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Impact of Family Structure & Gender on School Engagement

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Capstone Project (PPM 699)

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April 28, 2013

Impact of Family Structure & Gender on School Engagement

Background

According to the U.S. Census Bureau, 85% of all children were living with two parents in 1970. By 1990 this proportion had decreased sharply to 73%, and by 2009 the proportion stood at 69% (Kreider & Ellis, 2011). These changes in children's living arrangements triggered a number of studies over the years, and the majority of these studies found correlations between single-parent households and negative outcomes for the children raised in them, including poor academic achievement (Amato & Keith, 1991; Downey, 1994; McLanahan & Sandefur, 1994; Pong 1998).

Because most single-parent households have been headed by single females, the majority of studies on single-parent households have focused on the absence of a father and the impact of the father's absence on children. Barajas (2011), for instance, reports that children from father absent households are less likely to finish high school and less likely to attend college. Additional studies have focused on the differences in outcome for boys and girls. While studies have found that both boys and girls are negatively impacted by the absence of a father, they have also found that the impact is greater on boys (Hetherington, Camara, & Featherman, 1983; Fry & Scher, 1984; Krein & Beller, 1998).

Furthermore, because the negative outcomes associated with single-parent households were found to be worse for boys, and because the majority of the households lacked a father figure, some researchers turned their attention to fathers and sons and to gender-matched parent and child pairs. The most widely cited study of this sort was the Texas Custody Research Project conducted by Santrock and Warshack in 1979. The study took place over a 15-year period and included 64 families. A third of these families were intact dual-parent families, a third were single-female parent families, and a third were single-male parent families. Santrock and Warshack found a strong correlation between children's well being and living with the same gender parent in these families.

Different theories have been used to explain Santrock and Warshack's findings and the supposed benefits of same gender parenting, including psychodynamic and social learning theories. Psychodynamic theory holds that children are more apt to identify with their same gender parent, while social learning theory explains that children learn proper gender behavior when they see it modeled by their same gender parent (Lee & Kushner, 2008). This process is interrupted following divorce for those children who are separated from their same gender parent. Without the "proper" (same gender) role model, children struggle to identify and develop appropriate behaviors, including those related to education and academics.

Santrock and Warshack's study had practical implication, primarily in the making of child custody decisions. Previously the tendency had been to place children with their mothers unless there was good reason to decide otherwise. Following Santrock and Warshack's study, however, the gender of the children was given greater consideration in divorce proceedings. While this practice gave many fathers the opportunity to play a larger role in the lives of their children (particularly their sons) and corrected the bias in favor of mothers, it may have introduced a new kind of bias.

Santrock and Warshack's study had limitations that may cast doubt on the generalizability of its findings. Their study was small, containing fewer than 50 single-parent families, and the participants, primarily white and middle-class, were not representative of the general population. Furthermore, other researchers have been unable to replicate their findings. Lee and Kushner

(2008) for instance, conducted a longitudinal study with 1,755 high school sophomores and found no evidence of academic benefits to children raised by the same gender parent. In fact, their study found that girls in single-father households did better than girls in single-mother households on three out of four academic measures and did no differently on the fourth measure. They found that boys in single-father households did no differently than boys in single-mother households on any of the four measures.

Purpose

The purpose of this study is to explore the impact of family structure and gender on children's academic engagement using secondary data collected as part of the National Survey of America's Families (NSAF) (2002). It will attempt to answer the following questions related to family structure and gender:

- 1. Do children in two-parent households have higher school engagement scores than children living in single-parent households?
- 2. Do girls have higher engagement scores than boys?
- 3. Do girls in single-parent gender-matched households have higher school engagement scores than girls in single-parent non-gender-matched households?
- 4. Do boys in gender-matched households have higher school engagement scores than boys in non-gender-matched households?
- 5. Do children in single-male parent households have higher school engagement scores than children in single-female parent households?

Description of Data

The data used in this analysis come from the National Survey of America's Families (NSAF) (2002) and are the result of a multi-year study conducted by the Urban Institute. Following the completion of the study, the Urban Institute archived a public-use data file at the University of Michigan's Inter-University Consortium for Political and Social Research (ICPSR) where it can be accessed online and/or downloaded free of charge.

The NSAF (2002) was conducted as a nation-wide telephone survey and the data collected through the survey were used to create a number of separate (though related and linkable) datasets, including focal child and adult pair datasets. All of the data and variables in this study come from these two datasets. The cases used in this study come from a subset of the cases in the focal child dataset. First, because the dependent variable is school engagement, only focal children aged 5 through 17 were included (N=22,034). Since the negative outcomes associated with children in single-parent households are often explained as an effect of instability, and since living with an adult other than a biological parent may indicate other confounding sources of instability, only those children living with biological parents were included in this study (N=17,300). In instances where children were living with two parents, only cases in which both parents were biological parents were selected for inclusion. Finally, school engagement scores were missing for a number of children, leaving a final sample size of 16,900 focal children. Because some variables of interest could only be found in the adult pair dataset (parents' education level, for instance), variables from that dataset were linked in 1.

¹ Detailed information on sampling method, datasets, and variable can be retrieved from the ICPSR website; see User Guide, Focal Child Codebook, and Adult Pair Codebook.

The final dataset used for analysis contains 11,818 dual-parent households. Of these households, 11,457 are married parent households, and 361 are non-married households. An additional 5,082 households are single-parent households. Of these, 4,386 households are headed by a single-female parent, and 696 are headed by a single-male parent. Of the 4,386 households headed by a single female, 2,185 contained a male focal child and 2,201 contained a female focal child. Of the 696 households headed by a single male parent, 371 contained a male focal child and 325 contained a female focal child.

Living Arrangements:									
Two parents									
Married		11457							
Non-married		361							
Two parents sub	total		11,818						
Single parents									
Mothers									
Sons	2,18 5								
Daughters	2,20 1								
Single mother	4,386								
Fathers									
Sons	371								
Daughters	325								
Single fathers	696								
Single pare	5,082								
Total	16,900								

Description of Variables

The dependent variable used in this study is the child's engagement in school scale. The scale was created from responses to four questions about 1) how often the child cares about doing well in school, 2) how often the child only works on schoolwork when forced to, 3) how often the child does just enough schoolwork to get by, and 4) how often the child always does homework. Parents were asked to respond with "all of the time," "most of the time," "some of the time," or "none of the time," and these answers were coded from 1 to 4 respectively. Answers to the questions 2 and 3 were then reverse coded and scores to all questions were added together to form a score between 4 and 16, with higher scores indicating a higher level of engagement with school.

Independent variables included a number of variables related to the child. First, since girls generally outperform boys academically, it was anticipated that girls would have higher engagement scores, so gender was included as a variable. Age was included as an independent variable; since older children are less enthusiastic about school, it was anticipated that increases in age would be result in a decrease in engagement score. A variable was included for whether the child was healthy or not. Parents were asked to say whether their child's health was excellent, very good, good, fair, or poor. Children whose parents indicated that they were in excellent, very good, or good health were recoded as healthy while children whose parents indicated they were in fair or poor health were recoded as not healthy. It was anticipated that children who were not healthy would have lower engagement scores. A variable was included for whether or not the child was receiving special education. Since children who receive special education services may have

learning disabilities that directly impact their engagement with school, it was anticipated that these children would have lower scores. A variable was also included for whether or not the child had a job and the number of hours the child worked per week. Because work makes a demand on time that might otherwise be spent on schoolwork, it was anticipated that working and more hours of work would be associated with lower scores.

Other independent variables were related to the child's parent. Since younger parents may lack the maturity to encourage children to apply themselves academically, it was anticipated that an increase in parental age would result in higher engagement scores. A variable was included for whether the parent worked and the number of hours worked per week. Since a separate variable was included to capture socio-economic status, this variable was intended to capture the impact associated with parent's time being spent outside the home. It was anticipated that working would be associated with lower scores as would increases in the number of hours worked. Variables were included for whether the parent had a high school diploma or GED and whether they had a bachelors degree or higher. It was anticipated that the presence of these credentials would indicate an awareness of the importance of education and result in an increase in engagement score. A variable was also included for parent's gender; this variable was not expected to be significant.

Other variables were related to the child's household. A variable was included for the number of children living in the household. Because children require individual attention, creating a demand on parental time and energy, it was anticipated that increases in the number of children in the household would result in lower engagement scores. Two variables were included to measure economic status—one for poverty, which was defined as living at or below the 100% poverty mark, and one for near poverty, which was defined as incomes between 100% and 200% of the poverty mark. Because higher economic status indicates that parents have greater resources at their disposal with which to engage their children academically, it was thought that poverty and near poverty would result in lower engagement scores.

The remaining independent variable in the analyses had to do with family structure. These variables include whether the child is living with one or two parents. It was anticipated that living with two parents would result in higher engagement scores. In cases where the child lives with two parents, a variable was included for whether the parents were married. While not the primary focus of this study, the variable was included because the literature on family structure suggests that parental marriage has a positive impact on children (Waldfogel, Craigie, & Brooks-Gunn; 2010). It was anticipated that children with married parents would have higher engagement scores in this study as well. In cases where the child lives with one parent, there was a variable for whether or not the parent's gender was the same as the child's (making a "gender matched" pair). Although past studies have shown that children from gender-paired household have better academic outcomes, it was not anticipated that gender pairing would have an effect on engagement scores once other factors, such as economic status, were controlled. Finally, a variable was used to indicate whether the child saw the non-custodial parent frequently—about once a week or more. It was thought that continuous contact with both parents might mitigate the effects of parental separation on children; thus, it was anticipated that frequent contact would result in higher engagement scores.

Methods

Research questions were answered by first performing independent t-tests to measure differences between the various groups on the response variable (school engagement). Next, multiple

regression analyses were performed to determine whether these differences persist when control variables are used.

Analysis

Do children in two-parent households have higher school engagement scores than children living in single-parent households?

An independent t-test indicates that school engagement scores for children living in two-parent households (M=13.13, SD=2.53) are significantly higher than school engagement scores for children living in single-parent households (M=12.23, SD=2.79) (t(8839) = 19.59, p < .001).

Although children from two-parent households are likely to benefit from higher socioeconomic status, which may account for some of the difference in school engagement scores, multiple regression analysis confirms the relationship between two-parent households and higher school engagement scores even when controlling for socioeconomic status. Regression Model #1 (see appendix) shows that children in two-parent households have a .559-point advantage in school engagement score compared to children in single-parent households. Likewise, children who are not living in poor or nearly poor households likewise have an advantage over children who do. The model also indicates that girls are more engaged than boys and younger children are more engaged than older children. It indicates that children receiving special education services have lower school engagement scores compared to those who do not. Finally, it shows that having a parent with a high school diploma and having a parent with a bachelor's degree or higher both result in an increase in the child's school engagement score.

A small percentage (3.1%, n=361) of two-parent households contained non-married parents. When a variable for marital status was added to Model #1 and the analyses was repeated for children living in two-parent households, the results showed that marital status is significantly related to children's engagement scores (Model #2, appendix). Children whose parents were married scored approximately .467 points higher compared to children living with unmarried parents. The addition of the marital status variable did not change the significance of the remaining variables; variables that were significantly related to school engagement scores in Model #1 were significant in Model #2 as well.

Do girls have higher engagement scores than boys?

An independent t-test indicates that school engagement scores for girls are significantly higher (M=13.44, SD=2.47) than school engagement scores for boys (M=12.30, SD=2.69) (t(16860)=28.61, p < .001). Multiple regression analysis confirms this effect when controlling for other variables. Girls' school engagement scores are 1.065 point higher than boys' (Model #1).

Do girls in single-parent gender-matched households have higher school engagement scores than girls in single-parent non-gender-matched households?

An independent t-test indicates that school engagement scores for girls in single-parent gendermatched (i.e., single mother) households (M=12.80, SD=2.69) are not significantly different from scores for girls in single-parent non-gender-matched (i.e. single father) households (M=12.96, SD=2.57) (t(2524) = 1.05, p = .294). Multiple regression analysis confirms this finding; the coefficient for gender-matched parent-child pairs is not statistically significant (Model #3, appendix). In order to capture the influence, if any, from girls' contact with the non-custodial parent, a variable for this was added to the model. The coefficient for this variable was not

statistically significant. While all the variables that were statistically significant in the earlier models remained so in this one, an additional variable was significantly related to girls' school engagement scores—number of hours worked per week. In single-parent households, each additional hour girls worked each week resulted in an increase of .029 points.

Do boys in gender-matched households have higher school engagement scores than boys in nongender-matched households?

An independent t-test indicates that school engagement scores for boys in single-parent gendermatched (i.e., single father) households (M=11.86, SD=2.59) are not significantly different from scores for boys in single-parent non-gender-matched (i.e. single mother) households (M=11.62, SD=2.82) (t(530)=1.63, p=.104). Multiple regression analysis confirms this finding; the coefficient for gender-matched parent-child pairs is not statistically significant (Model #4, appendix). As with the previous regression model, in order to capture the influence, if any, from boys' contact with the non-custodial parent, a variable for this was added to the model. Interestingly, this variable, which was not statistically significant for girls, was statistically significant for boys. Boys who see their non-custodial parent frequently have an increase of .364 points on the school engagement scale compared to boys who do not see their non-custodial parent frequently. Number of hours worked per week was also significantly and positively correlated with school engagement scores; each additional hour boys worked resulted in an increase of .031 points.

For boys in single-parent households, the age of the parent was significantly related to school engagement scores. Each additional year of parental age results in an increase of .020 points in the school engagement score. This variable was not significant in the analysis of girls in single-parent households, of children in two-parent households, or when all children were included in the analysis, so it is interesting that it would be so for this subset of children. It is also interesting that the variables for being poor and nearly poor were not significantly related to school engagement scores for boys in single-parent households since they were related to school engagement scores for girls.

Do children in single-male parent households have higher school engagement scores than children in single-female parent households?

An independent t-test indicates that school engagement scores for children living in single-male parent households (M=12.38, SD=2.639) are not significantly higher than school engagement scores for children living in single-female parent households (M=12.21, SD=2.814) (t(963) = 1.51, p = .130). Regression analysis bears this out as well (Model #5, appendix). When a variable was added for parent's gender, the coefficient was not statistically significant. Because the analysis includes both boys and girls in single-parent households, a variable for child's gender was included. This variable was statistically significant.

Discussion

This study shows that when other factors are controlled, gender-matched child-parent pairing does not have an effect on school engagement scores. Studies that seem to find such a relationship between gender-matched child-parent households and better academic outcomes may be confounded by the relationship between the gender of the child and the likelihood of living in a gender-matched child-parent household. Since most children living in single-parent households live with their mothers, the majority of gender-matched child-parent households are made up of mother-daughter pairs. Because girls have higher school engagement scores than boys, it may

appear that gender-matching child-parent pairing has an effect on engagement scores when, in fact, it is the gender of the child that matters, not the gender matching between parent and child.

In this study, 87.1% (n=2201) of girls living in single-parent households lived in gender-matched child-parent households, compared to 14.5% (n=371) of boys. Of all the gender-matched child-parent households, 85.6% were mother-daughter households. Children in these households were more likely to have higher scores than children in non-gender matched households, but regression analysis shows that this was due to the gender of the child rather than gender pairing.

The impact of the child's gender is not limited to a difference in school engagement scores. The remaining variables influencing engagement scores were different for boys and girls living in single-parent households. For girls, parents' education and poverty level were important; for boys, these factors were not important. For boys, parents' age and frequent contact with non-custodial parent were important; for girls, these factors were not important. Future research might explore these differences further. Researchers specifically interested in gender and development might explore the difference between girls and boys and the academic benefit of seeing the non-custodial parent. For 85.5% of the boys in this study, the non-custodial parent was the father (i.e., the samegender parent). It could be that gender pairing is important for academic engagement—not in terms of custody, but in terms of contact. While contact with the non-custodial parent did not prove significant for girls, in the majority of cases, the non-custodial parent was not the samegender parent. This might warrant more study.

Limitations

There were several limitations to this study. One limitation is that the children's school engagement scores were based on parents' responses to survey questions. If there were differences in what mothers and fathers expected from children and/or differences in what parents expected from sons and daughters, these differences would be captured by this variable. A score derived from actual performance might have been a better measure of school engagement.

Another limitation is that children's living arrangements are a reflection of where and with whom children were living at the time of the survey. However, children with divorced parents, particularly older children, may not remain with the same parent throughout their childhoods, and this variable cannot capture the influence of past living arrangements. A more rigorous study would require using longitudinal data.

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APPENDIX A

Dependent variable: School Engagement Score (higher score = greater engagement)

	#1		#2		#3		#4		#5	
	All children		Children in dual-parent households		Girls in single-parent households		Boys in single-parent households		Children in single-parent households	
Independent Variables	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Age of child	11.39	3.53	11.27	3.56	11.74	3.42	11.42	3.46	11.68	3.44
Number of hours child worked per week	1.64	5.48	1.70	5.53	1.60	5.48	1.38	5.25	1.49	5.37
Age of parent	40.08	7.09	40.63	6.81	38.99	7.56	38.65	7.50	38.82	7.53
Hours parent worked per week last year	30.79	19.26	29.40	19.76	33.48	17.89	34.52	17.37	34.00	17.63
Number of children in household	2.08	1.04	2.13	1.03	1.95	1.03	1.94	1.04	1.95	1.04
	9	% %		%	%		%		%	
	0	1	0	1	0	1	0	1	0	1
Gender child (0=male, 1=female)	51.0%	49.0%	51.3%	48.7%					50.3%	49.7%
Child healthy (0=no, 1=yes)	4.8%	95.2%	3.5%	96.5%	7.8%	92.2%	8.2%	91.8%	8.0%	92.0%
Special education (0=no, 1=yes)	88.4%	11.6%	89.9%	10.1%	88.6%	11.4%	81.0%	19.0%	84.8%	15.2%
Child has job (0=no, 1= yes)	85.9%	14.1%	85.0%	15.0%	87.3%	12.7%	88.8%	11.2%	88.0%	12.0%
Nearly poor (0=no, 1=yes)	78.1%	21.9%	82.4%	17.6%	68.0%	32.0%	67.8%	32.2%	67.9%	32.1%
Poor (0=no, 1=yes)	87.4%	12.6%	93.6%	6.4%	72.1%	27.9%	73.7%	26.3%	72.9%	27.1%
Parent has high school diploma or GED (0=no, 1=yes)	11.7%	88.3%	9.7%	90.3%	15.7%	84.3%	16.7%	83.3%	16.2%	83.8%
Parent has bachelors degree or higher (0=no, 1=yes)	70.6%	29.4%	65.1%	34.9%	83.2%	16.8%	83.7%	16.3%	83.4%	16.6%
Parent worked last year (0=no, 1=yes)	19.6%	80.4%	21.9%	78.1%	15.0%	85.0%	13.7%	86.3%	14.3%	85.7%
Lives with single parent (0=no, 1= yes)	69.9%	30.1%								
Parents married (0=no, 1=yes)			3.1%	96.9%						
Gender matched pairs (0=no, 1=yes)					12.9%	87.1%	85.5%	14.5%	49.4%	50.6%
Child sees non-custodial parent frequently (0=no, 1=yes)					70.9%	29.1%	68.5%	31.5%	67.7%	30.3%
Gender of parent (0=male, 1=female)					12.9%	87.1%	14.5%	85.5%	13.7%	86.3%

APPENDIX B
Dependent variable: School Engagement Score (higher score = greater engagement)

	#	#1 #2		2	#3		#4		#5	
	All children		Children in dual-parent households		Girls in single-parent households		Boys in single-parent households		Children in single-parent households	
	(n=16,900) R = .352 F _{15, 16884} = 159.454 p < .001		(n=11,818) R = .321 F _{15,11802} = 90.603 p < .001		(n=2,526) R = .277 F _{15, 2510} = 13.880 p < .001		(n=2,556) R = .281 F _{15, 2540} = 14.518 p < .001		(n=5,082) R = .332 F _{16,5065} = 39.272 p < .001	
Independent Variables										
	В	Std. Error	В	Std. Error	В	Std. Error	В	Std. Error	В	Std. Error
Gender child (0=male, 1=female)	1.065***	.038	1.063***	.044					1.073***	.075
Age of child	089***	.007	070***	.008	084***	.019	166***	.019	126***	.014
Child healthy (0=no, 1=yes)	.712***	.091	.838***	.124	.470*	.194	.655**	.198	.551***	.139
Special education (0=no, 1=yes)	-1.149***	.060	-1.071***	.074	-1.483***	.163	-1.107***	.138	-1.259***	.105
Child has job (0=no, 1= yes)	.146	.085	.174	.096	.043	.248	116	.257	017	.179
Number of hours child worked per week	.005	.005	005	.006	.029*	.015	.031*	.015	.030**	.011
Nearly poor (0=no, 1=yes)	262***	.052	245***	.064	409**	.130	062	.135	228*	.094
Poor (0=no, 1=yes)	246**	.070	325**	.099	430*	.157	.047	.165	174	.114
Age of parent	.006	.003	.002	.004	002	.009	.020*	.009	.009	.006
Parent has high school diploma or GED (0=no, 1=yes)	.500***	.065	.551***	.082	.628***	.149	.106	.153	.370**	.107
Parent has bachelors degree or higher (0=no, 1=yes)	.380***	.046	.369***	.050	.510**	.147	.235	.155	.376***	.107
Parent worked last year (0=no, 1=yes)	099	.079	094	.088	294	.235	021	.257	178	.174
Hours parent worked per week last year	001	.002	.000	.002	007	.005	.006	.005	.000	.004
Number of children in household	.001	.020	.002	.024	.051	.054	062	.056	006	.039
Lives with single parent (0=no, 1= yes)	559***	.047								
Parents married (0=no, 1=yes)			.467***	.131						
Gender matched pairs (0=no, 1=yes)					.000	.162	018	.161		
Child sees non-custodial parent frequently (0=no, 1=yes)					.143	.115	.364**	.117	.267**	.082
Gender of parent (0=male, 1=female)									.011	.114

^{*} p < .05 ** p < .01 *** p < .001