Son Preference in Educational Investment in Taiwan: The Role of Budget Constraint[1]

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Abstract

Prior studies have shown that apart spaced sibship and having an additional younger sibling both have negative effects on the educational attainment of Taiwanese women, but not men. This finding is often interpreted as son preference in intrafamily allocation of resources. We argue that such gendered investment in children's education only exists under budget constraint. Using full-sibship data from the 2002 and 2007 Taiwan Social Change Survey, we find that men with older siblings have higher educational attainment, while women with younger siblings have lower educational attainment. Moreover, we find that the positive effects of having an additional older sibling, mainly from older sisters, on men's educational outcomes only exists in large families, but not small families. We conclude that Taiwanese parents exhibit weaker son preference in their investment in children's education when the economic constraints become weaker.

INTRODUCTION

Many stratification research have devoted to the studies of the relationship between sibship configuration and educational outcome for decades. Previous studies have shown the consistently inverse relationship between sibship size and educational attainment holding family background factors constant (Blake 1981, 1986, 1989; Downey 1995). In order to understand the effect of sibship size further, researchers have taken other sibling configuration into account, such as birth order (Powell and Steelman 1991; Sulloway 1996), sibling spacing (Steelman 1990, 1993) and sibship sex composition (Butcher and Case 1994; Conley 2000).

Compared to the consensus about the effects of sibship size, birth order, and sibship space, the relationship between sibship sex composition and educational attainment has been mixed. In some studies, there is no effect of sibship sex composition on educational attainment (Hauser and Kao 1998; Kaestner 1997). However, some studies state the increasing of the number of brothers decreases individual's educational opportunity (Powell and Steelman 1989,1990). In addition to the effect of the number of brothers, Conley (2000) takes individual's gender into account and concludes that opposite sex siblings affect negatively on individual's educational attainment.

Over the last few decades, although we have seen mounting research of the effects of sibship configuration, only a few studies have addressed the gender asymmetry of the sibship effects (Chu, Xie and Yu 2007). The reason for this previous research trend may be due to cultural differences, which son preference is not an important issue in the Western countries whereas in East Asian countries. In Taiwanese family culture constructed by patriarchal culture and Confucian values, sons are key members in patriarchal clan so they occupy the higher positions in the family. Therefore, the allocation of family resources relies on child's gender; parents

prefer to invest more resources to sons than to daughters.

Moreover, parents allocate family resources differentially to each child especially when family resources are restricted. Because of the limitation of the resources in disadvantaged families, the negative effects of additional sibling on educational performance become more seriously than in advantaged families (Parish and Willis 1993). Hence, taking son preference culture context into account, when the family resources are limited, daughters will receive fewer resources than sons' resources. However, the circumstances of the family have changed over time, for example, the increase of family economic resources and the decrease of the number of children. As family circumstances became economically better off, parents do not necessarily decide how to allocate their investment to different child. As a result, daughters' disadvantaged situation may vary by birth cohort and by family size.

The purpose of this paper is to reveal intrafamily gender inequality and how it varies by changing circumstances. I examine the effects of number of brothers and sisters, and decompose these effects by interacting with individual's gender to show the gendered effect under the patriarchal context. Finally, we further inspect whether the effects changes over time.

Explanations for Sibship Effects

There are two main theories of sibling effects in previous research, the confluence model and the resource dilution model. The main ideas of these two models are as follows:

1. The Confluence Model

Zajonc and Markus (1975) posit the confluence model to explain the relationship between sibship size, birth order, and child's intelligence based on the family environment. This model suggests that children's intellectual development is

affected by family intellectual environment which is the average intelligence of all members in the family. Assuming that intelligence grows over age, the more young children with lower intelligence are in family, the lower intellectual climate the family has and the more negative effects on children's intelligence because of the decrease of average intelligence. Hence, the relationship between sibship size and children's intelligence is negative.

In addition, the negative effect of sibship size for each child in the same family is different. Early born children are less affected by family size than later born children because early born children grow up in a smaller family with better intellectual environment before their younger siblings are born; moreover, early born children also benefit from having younger siblings by tutoring them.

Although this theory construct the clear relationship and causal mechanism between sibship size and children's intelligence, there is little empirical evidence to support the confluence model because of the difficulties of defining intelligence and intellectual environment (Retherford and Swell 1991); furthermore, the model is also hard to be applied to different cultural context, especially the developing countries (Parish and Willis 1993).

2. The Resource Dilution Model

The major alternative explanation to the confluence model is the resource dilution model which is posited by Blake in 1986. The resource dilution model states that the allocation of family resources depends on the number of children and affects children's educational performance. The original assumption of the model is that family resources are fixed and finite, and are negatively related to sibship size (Blake 1981, 1989).

Downey (1995) extends the resource dilution model and states that family resources do not dilute equally. He effectively decomposes the relationship between

sibship size and family resources into three types. First, interpersonal resources display linear negative relationship with sibship size, such as parents' educational expectations. In the second and third parts, economic resources at individual level are 1/x form, whereas economic resources at household level present threshold pattern. Furthermore, children from large family face not only fewer family resources but also lower utility of the resources.

In addition, this resource perspective predicts not only the effect of sibship size but the effects of birth order, spacing and sibship sex composition. Because family resources have to be allocated to multiple children in the family, siblings spaced close will dilute more resources at the same time. Powell and Steelman (1990, 1993) als with close spacing siblings receive fewer educational resources than those with distant spacing siblings; in another study, they found that early-born children get less educational resources and enter labor market earlier than their younger siblings because of family life course (Powell and Steelman(1991). In contrast to the consensus about the effects of sibship size, birth order, and sibship spacing, the relationship between sibship sex composition and educational attainment has been mixed. Some studies argue that brothers get more resources than sisters, and hence the effect of adding one brothers will decrease individual's educational opportunity (Powell and Steelman 1989,1990), especially for females(Yu and Su 2006; Chu, Xie and Yu 2007). Some studies state that same sex or opposite sex siblings will decrease one's family resources, Colney(2000) concludes that opposite sex siblings affect negatively on individual's educational attainment, while Butcher and Case(1994) suggest that women raised only with brothers get higher education than women raised with any sister. Besides, some studies state there is no effect of sibship sex composition on educational attainment (Kaestner 1997; Hauser and Kao 1998).

Even though resource perspective can sufficiently explain the relationship

between siblings configuration and educational attainment, Guo and VanWey (1999) posit the hypothesis that the relationship between sibship size and educational performance is due to unobserved factors between families. In their perspective, sibship configuration is one of individual characteristics rather than family characteristics, and hence the sibling effect should be estimated at individual level. After fixing the family-level unobserved variables, they find that there is no causal relationship between sibship size and educational outcomes. A critique from Downey et al. (1999) mention that Guo and VanWey's research design exclude close spaced siblings who are impacted the most in the process of resource dilution.

Economic budget constraints, son preference and educational attainment

Blau and Duncan (1976) confirms the importance of family background and educational attainment and state that how many schoolings one can get depends not only on one's ability but also on the resources provided by his/her parents. However, parents cannot infinitely afford resources to satisfy the need of their children. Because of family budget constraints, parents have to allocate the resources to each child. Thus, the more children in the family, the fewer resources each child can get.

However, siblings do not necessarily equally share family resources, and the effects of family background are different to individuals from the same family (Conley 2004). On the basis of rational choice, parents would like to maximize the returns to their investment from children under budget constraints. Hence, they will invest more resources in education to their children with higher values in the labor market in order to receive more when they are old (Becker 1981; Kaestner 1997; Sudha 1997; Buchmann 2000).

In general, the higher returns to education for males and gender prejudice filling with the workplace lead to male advantaged labor market. Males often get

higher-paid and higher status jobs, whereas females get lower-paid and informal jobs. The reason for gender disparity in the labor market is that many women have to squeeze their time out of working time to take care of families after getting married, while men can continuously concentrate on pursuing their career. Therefore, the lower return to education for women reduces parents' incentive to invest daughters' education(Parish and Willis 1993). For parents, investing in son's education is a rational and cost-efficient choice. Powell and Steelman(1989) find the negative relationship between number of brothers and college funding. Moreover, Kaestner (1997) reports that sisters affect individual's educational resources more positively than brothers, that is, people with sisters get better educational attainment than those who have brothers. Nevertheless, his finding just can generalize to American African, not to the white.

In addition to parental assessment of sons' and daughters' values in the labor market, the values of Taiwanese family influenced by Confucianism and patriarchal culture also matter in the process of allocating family resources. In traditional Taiwanese family culture, because married sons still stay in the natal family while married daughters marry into their husbands' family, sons are key members in the natal family. Thus, parents have a strong preference for sons (Greenhalgh 1985; Parish and Willis 1993; Chu, Xie and Yu 2007).

The preference for sons has been practiced in several aspects, including fertility behavior and allocation of family resources. The fertility behavior in the context of existing children is a way to examine parents' son preference (Raley, Bianchi, Cook and Massey 2006). If son preference exists, parents with daughters will be more likely to proceed to an additional child to try to have one son. Imbalanced sex ratio of new born infants reflects this fertility behavior. In Taiwan, the sex ratio of new born infants is about 100:108, and additionally the sex ratio of the third birth

newborns is up to 100:120 (內政部 2010). This imbalanced sex ration implies that parents favor sons and want to at least have one son.

Parental preference for sons also works in family practice - family resource allocation. Parents not only spend more resources on sons' education than daughters' education, but also transfer resources from daughters to sons to ensure sons' educational opportunity. In addition, beyond resource-dilution hypothesis posited by Blake (1981), family resources are not fixed under this situation, and daughters can improve family budget to help younger siblings by entering the labor market (Chu et al. 2007). Therefore, daughters, particularly unmarried elder daughters, are expected to leave school and go to work early to support their younger brothers to get higher education and better jobs (Parish and Willis 1993; Chu et al. 2007).

Sibship Sex Composition and Educational Attainment in Taiwan

In Taiwan, the gender gap in educational attainment is significantly affected by gender inequality within family. Parish and Willis (1993), Yu and Su (2006) and Chu et al. (2007) study the effects of sibship configuration on educational attainment for sons and daughters in the Taiwan context.

Parish and Willis (1993) state parents are altruistic in investments in their children under credit constraints, conditional altruism. Under patriarchal traditions, parents tend to invest more resources in sons than in daughters; nevertheless, the differences will vary by family circumstances. Using data from the 1989 Taiwan Women and Family Survey, Parish and Willis found that having an additional elder sister is associated with more years of schooling for both male and female. They also found that the educational effect of sibship size is negative only in poor families; siblings in rich families enjoy similar educational opportunities. They suggested that

the effect of sibship size and the effects of sibling sex-composition are relatively weak in the young birth cohorts.

Yu and Su (2006) and Chu et al. (2007) both emphasize the concept of seniority and son preference in Taiwanese family influenced by Confucianism and patriarchal culture. Yu and Su (2006) state the functioning of these two rules leads to the traditional saying "the eldest brother is like a father, and the eldest sister is like a mother" where the eldest son gets a greater amount of resources from parents to pursue higher educational outcomes, while the eldest daughter has to enter labor market early to take responsibility for family needs. The advantage of the seniority only belongs to males, not to female firstborns. In contrast, Chu et al. (2007) introduce seniority as a way of intrafamily resource transfers, that is, the flow of resource transfers among siblings is from older siblings to younger siblings. Moreover, they extend the resource dilution model and state that family resources are not fixed. In their argument, older siblings go to work early and bring resources back to improve family budgets and support their younger siblings.

Two studies used data from the Panel Study of Family Dynamics (PSFD) in Taiwan to estimate gender asymmetry effects of sibship composition (Yu and Su 2006; Chu et al. 2007). Chu et al. (2007) further extend the resource dilution model, and argued and found that when siblings are spaced further apart, the transfers of intrafamily resources are more pronounced so as to lower the education of elder sisters, but not elder brothers. Moreover, women with younger, spaced-apart brothers enter the labor market early. Yu and Su (2006) focus on the status of the first-borns and find that the firstborn daughters suffer more in larger mean age spacing families. In addition to daughters' disadvantages, they also find that firstborn sons' privilege increased in large families.

On the basis of son preference in Taiwan, all these three studies state females,

especially the older daughters, with younger siblings will sacrifice their educational opportunity and go to work, whereas males are rarely negatively affected by siblings. However, Parish and Willis (1993) collected the data more than two decades age, and they required the siblings of the respondents to be at least 20 years of age at e the interview to be included in the sample, to allow for sufficient time to have completed education. Nevertheless, the majority of Taiwanese in the recent birth cohort has attended college, and hence the findings need to be updated. In addition, although the family circumstances vary over time, the changes of the effects of sibship configuration have not been analyzed systematically. Therefore, in this study, we would like to further systematically investigate the effects of sibship configuration on educational attainment, further considering family circumstances.

METHOD

Taiwan Social Change Survey

Data come from two waves of the Taiwan Social Change Survey (TSCS). Each wave of TSCS includes a multistage stratified probability sample of the adult population in Taiwan. There were 1,992 and 2,040 respondents interviewed, respectively, in 2002 and 2007.

We choose the 2002 and 2007 TSCS because they include information about age, sex, and education for the eldest five siblings and the youngest sibling of the respondent[3], whereas other waves of the TSCS have very limited information about the respondent's siblings. To make our analysis comparable to previous studies (Chu et al. 2007; Yu and Su 2006), we use data for all siblings reported by the respondents (except those 89 individuals who were the only child in the family). Following Chu et

[3] Because the eldest five siblings and the youngest sibling may or may not include the respondent him-/herself, we have information for up to seven siblings (instead of six).

al. (2007), we include only families in which all siblings were age 25 years or older at the time of the interview in the analytic sample to ensure that the vast majority of individuals in the analytic sample to have completed schooling.[4] After listwise deletion of individuals with missing data on any of the variables, the analytic sample includes 11,781 individual siblings based on 2,524 respondents' reports.

Measures

Following Parish and Willis (1993), Yu and Su (2006), and Chu et al. (2007), we use educational attainment, measured by years of schooling, as the dependent variable. To operationalize sibship configuration, we first decompose the total number of siblings into the number of older siblings and the number of younger siblings. We then further decompose the configuration into the numbers of older sisters, older brothers, younger sisters and younger brothers. Control variables include parents' years of schooling, and the respondent's ethnic background (including four categories, Fukien, Hakka, Mainlander, and Aborigine) and birth cohort. We do not include an additional control of family size because this information is embedded in our sibship configuration specification. To examine whether the effects of sibship configuration differ by budget constraints imposed by family size, we include sibship configuration interacted with a dummy variable for five siblings (the median family size) or fewer.

Statistical Models

Following Parish and Willis (1993) and Chu et al. (2007), we estimate ordinary least squares (OLS) regressions to predict the individual's years of schooling; and use the Huber-White method to adjust for biases in standard errors due to the multilevel data structure. We do not apply the hierarchical linear models as Yu and Su (2006).

[4] Yu and Su (2006) used a slightly different criterion in their sample selection. They did not require all siblings to be at least 25 years of age. Instead, they included any siblings in the data who were at least 25 years of age in their analytic sample. This way, only some of the families included in Yu and Su's (2006) analysis comprise all siblings in the original data, whereas all the families included in Chu et al.'s (2007) analysis comprise all siblings.

Thus, we essentially assume that between-family differences are uncorrelated with sibship configurations. Because Yu and Su did not specify any cross-level interactions that involve the error terms, our assumption is not substantially stronger than theirs. We do not include sibling fixed effects for concerns over measurement errors in these data and identification-related concerns (see Chu et al. 2007 for a detailed discussion).

ANALYSES AND RESULTS

Table A-1 presents summary statistics.[5] Women, on average, have 8.96 years of schooling (i.e., a junior-high-school diploma). Men have 1.35 more years of schooling than women, which implies that parents may have invested more resources in their sons' education than in their daughters' education. Women have about .30 $(=(1.34-1.17)+(1.31-1.17))$ more younger siblings than men, suggesting that parents may have had a slight son preference in childbearing behaviors.

We begin by an attempt to replicate the basic models reported in Chu et al. (2007) and by implication Yu and Su (2006)—the two important recent studies based on data from the Panel Study of Family Dynamics—to make sure that any difference between our findings and their findings are not due to differences in the choice of data sets. Table 2 shows that our regression results are qualitatively the same as theirs: Having an additional sibling decreases women's, but not men's, educational attainment.

[Table 1 about here]

Building on these findings, we seek out to look closely at the effects of sibship configurations on educational attainment for men and women in Taiwan. In table3, we further decompose sibship into older siblings and younger siblings. Model A shows the differential effects of older siblings and younger siblings. Younger siblings will

[5] We use 4 siblings (including the individual himself/herself) as the cutoff for two reasons: (1) the median number of siblings in our sample is 5; and (2) the total fertility rates around the mean birth cohort (1950) was about 4.85 children.

decrease individual's educational opportunity, that is, one additional younger sibling reduces 0.14 years of schooling, while older siblings do not affect individual's educational outcomes. Moreover, Model B takes gender differences into account, and show that having an additional older sibling increases men's educational attainment not women's educational attainment, whereas having an additional younger sibling decreases women's educational attainment. Both the gendered effects of older siblings and younger siblings are statistically significant.

Furthermore, we analyze the effects separately for small families and large families. The findings show that adding one sibling, younger or older sibling, negatively affects both men's and women's educational attainment in small families, and further the effects of older siblings and younger siblings are similar for men but not for women(not shown in the table). In addition, women are especially negatively affected by younger siblings. In large families, the effects of older siblings become positive, especially significantly for men's educational outcomes. The most advantage thing for men is growing up in large families where they can receive more resources from older siblings and not be affected by younger siblings, whereas the most disadvantage thing for women is also growing up in large families where they have to work to support their younger siblings and do not benefit from older sisters.

[Table 2 about here]

We then examine whether and how the effects of having an elder sibling and having a younger sibling vary by the sex of the sibling. The results show that the positive educational effect of having an elder sibling for men comes from older sisters, but not older brothers. Model B shows that the effects of the number of brothers and sisters are asymmetric for men and women, that is, men are not negatively affected by their siblings, except for the positive effects of older sisters, while women are almost negatively affected by their siblings, except for no effect of older sisters. In addition,

the findings in small families, almost similar to table2, show that the effects of brothers and sisters are negative on men' and women' educational outcomes. In large families, the effects of older sisters become positive, that is, both men and women benefit from owning an older sister. Furthermore, men in large families get the largest amount of resources because they are not affected by their siblings, except for the positive effects of older sisters.

[Table 3 about here]

In general, as son preference argument, men get more resources than women, and they are less affected by their siblings than women. Moreover, the transfer of family resources flows from older siblings, older sisters, to younger siblings, especially when family resources are restricted. Therefore, male's advantages become more significant in larger families, and we also find that the effects of having an additional elder sister on men's educational attainment are only present in large families.

CONCLUSION

In this paper, we use the Taiwan Social Change Survey to examine the allocation of intrafamily resources between siblings. Because of the limited family resources, parents tend to transfer the resources from daughters to sons, and from older siblings to younger siblings.

The results from the analysis show that the privileged status of a son reduces the general disadvantages of having additional siblings, especially in larger families, whereas a daughter, particularly older daughters, sacrifices her educational opportunities and enters the labor market to support her younger siblings. Therefore, the best condition for male is to have older sisters in large families, while female generally faces worse situations than male in any condition.

These findings are in line with previous Taiwan studies(Yu and Su 2006; Chu et

al. 2007) though our data(TSCS) are different from their data(PSFD-Panel Study of Family Dynamics). In addition, this study examines the effects of sibship sex composition further, considering family budget constraints. The benefits of having an additional older siblings, older sisters, to men's educational attainment are only present in large families. It means that once Taiwanese parents can afford the expenses, they will exhibit no son preference in their investment in children's education.

Results

Descriptive Statistics

Table A1. Summary Statistics for Individual Men and Women in the Taiwan Socail Change Survey 2002 & 2007 (All Siblings)

	Male (n=5,938)		Female (n=5,843)		Total (n=11,781)	
Individual Level	mean	sd	mean	sd	mean	sd
Years of Schooling	10.288	(4.420)	8.957	(4.776)	9.628	(4.648)
Number of Elder Brothers	1.006	(1.134)	1.021	(1.163)	1.013	(1.149)
Number of Elder Sisters	1.130	(1.265)	1.100	(1.219)	1.115	(1.243)
Number of Younger Brothers	1.174	(1.294)	1.340	(1.311)	1.256	(1.305)
Number of Younger Sisters	1.174	(1.334)	1.311	(1.415)	1.242	(1.377)
Birth Cohort						
≤ 1935	.112		.106		.109	
1936~1945	.134		.135		.135	
1946~1955	.225		.233		.229	
1956~1965	.290		.297		.294	
1966~1981	.238		.228		.233	
Family Level						
Father's Schooling	4.873	(4.540)	4.852	(4.563)	4.862	(4.551)
Mother's Schooling	3.015	(3.691)	2.996	(3.644)	3.006	(3.667)
Father's Ethnic						
Fukkien	.770		.767		.768	
Hakka	.125		.130		.127	
Mainlander	.091		.088		.090	
Aborigine	.014		.015		.015	
Family size	5.483	(2.037)	5.771	(1.998)	5.626	(2.023)

Note: N=11,781 individuals from 2,524 families.

Table 1. Replicate the Basic Models in Chu, Xie and Yu (2007)'s paper with Taiwan Social Change Survey

	Chu, Xie and Yu(2007)'s Paper				Sibling Data in TSCS			
	Model A	Model A'	Model B	Model B'	Model C	Model C'	Model D	Model D'
Sibship Size	-.089**				-.059^{+}			
					(.031)			
Male×SibshipSize		.032				.050		
						(.037)		
Female×SibshipSize		-.217***				-.172***		
						(.034)		
Brothers			-.081*				-.048	
							(.044)	
Male×Brothers				.007				.053
								(.052)
Male×Sisters				.051				.047
								(.043)
Sisters			-.093**				-.067^{+}	
							(.035)	
Female×Brothers				-.182***				-.162***
								(.049)
Female×Sisters				-.237***				-.178***
								(.040)
R^2	.452	.453	.452	.453	.509	.512	.509	.511
Number of Families	2,591	2,591	2,591	2,591	2,524	2,524	2,524	2,524
Number of Observations	10,654	10,654	10,654	10,654	11,781	11,781	11,781	11,781

Standard errors in parentheses

$^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

Control variables include birth cohort, father's schooling, mother's schooling, father's ethnic, and gender.

Table2. the Effects of Older Siblings and Younger Siblings by Family Size

	Total		Gender	Small Families[a]		Gender	Large Families		Gender
	Model A	Model B	Difference	Model A1	Model B1	Difference	Model A2	Model B2	Difference
Female	-1.279***	-.363*		-.786***	-1.005*		-1.495***	-.340	
	(.067)	(.160)		(.098)	(.415)		(.085)	(.314)	
Sibship Configurations									
Older Siblings	.033			-.203+			.083+		
	(.031)			(.110)			(.046)		
Male×Older Siblings		.086*	¤[b]		-.279*			.151**	¤
		(.037)			(.135)			(.057)	
Female×Older Siblings		-.027			-.087			.023	
		(.038)			(.142)			(.055)	
Younger Siblings	-.137***			-.258*			-.119*		
	(.034)			(.113)			(.048)		
Male×Younger Siblings		.0003	¤		-.247+			.024	¤
		(.041)			(.136)			(.059)	
Female×Younger Siblings		-.270***			-.262+			-.245***	
		(.038)			(.147)			(.053)	
Intercept	4.969***	4.505***		4.512***	4.593***		5.041***	4.412***	
	(.247)	(.256)		(.451)	(.490)		(.353)	(.389)	
Number of Families	2,524	2,524		1,130	1,130		1,394	1,394	
Number of Observations	11,781	11,781		3,778	3,778		8,003	8,003	
R^2	.513	.516		.506	.506		.461	.463	

Standard errors in parentheses

+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

a. Small Family means the number of children is less than four or equal to four.

b. This sign means that the gender difference in sibship effects is statistically signigicant.

Table 3. the Effects of Older Brothers, Older Sisters, Younger Brothers, Younger Sisters by Family Size

	Total		Gender Difference	Small Families		Gender Difference	Large Families		Gender Difference
	Model A	Model B		Model A1	Model B1		Model A2	Model B2	
Female	-1.279***	-.365*		-.795***	-1.051*		-1.492***	-.343	
	(.068)	(.162)		(.110)	(.420)		(.085)	(.314)	
Sibship Configurations									
Older Brothers	-.026			-.231+			.014		
	(.047)			(.124)			(.059)		
Male×Older Brothers		.030	¤		-.360*			.098	¤
		(.054)			(.155)			(.069)	
Female×Older Brothers		-.104+			-.066			-.070	
		(.058)			(.164)			(.073)	
Older Sister	.084*			-.174			.143**		
	(.039)			(.119)			(.055)		
Male×Older Sisters		.133**	¤		-.214			.195**	
		(.048)			(.143)			(.069)	
Female×Older Sisters		.043			-.097			.106+	
		(.046)			(.155)			(.063)	
Younger Brothers	-.073			-.203			-.063		
	(.050)			(.133)			(.062)		
Male×Younger Brothers		.055	¤		-.239			.083	¤
		(.060)			(.162)			(.077)	
Female×Younger Brothers		-.208***			-.138			-.197**	
		(.058)			(.170)			(.071)	
Younger Sisters	-.203***			-.332**			-.176**		
	(.041)			(.125)			(.055)		

Male×Younger Sisters		-.056	¤		-.270^{+}	¤		-.037	¤			
		(.055)			(.148)			(.073)				
Female×Younger Sisters		-.336***			-.435*			-.296***				
		(.045)			(.171)			(.060)				
Intercept	4.972***	4.516***		4.513***	4.604***		5.053***	4.429***				
	(.249)	(.258)		(.451)	(.491)		(.354)	(.392)				
Number of Families	2,524	2,524		1,130	1,130		1,394	1,394				
Number of Observations	11,781	11,781		3,778	3,778		8,003	8,003				
R^2	.513	.516		.506	.507		.461	.464				

Standard errors in parentheses
$^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

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