to be associated with young, low socioeconomic status, and minority adults (Pew Research Center 2014). Single motherhood is one of the weakest risk factors of being poor compared to risk factors such as low education, unemployment, and young headship (Brady, Finnigan, & Hubgen, 2017). Given that children from single-parent households have been reported to face some educational disadvantages due to financial constraints, this study investigates the question of whether single-parent families are more or less likely to be involved and invest in their children's education compared with two-parent households, after controlling for relevant factors.[2] The Fragile Families and Child Wellbeing Study is a suitable dataset for this study because it focuses on unmarried couples who are at risk of separating and whose children are vulnerable to living in poverty.

Hypotheses

The study explores both the time-deficit framework and cultural factors to hypothesize maternal engagement differences between the two living arrangements of single- and two-parent households. The time deficit framework hypothesizes that single mothers are less likely to engage or invest in children's educational affairs because they

[2] The variables reflecting relevant factors are based on Cooper and colleagues (2011) and McLanahan and colleagues (2010).

may have less time and financial resources available to allocate towards this end compared with mothers who share some of the time and financial resources with their partners. This framework is derived from time-spending literatures which suggest that single parent households that are also characterized as working poor have inadequate discretionary time to engage in household production such as child care and education (Kalenkoski et al., 2011; Vickery, 1997; Zacharias, 2011). Time-deficit literatures argue that disadvantaged families experience scarce finances and time for extensive child care activities due to prolonged working hours and barriers from low standards of living (Kalenkoski et. al., 2011; Mullainathan & Shafir, 2013). This framework may also apply to single mothers in urban settings who are in precarious financial and time-constrained situations.

Alternatively, *cultural factors* illuminate the possibility that single mothers have perspectives and make decisions concerning their children's education that are different from those of mothers who have a partner. According to Usdansky & McLanahan (2003), being a single and college-educated mother is associated with holding more *independent* views about marriage, education, and work. In *Promises I Can Keep* (2005), Edin and Kefalas find that poor single mothers who desire marriage show commitment to their children's education and prioritize children's wellbeing above their marriage. Resting on these empirical findings, we hypothesize that mothers who consistently live alone may experience motivation from self-reliant and hardworking ethics to be active in parental engagement in order for their children to have educational opportunities comparable to children of non-single mothers who may benefit from more time and financial resources.

Hypotheses

In order to test the efficacy of the time-deficit framework and empirical explanations of cultural factors, we test the following hypotheses to explore the potential impact of living arrangement on parental engagement:

1. The likelihood of single mothers letting their children participate in after-school tutoring and math lab is different from that of mothers with partners.
2. The likelihood of single mothers initiating discussion with the teacher to talk about children' academic and behavioral problems is different from that of mothers who have partners.
3. The likelihood of single mothers reading books to their children more than once a week is different from that of mothers who have partners.

For our study, we control for mothers' socioeconomic status, educational attainment, demographics, as well as children's prior educational achievement and basic demographics. We control for child's gender because a recent study on residential transition and children's academic performance suggests a significant educational disparity between children of different genders (Cooper et al., 2011). As mentioned above, some research has suggested that a residential transition can have significant impact on children's educational outcomes, whether that be to support or impede children's school readiness. Controlling for other material conditions, we test whether single mothers invest additional effort to improve their children's academic achievement, potentially motivated by a drive to overcome material disadvantages associated with single parenthood.

DATA

All data are derived from the Fragile Families and Child Wellbeing Study (FFCWS) with an original cohort of 4,898 families. This study randomly selected 16 large U.S. cities from 20 total and surveyed both non-marital births and marital births, with an intentional oversampling of "fragile families" or unmarried parents and their children. In the first wave, mothers were surveyed from 1998 to 2000 shortly after giving birth. The follow-up surveys were conducted in 1, 3, 5 and 9 years after this first birth. The latest of these waves ends in 2009, when most children turned age 9 to 10, and about 3,515 couples remain in the sample after 5 waves of surveys. Since FFCWS concentrates on "at-risk" parents in urban settings who cohabited or were separated when giving birth to their first child, FFCWS purposely under-samples traditional households (24% of the families in the original sample) characterized by mothers with post-conception in marital unions or those who were married to their children's fathers when entering the survey.[3]

Analytic Sample

Our analysis focuses on the in-home surveys of mothers and the focal child in the first five waves of FFCWS. In year 9, FFCWS collects the child's academic, behavioral, and school information in the in-home surveys, which also include information on parenting and parents' educational engagement. Our sampling frame applies to mothers who participated in the in-home study at wave 5, and thus it excludes 943 mothers who did not participate in the in-home study and 667 mothers who exited the FFCWS before wave 5. In addition, among the 3,288 mothers who participated in the in-home study at wave 5, we excluded 231 mothers who skipped important questions that were included in our measurements of interest. A total of 2,982 mothers are in the final analytic sample.

[3] Even though the under-sampling substantially limits external validity for generalizing findings, this issue may be resolved after applying constructed national sampling weight (Reichman et al., 2001).

MEASUREMENT

Dependent Variables

The maternal educational engagement variables measure how active the mother is in engaging with and investing in the child's academic activities that were included in the survey. Our dependent variables measure possibilities of the mother engaging in activities that facilitate children's school readiness and academic achievement at wave 5, such as (1) children's participation in after-school academic activities, (2) initiating discussion with teachers about children's academic and behavioral performance, and (3) reading books to children more than once a week. These three binary variables measure three domains of maternal educational engagement: third-party educational investment, parent-teacher interaction, and parent-child interaction.

The first dependent variable – *tutoring* - measures the possibility that children have participated in individual tutoring or math lab (p5i2e). Although the survey asked both parents about who made the decisions for their child to participate in these activities, the study focuses on mothers based on reports that mothers on average exhibit greater educational involvement and child attachment than fathers (Coyl-Shepherd & Newland, 2013). The second variable – *initiation* - measures the possibility that the mother takes the initiative to discuss behavioral and academic problems with the child's teachers (p5l18).[4] *Initiation* is included to test whether mothers are proactive in communicating with their

[4] In the variable *initiation*, "1" denotes mothers starting discussions with teachers, "0" denotes other family members or teachers starting discussions on the child's problems at school.

children's instructors.[5] The third dependent variable - *reading* - measures whether mothers read books or talked about books with their children more than once per week in the past month (p5ile). Mothers who read books to their children several times or more per week are assigned a value of "1", and mothers who read books to their children less than twice per week are assigned a value of "0."

Independent Variables

Living arrangement can encompass the mother's residential status with the focal child's biological father, the number of the focal child's siblings, and the presence of the child's grandparents in the household. Therefore, our independent variables include the following to account for mothers' family structures: (1) the mother *living alone* versus living with a partner (husband or unmarried biological father), (2) having any partnership or marital transition, (3) the focal child's *siblings*, and (4) living with the child's *grandparent*(s). Given the study's focus on parental engagement, the mother's residential status with the biological father is of primary interest in the present paper. With this variable, we look at whether mothers *consistently lived alone* (without any romantic partner) from wave 4 to wave 5 (year 5 to year 9).[6] Since this variable captures at least four years of *living alone,* we can isolate the effect of single motherhood based on the assumption that partner separation took place before the survey of mother's educational engagement, and we can expect measurable observance of any effect that *living alone* may

[5] FFCWS includes additional variables that measure whether the mother simply discusses academic problems or behavioral problems with teachers. However, these two variables do not measure who proactively initiates the discussion and therefore we do not include these variables in our analysis.

[6] Mothers who only report living alone at wave 5 are not statistically different from mothers who live with partners in any of the models.

have on engagement given the length of separation. In our analysis sample, approximately 46% or exactly 1,428 mothers lived without a romantic partner from year 5 to year 9.

The relationship transition variable measures whether there is *any change* in marital and residential status between the mother and the child's biological father. In other words, the transition variable assigns a "1" if the mother got married, divorced, became widowed, changed romantic partners, started cohabiting, or separated from the child's biological fathers since the baseline year. In our sample, 46% of mothers experience at least one type of partnership or relationship transition in the past 9 years. The *siblings* variable measures whether the focal child has a maternal sibling; in other words, if mothers have more than one biological child since the baseline year. About 62% of mothers have more than one biological child after the baseline year, and 32% of mothers have exactly 2 children in the past 9 years. The *grandparents* variable measures whether at least one of the child's grandparents (grandmother, grandfather, or both) live with mothers since the baseline year. Approximately 40% of mothers live with at least one of the child's grandparents in the past 9 years, and most of them are living with grandmothers (36%).

Control Variables

Our first set of control variables accounts for mother's characteristics that are hypothesized to be correlated with mother's educational engagement, such as mother's *race*, *educational attainment*, *income*, employment *status*, and experience of *material hardship.*[7] The mother's race and ethnicity are grouped into four categories – White non-Hispanic, Black non-Hispanic, Hispanic, and other races. The other race category includes Asian, American Islander, and other races, which comprises 4% of the analytic sample.

[7] Mother's age at wave 5 is automatically omitted in all logistic models due to no association with the dependent variables, and thus we dropped this variable from the analysis.

The White, Black, and Hispanic races comprise approximately 21%, 48%, and 27% of the sample respectively. The racial disparity in maternal education engagement remains prominent even after controlling for class and other socioeconomic status variables. Therefore, we included in the analysis additional socioeconomic and cultural variables to reduce any omitted variable bias and conduct sensitivity tests on the significance of racial disparity.

We included mother's educational attainment level at year 9, which constitutes "less than high school" (34%), "high school" (26.6%), "some college/technical school" (25.6%), and "college or graduate school" (13.8%). The *income* variable is a constructed continuous variable in FFCWS that measures mother's household income in thousands of dollars in year 9, with a median income of $34,000. Some of the missing income values are imputed by FFCWS. *Employment status* is a binary variable that measures whether mothers have been consistently employed from year 5 to year 9, and about 43% of mothers were consistently employed in those five years. Similar to the *living alone* variable, the duration of employment variable should be long enough so that it could exert potential influence on maternal engagement. The *material hardship* variable measures whether mothers experience any material hardship since the baseline year. This hardship variable and the income variable are not redundant, because the former reflects the actual financial condition and standard of living, while the income variable does not illustrate the cost of living. *Material hardship* is a binary variable constructed from a series of questions such as "being hungry because couldn't afford enough food," "did not pay the full amount of rent/mortgage," "gas/electric service turned off," and "did not see a doctor because of

cost." Approximately 90% of mothers experienced one of these material hardships since the birth of the focal child.

The second set of control variables account for the child's characteristics that might be confounding the relationship between household structure and maternal educational engagement, such as children's age, gender, repeating grades, and Woodcock Johnson vocabulary test scores. Children's age is measured in years and months, with a median age of 9.2, and about 90% of children are around 9 years-old. The percent of female children is about 47%. *Repeating grade* is a binary variable that indicates whether children repeat any grades from kindergarten up until wave 5. The Woodcock Johnson test score is an interval ratio variable that measures children's standardized vocabulary capacity and reading comprehension skills, ranging from 0 to 14 with a median score of 9.9.

METHOD

To test our hypotheses, we used four nested logistic regression models with robust standard errors, which include a simple bivariate logistic regression model, incrementally followed by a model with household characteristics, a model controlling for mother's characteristics, and a full model that controls for children's characteristics. We ran four nested models for each dependent variable. Our main findings will only include the full models, and the less constrained models are included in the appendix. We conducted the regression analysis for the three dependent variables separately. In addition, we used robust regression models and reported the odds ratios and t-statistics for each model, using the reference group of mothers who live with partners.

Logistic Regression Models

Our models examine the effect of mother's living arrangement, especially single motherhood, on each of the maternal education engagement measures – tutoring, talking to teachers, and reading books to children. The following is the formula for the full model:

$$Ln(\frac{p(engage)}{1-p(engage)}) = \beta_0 + \beta_1 Alone_i + \omega_1 House_i + \omega_2 Mother\_Demo_i + \omega_3 Mother\_Econ_i + \omega_4 Child\_Demo_i + \varepsilon$$

Where *i*: individual mother in the sample; *p(engage)*: probability of mother engaging in child's educational affairs; *b*: slope coefficient of a variable; b_0: slope coefficient of the reference group; *w*: slope coefficients of a set of variables; *Alone*: binary variable indicating single motherhood for the last 4 years; *Mother_Demo*: mother's demographic variables - age, race and education; *Mother_Econ*: mother's/household economic variables – income, employment status, and material hardship; *Child_Demo*: child's demographic variable – gender, age, repeating grade, vocabulary test scores; *e*: a robust error term.

RESULTS[8]

Table 2 reports the odds ratios and standard errors for key predictors and control variables that show significant association with maternal engagement outcomes. The table omitted mother's age, income, employment status, material hardship, child's gender and age, repeating grade, and reference group. The reference group is mothers who are White, with an educational attainment level of less than high school completion, and consistently married or cohabiting with no grandparents in the house. In Model 1, the results show no difference between the proportions of single mothers and married/cohabiting mothers for enrolling their children in "academic activities like tutoring or math lab" after controlling for everything else. In other words, children from single mother households are just as

[8] Table 1 for descriptive statistics will be included in a future version of this paper.

likely to participate in after-school tutoring or math lab as children from two-parent families.

Model 1 also shows that mothers with more than some college education are more likely to have children enrolled in tutoring or math lab than mothers with an educational attainment level less than high school (1.35 times for mothers with some college education and 1.39 times for college or graduate school educated mothers). This result is in line with cultural capital studies and theory (Brown, 1974), suggesting college-educated mothers pass on knowledge and skills useful for navigating the education system to their children. We also found that children of Black mothers are on average 1.87 times more likely to enroll in after-school academic activities compared with their White counterparts holding all else constant (p-value < 0.001). This racial disparity requires future study, and the potential mechanism for this racial gap will be discussed. The Woodcock Johnson test of vocabulary has a negative significant association with the possibility of tutoring/math lab participation. The model suggests that for every 10-point increase in the vocabulary test, the probability of enrolling child in tutoring/math lab is reduced by 9% holding all else constant, suggesting that children who are academically “gifted” or prepared are in less need of tutoring services.

Model 2 suggests that single mothers are approximately 22% less likely to make contact with a teacher to discuss the child's academic or behavioral issues compared with mothers living with partners holding all else constant (p-value < 0.01). This result may support the time-deficit hypothesis that single mothers who are consistently employed may have less time and energy to initiate discussion with the teacher. As for the control variables, mothers with more than one child are also 14% less likely to start a conversation

with teachers compared with mothers with only one child after controlling for everything else. This finding is a further evidence for the time-deficit hypothesis where mothers are less likely to initiate conversation if they have to distribute child-caring time among multiple children. In addition, college-educated mothers are 1.8 times more likely to initiate conversation about the child's academic affairs with teachers than mothers with less than a high-school education.

Model 3 shows that the probability of reading books to children more than once a week for single mothers is the same as that of married/cohabiting couples holding all else constant. The model also indicates no statistical difference in the probability of reading books across educational level and number of children in the household. However, Hispanic mothers are approximately 32% less likely than non-Hispanic White mothers to read books to their children more than once a week. One mechanism that may help explain this variation is the unavailability of children's books written in the Spanish language compared with those written in the English language. After controlling for whether mothers used Spanish language questionnaires, the statistical significance of the coefficient for Hispanic mothers disappears.

DISCUSSION

In general, the results from the full models suggest that single mothers who live alone are just as likely to personally engage in their child's education as cohabiting and married mothers. The study also reaffirms that there is no significant difference in parental education engagement between cohabiting mothers and married mothers. Cultural capital theory may help explain what discourages Black mothers from engagement with teachers

while encouraging educational investments in after-school activities. School-initiated stigma around race and single motherhood may intersect to further discourage parent-initiated interactions with teachers. The racial disparity in child tutoring between Black and White mothers could be explained by the following hypotheses that warrant future study. Black mothers: are more likely to enroll their children in schools that offer after-school tutoring or math lab; are systematically recruited by tutoring firms and school programs; utilize tutoring services to help their children have more equal educational opportunities to those of White children; have families or communities with more activated social capital or higher levels of attachment between the mother and children; and are clustered in certain occupations that require long work hours and therefore child enrollment in after-school activities.

The race effect on mother-initiated communication with children's teachers is hypothesized to reflect some influence from demographic mismatch between teachers and parents. A potential explanation for the disparity in parent-initiated discussion with teachers between single mothers and mothers with partners is that school-initiated stigmatization surrounding single motherhood and a lack of dominant cultural capital discourage single mothers from initiating conversation with the child's teacher. Therefore, Black mothers and single mothers may prefer after-school program enrollment and reading at home as their engagement strategies rather than teacher communication. The similar levels of engagement overall between single mothers and mothers in two-parent households demonstrate that single mothers are just as active in children's education as their partnered counterparts.

Another potential piece of the puzzle for explaining similar engagement levels is targeted-selection, which hypothesizes that single mothers and other disadvantaged families are specifically targeted by the government, schools, and private programs that aim to assist socioeconomically vulnerable families. Because of the resources that become available from these institutions, families are more likely to take advantage of services such as children's tutoring or after-school math lab. Unfortunately, this level of information about tutoring or after-school programs is not identified in the FFCWS. This framework takes an optimistic stand on the effectiveness of funded programs for increasing child enrollment in academic enrichment activities, and compliments the time-deficit framework wherein single mothers have less time to allocate to parental educational engagement due to work obligations and thereby choose to enroll their children in private tutoring or math lab because they have the resources to do so.

The present study has several limitations. Some of the variables may have internal validity issues. For example, the variable for after-school tutoring and math lab does not specify who made the decision for the child to participate in the activity. The models also do not account for interaction effects of living arrangement and race. Single motherhood may have a multiplicative negative effect on Black mothers compared to the effect of Black married mothers or the effect of non-Black single mothers. The small sample size for the reference group reduces coefficient significance for the main effects when running interaction analysis. The small sample size may diminish the potential moderating effect of mother's race in the analysis of living arrangement's impact on maternal engagement.

A tremendous research and policy spotlight is currently on how schools influence children, but the connection between household structure and children's educational

success deserves more attention from researchers and policymakers. Therefore, a study like this is one endeavor to increase understanding about the evidence and policy implications for after-school and family factors that shape children's academic progress. For instance, some general policy implications include the possibility of schools removing barriers and implementing evidence-based strategies to encourage inclusive teacher-parent interactions, schools and local libraries could include more books in multiple languages such as Spanish, and educational institutions could provide free English language programs for Spanish-speaking mothers.

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Table 1 [please email the first author for descriptive statistics]

Table 2: Odds Ratio of Logistic Regression Models Predicting Maternal Education Engagement using FFCWS 2005-2009 (N = 2,982)

	(1) Tutor or Math Lab	(2) Initiation Discussion	(3) Read books > than Once a Week
Living alone since year 5	1.130	0.779**	1.064
	(1.41)	(-2.96)	(0.70)
Residential transition	1.054	0.973	1.037
	(0.64)	(-0.35)	(0.43)
Grandparents in the house[1]	0.965	0.974	0.940
	(-0.42)	(-0.31)	(-0.70)
Have more than one child	1.058	0.756**	0.845
	(0.64)	(-3.13)	(-1.82)
Black	1.868***	0.759*	1.060
	(5.40)	(-2.40)	(0.50)
Hispanic	1.192	0.836	0.680**
	(1.38)	(-1.42)	(-3.10)
Other Race	1.194	0.676	0.736
	(0.74)	(-1.64)	(-1.29)
High school	1.028	1.091	1.000
	(0.27)	(0.88)	(-0.00)
Some college	1.349**	1.279*	1.209
	(2.77)	(2.33)	(1.72)
College or Grad	1.393*	1.833***	1.344
	(2.14)	(3.79)	(1.82)
Woodcock Johnson Test	0.910***	1.031	0.983
	(-3.58)	(1.20)	(-0.60)
BIC	3989.9	4035.3	3827.0

t statistics in parentheses

* p<0.05 ** p<0.01 *** p<0.001"

Variables omitted in this table are mother's age, income (2), employment status (3), material hardship (4), child's gender and age, (5) repeating grade, and reference group. The Reference group is White, less than high school educated, consistently married/cohabiting, mothers with more than one child and no grandparents in the house.

1. At least one grandparent lived with mother in any wave since baseline.
2. Mother's household income is imputed and in thousand of dollars.
3. Stay employed since year 5.
4. Mother experienced any material hardship since baseline.
5. Children repeat any grade since baseline.

Table 3: Odds Ratio Results of Logistic Regression Models Predicting Children's Enrollment in Tutoring and Math Lab using FFCWS 2005-2009 (N = 2,982)

	Binary	Household Structure	Mother's Characteristics	Full Model
Living alone since year 5	1.233**	1.242**	1.116	1.130
	(2.74)	(2.79)	(1.30)	(1.42)
Marital/residential transition		1.071	1.066	1.054
		(0.89)	(0.80)	(0.65)
Grandparents in the house		1.016	0.971	
		(0.19)	(-0.35)	0.965 (-0.42)
Have more than one child		1.085	1.077	1.058
		(1.02)	(0.84)	(0.64)
Mother's Characteristics				
Age at year 9			0.989	0.990
			(-1.39)	(-1.29)
Black			1.961***	1.799***
			(5.87)	(5.15)
Hispanic			1.218	1.192
			(1.54)	(1.36)
Other Race			1.200	1.194
			(0.76)	(0.74)
High school			1.021	1.028
			(0.21)	(0.27)
Some College			1.279*	1.349**
			(2.31)	(2.78)
College or Grad			1.305	1.393*
			(1.74)	(2.14)
Household income[2]			1.001	1.002
			(1.22)	(1.92)
Employed[3]			0.873	0.905
			(-1.67)	(-1.21)
Material hardship[4]			1.060	1.056
			(0.43)	(0.39)
Children's Characteristics				
Female				1.105
				(1.27)
Age in months				0.973*
				(-1.96)
Children repeat grades[5]				1.139
				(1.20)
Woodcock Johnson Test 9				0.910***
				(-3.63)
BIC	3937.8	3960.0	3980.3	3989.9

t statistics in parentheses

* p<0.05 ** p<0.01 *** p<0.001"

Table 4: Odds Ratio Results of Logistic Regression Models Predicting Mother-Initiated Discussion with School Teachers using FFCWS 2005-2009 (N = 2,982)

	Binary	Household Structure	Mother's Characteristics	Full Model
Living alone since year 5	0.690***	0.686***	0.781**	0.779**
	(-4.90)	(-4.87)	(-2.96)	(-2.94)
Any partner/residential transition		0.892	0.978	0.973
		(-1.49)	(-0.28)	(-0.34)
Grandparents in the house[1]		0.874	0.974	0.974
		(-1.69)	(-0.32)	(-0.31)
Have more than one child		0.706***	0.754**	0.756**
		(-4.31)	(-3.18)	(-3.15)
Mother's Characteristics				
Age at year 9			1.008	1.008
			(1.04)	(1.00)
Black			0.746**	0.759*
			(-2.58)	(-2.40)
Hispanic			0.828	0.836
			(-1.51)	(-1.43)
Other Race			0.672	0.676
			(-1.69)	(-1.65)
High school			1.094	1.091
			(0.91)	(0.87)
Some College			1.289*	1.279*
			(2.41)	(2.32)
College or Grad			1.859***	1.833***
			(3.82)	(3.72)
Household income[2]			1.000	1.000
			(0.42)	(0.29)
Employed[3]			1.008	0.997
			(0.09)	(-0.03)
Material hardship[4]			0.766	0.761
			(-1.85)	(-1.89)
Children's Characteristics				
Female				1.094
				(1.16)
Age in months				1.004
				(0.31)
Children repeat grades[5]				1.048
				(0.44)
Woodcock Johnson Test 9				1.031
				(1.19)

t statistics in parentheses

* p<0.05 ** p<0.01 *** p<0.001

Table 5 [please email the first author for the odds ratios results for the initiating conversation w/ teachers].

Figures: they will added in future revisions or in publication.