The relationships of maternal attitudes in child-raising with their behaviors regarding children's health and investments in children's ability

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Abstract

This study investigates the links of maternal attitudes in child-raising with their behaviors and investments related to children's health and ability. The study uses data from an interview survey targeted at mothers with children aged four and held in central Taiwan in 2002, and its measures for maternal attitudes in child-raising include the major maternal reason for raising children and maternal most-wanted characteristic for children. Maternal behaviors regarding child health this study investigates are maternal patterns of using prenatal care, breastfeeding children, giving children nutritional supplements, and taking children to exercise. The investments in children's ability refer to training courses for improving children's intellectual capability, artistic skills and sporting talents. Results from multivariate analyses for this study show that maternal attitudes in child-raising substantially affect most of these maternal behaviors and investments regarding children's health and ability.

Keywords: mother, attitude, child-raising, child, health, ability

Introduction

Parents are influential on the accumulation of their children's human capital, which includes health and ability, through their behaviors regarding child health and investments in children's education or training (Fuchs, 1991; Becker, 1991). As different parents may have different reasons for raising offspring, children born to parents with different views toward child-raising may also face different opportunities for building their human capital. In this regard, both sociologists and economists have theories that explore this issue.

In general, a child's human capital is not only influential on his/her own life, but also meaningful to the parents. As economists and sociologists point out, children can bring both economic benefits and psychological satisfaction to their parents (Becker, 1960; Caldwell, 1982; Kaplan and Bock, 2001). In particular, sociologists argue that parents tend to pay more attention in the quantity of children in a society where children have to support and care parents according to social norms, while parents raise children mainly to obtain psychological and emotional benefits from parenting and tend to care the quality of children more in a society where parents generally do not expect that children will bring them financial rewards in the medium- and long-run (Caldwell, 1982). As to

economic theories related to this issue, economists have pointed out that parents are willing to invest in children's human capital mainly for two reasons. First, children may provide parents monetary income in the future, and thus have the function of a production good. Second, children can bring to parents certain psychic rewards or satisfaction, and can thus serve as a consumption good (Becker, 1960).

While sociological and economic theories mentioned above explain how parental incentives to raise children can positively affect their behaviors and investments with respect to children's human capital, some researchers probe whether parents with little interest in childbearing have worse relationships with their children. Research has found that women who did not want to have children but chose to have children tend to spend less time with and pay less attention to their young children (Barber, Axinn and Thornton, 1999). These women have to experience "unwanted childbearing" because of societal pressure or accidental pregnancy, and such experience may bring them depression, feelings of powerlessness, time pressure or physical health problems. Subsequently, these negative outcomes may deteriorate the patterns of their care for young children (Barber, Axinn and Thornton, 1999). Since some maternal care are

influential on child health, children born to women experiencing "unwanted childbearing" may have disadvantage in accumulating their health capital in early life.

Although economics and sociology have explored the relationships of parental attitudes toward childbearing and child-raising with their patterns in caring for and investing in children, there have been still few studies empirically examining this issue. To furnish knowledge in this area, this study utilizes Taiwanese data to empirically investigate whether maternal attitudes toward child-raising are associated with their behaviors and investments related to children's health and ability. Particularly, this study enquires into several kinds of maternal health and consumption behaviors in their children's early childhood, when parents play a critical role in events related to accumulation of human capital. These health and consumption behaviors include utilizing prenatal care, breastfeeding children, giving children nutritional supplements, taking children to exercise, and sending children to training courses for improving intellectual capability, artistic skills and sporting talents. The first four behaviors are related to children's health, while the last category of behaviors is associated with children's ability.

Although all these behaviors pertain to children's human capital, there are differences between conditions associated with these behaviors in Taiwan. For instance, parents have to spend a substantial amount of out-of-pocket money on buying nutritional supplements for children and sending children to training courses, but there are basically no expenditures for mothers to breastfeed children and take children to exercise. In contrast, mothers have to spend more time in order to breastfeed children and take children to exercise. As to utilizing prenatal care, women in Taiwan do not have to spend much time for using prenatal care, and only have to spend little money on prenatal care. Taiwan's national health insurance program (NHIP) has included most prenatal care in the NHIP coverage since 1995. Therefore, pregnant women in Taiwan only have to pay a very small amount of payment (about 1.5 US dollars) for a basic prenatal care visit, and such payment is waived for poor women. For more special items of prenatal care, a pregnant woman can also receive them for free if she is eligible for receiving such care based on her pregnant conditions. Because the government has devoted much effort to promote prenatal care and to offer cheap services for decades, pregnant women in Taiwan have conventionally and widely utilized prenatal care. In contrast, the prevalence rates of other health and

consumption behaviors investigated in this study are significantly lower. Because differences exist among background conditions pertaining to different health and consumption behaviors, factors associated with different behaviors may be different, and the relationships of maternal attitudes toward child-raising with different behaviors may also differ.

This study utilizes Taiwanese data to empirically examine the associations between maternal attitudes toward child-raising and several kinds of their health and consumption behaviors that may affect their children's well-being in early childhood as well as later life. Because there has been no literature on this regard for Asian countries, findings from this study can shed light on maternal attitudes toward child-raising in an Asian society with highly developed economy and rapidly declining fertility, and the associations of these attitudes with maternal health and consumption behaviors related to children's human capital in such a society. As there has also been little research in this area worldwide, these findings can also contribute to our understanding with respect to how maternal attitudes toward child-raising is related to their children's opportunities in accumulating human capital.

Materials and methods

Data

This study utilizes data from a survey conducted by Taiwan's National Health Research Institutes (NHRI) in 2002. This survey is a follow-up survey for a NHRI survey conducted in 2001. The interviewees for both the surveys are the mothers of three random samples of children who were three years old during the period for the 2001 survey. The sample sizes of the three samples are close to one another, and each sample is for a district in Taichung City --- the largest city in central Taiwan. The 2001 survey collected some information on maternal health knowledge regarding children's preventive care, maternal attitudes toward children's preventive care, and basic maternal demographic characteristics. The scope of the 2002 survey is larger. For each child, it collected information on the child's demographics, and parental demographic and socioeconomic background. It also surveyed maternal health knowledge and attitudes about children's preventive care, and their utilization of health care and training courses for the focal child. Furthermore, it collected some information on maternal attitudes toward child-raising, maternal perceptions about the focal child's health and ability, and parental financial investments for the focal child. For this study, we

pick from the 2002 survey database data regarding these children's and the mothers' demographic and socioeconomic characteristics, maternal attitudes toward child-raising, and maternal health and consumption behaviors mentioned previously in this paper. After dropping cases with missing values for at least one explanatory variable for multivariate analyses in this study, we obtain a sample with 1111 mother-child pairs.

Statistical analyses

As mentioned earlier, maternal behaviors regarding child health this study investigates are maternal patterns of using prenatal care, breastfeeding children, giving children nutritional supplements, and taking children to exercise. Regarding investments in children's ability, this study examines maternal choices of sending children to receive training courses for improving intellectual capability, artistic skills and sporting talents. In particular, training courses investigated in this study are more common kinds in Taiwan. In this study, courses for improving intellectual capability refer to courses on Chinese reading, Chinese writing, foreign language, mathematics, and skills in using computers;

those for artistic skills refer to courses on music, painting, and ceramics, and those for sporting talents include courses on swimming, roller-skating, and dancing.

This study measures maternal attitudes in child-raising by using variables reflecting the major maternal reason for raising children and maternal most-wanted characteristic for children. In the survey, various reasons for raising children were grouped into the following eight types: following the natural route of human life, longing to see the extension of life, favoring children's loveliness, longing for a child of self and own lover, expecting support from children in old age, obeying elder family members' request, not wanting to abort a child conceived unexpectedly, and others. A mother responding to the survey had to pick one reason among the first seven as her major reason for raising children or picked the last type if her major reason was not included in these seven. In the survey, a mother was also required to pick her most-wanted characteristic for children among the following types: health, filial obedience, happiness, and achievements or popularity.

To probe the links of the major maternal reason for raising children and maternal most-wanted characteristic for children with their behaviors regarding children's health and investments in children's ability, this study utilizes the logit

model and the ordered probit model for multivariate analyses. For each maternal behavior or decision, the logit model is adopted if the behavior or decision is measured as a binary variable, and the ordered probit model is adopted if it is measured as an ordered categorical variable. The behaviors or decisions measured as binary variables are maternal pattern of using prenatal care (1=always following the schedule for receiving prenatal care when carrying the focal child, 0=not always doing so), maternal choice of breastfeeding the focal child (1=breastfeeding the focal child for at least some time, 0=not breastfeeding the focal child at all), and maternal choices of sending the focal child to training courses for improving intellectual capability (1=sending the child to such courses, 0=not doing so), artistic skills (1=sending the child to such courses, 0=not doing so), and sporting talents (1=sending the child to such courses, 0=not doing so). The behaviors or decisions measured as ordered categorical variables are the length of breastfeeding the focal child (0=not breastfeeding the child at all, 1=breastfeeding for less than three months, 2=breastfeeding no less than three months but less than six months, 3=breastfeeding no less than six months), the frequency of giving the focal child nutritional supplements (0=not giving any nutritional supplements, 1=giving nutritional supplements sometimes, 2=giving

nutritional supplements every day), and the frequency of taking the focal child to exercise (0=not taking the child to exercise, 1=taking the child to exercise once a while, 2=taking the child to exercise often).

In these multivariate analyses, the major explanatory variables are the two sets of variables reflecting the major maternal reason for raising children and maternal most-wanted characteristic for children. Among the eight types of reasons for raising children, "longing to see the extension of life," "longing for a child of self and own lover," and "favoring children's loveliness" reflect maternal incentives related to psychological satisfaction, while "expecting support from children in old age" reflects maternal incentives pertaining to economic consideration. In contrast, "obeying elder family members' request" and "not wanting to abort a child conceived unexpectedly" signal that a mother herself did not really want to have children. As to "following the natural route of human life," this reason indicates that a mother lacked strong incentives to have children. In various multivariate analyses, we use a dummy variable to present each of the three types of reasons reflecting psychological satisfaction, but use only one dummy variable to present both the two types reflecting maternal passiveness in making childbearing decisions because few mothers picked these two reasons.

Most mothers picked “following the natural route of human life,” and we use this type as the reference type since it implies neither positive nor negative views regarding childbearing decisions. Since very few mothers picked the reason reflecting economic consideration, we combine this type with the reference type in order to avoid multicollinearity problems in estimation. We also collapse the four categories of children’s characteristics into three (health, happiness, and the others) because the proportion of mothers picking “achievements or popularity” is too small and it is more appropriate to combine this category with “filial obedience” than the other two. In addition to these two sets of variables, each analytical model also controls for the child’s gender and birth order, the mother’s marital status, educational attainment and employment status, and the level of monthly family income.

Results

Maternal attitudes toward child-raising and other sample characteristics

Table 1 reports maternal health and consumption behaviors regarding children's health and ability. As shown in the table, almost all pregnant women used adequate prenatal care. In contrast, only 60% of mothers breastfed their children, and 45% only breastfed for less than three months. Over 45% of mother reported that they often took their children to exercise in the past month, and about 12% never did. The prevalence of feeding children nutritional supplements among these women was lower. Only about 20% of these mothers said that they often fed their children nutritional supplements in the past month, and about a half did not give any in the past month. As to investments in children's ability, although these children were only four years old when their mothers were interviewed, quite a few of them already attended training courses for improving various abilities. In particular, over 20% of them attended courses for improving artistic skills. More than 16% had courses for improving intellectual capability, and around 9% went to training courses for sporting talents.

→ Insert Table 1

Table 2 presents maternal attitudes toward child-raising as well as these children's and mothers' demographic and socioeconomic characteristics. The majority of mothers, 84.3%, reported that they regarded "health" as the most-wanted attribute for their children, and 9.3% picked "filial obedience." Only few chose "happiness," or "achievements or popularity." The most prevalent reason for raising children is "following the natural route of human life;" 45.2% of mothers chose this reason. The proportion of mothers regarding children as the extension of life is 25.3%, 12.3% said that they favored children's loveliness, and 10.1% reported that they longed for a child of self and own lover. Only 2% said that they decided to raise children mainly due to consideration of old-age support, and 5.1% said that they chose to bear children just to follow elder family members' request or to avoid abortion.

→ Insert Table 2

As to demographic and socioeconomic characteristics, there are more boys in the sample, and about a half of children are the first-born. Almost all these mothers were married. The majority of these mothers (93%) had at least high school education, and only 7% had less than high school education. Around 63% of these mothers had paid work when interviewed. The most prevalent

monthly family income level was 40,000-79,999 Taiwan dollars (around US$ 1,200 – 2,400) at the time of interview. Generally speaking, the average educational level and the employment rate of these women appear to be higher than the national average. This is reasonable since these women were urban residents. The ratio of boys to girls is also higher and the family income level is slightly higher for this sample, according to our estimation of the ratio of boys to girls born in 1998, and the family income level for children born in 1998 based on data from the 2001 National Health Interview Survey (conducted by the Department of Health, Taiwan).

The relationships of maternal attitudes toward child-raising with their health and consumption behaviors regarding children's health and ability

Results reported in Tables 3 to 5 show the relationships of maternal attitudes toward child-raising with their health and consumption behaviors regarding children's health and ability. Results reported in Table 3 pertain to maternal behaviors related to child health, and are based on analyses adopting the logit model. Table 4 also presents results related to child health, but these results are

based on analyses adopting the ordered probit model. Table 5 reports results with respect to investments in children's ability.

→ Insert Tables 3 to 5

While almost all women use adequate prenatal care in Taiwan, results from the analyses reveal that mothers picking "health" as the most-wanted characteristic for children have a higher tendency to completely follow the recommended schedule for prenatal care. In contrast, major maternal reason for raising children does not appear to be related to maternal tendency to completely follow the recommended schedule for prenatal care. As to the other behaviors, maternal most-wanted attribute for their children does not emerge as an associative factor, but major maternal reason for raising children does. Mothers picking "longing for a child of self and own lover" as the major reason for raising children are more likely to breastfeed the child and tend to breastfeed for a longer time. Those picking "favoring children's cuteness" tend to feed children nutritional supplements more frequently, and those bearing children because of longing for a child of self and own lover probably also do. Women choosing to bear children just to follow elder family members' request or avoid abortion take children o exercise less frequently. Regarding investments in children's ability,

mothers picking “longing to see the extension of life” as the major reason for raising children have a higher tendency to send the child to training courses for intellectual capability and for artistic skills, and are probably also more likely to send their children to training courses for sporting talents. Mothers choosing to bear a child because wanting a child of self and own lover might also have a higher tendency to send their children to courses for intellectual capability and for sporting talents.

These results also indicate maternal differences in these behaviors or decisions due to socioeconomic status and employment status. For example, women with higher education tend to breastfeed children longer, give children more nutritional supplements, and take children to exercise more often. They also have a higher tendency to send their children to training courses for artistic skills. Women with higher family income are more likely to give children more nutritional supplements, and send children to various training courses. Having a job with pay appears to make mothers breastfeed for a shorter period of time, and might also make mothers less frequently take their children to exercise.

Children’s traits are related to these maternal health and consumption behaviors, too. Children with a birth order of three or higher appear to be in a

less favorable position for accumulating their human capital in early life. For instance, pregnant women tend to use less prenatal care when carrying their third or later children. Children with a birth order of three or higher tend to obtain less nutritional supplements, and have less opportunities to receive training courses for improving various abilities, too. As to gender differences, girls are more likely to attend training courses for artistic skills and for sporting talents than boys.

Discussion

Results from this study support the existence of a linkage of maternal attitudes in child-raising with their behaviors and investments related to children's health and ability. This implies that children whose parents have different views toward offspring face unequal opportunities to accumulate their human capital in early life. As few parents in modern societies choose to have children in order to secure old-age support, a substantial proportion of parents might choose to have children just to follow a path of life that most other people take and do not ponder the meaning of having offspring, and subsequently leave their children in a less favorable position for accumulating human capital than children with parents who have contemplated the meaning of bearing and raising children. Children born to parents who chose to bear children due to social pressures or accidental outcomes of previous intercourses are in an even worse position for accumulating human capital in some circumstances. It is certainly not easy to lessen such disparities soon, since it might be quite difficult to change adults' perspectives on having offspring. It may be more feasible to shape youngsters' views with respect to offspring in human life, and hence construct a future society where such inequalities are minimized. In spite of this, appropriate educational interventions

for parents might still help in gradually decreasing such differences, and issues in this area are worthy of more research.

Generally speaking, thoughts that focus on appreciating children's loveliness and having own children seem to have more positive influences on maternal care related to young children's health. In particular, women who strongly enjoy owning children tend to breastfeed children longer. Such a phenomenon is reasonable since breastfeeding is an intimate interaction between mothers and children, and women with this kind of ideology are very likely to greatly enjoy intimate interactions with own children. In contrast to these maternal behaviors related to child health, maternal investments in children's training courses appear to be positively influenced by thoughts with regard to the symbol of offspring, rather than ideas of having own children or appreciating children's loveliness. These differences are interesting and deserve more research.

Findings with respect to maternal socioeconomic and employment status basically appear to be reasonable. Because maternal education attainment reflects maternal health knowledge to some degree, it is normal that mothers with high education behave more positively in breastfeeding children, giving children nutritional supplements and taking children to exercise. As to utilization of

prenatal care, since the benefits of such care are very well recognized in Taiwan, the role of maternal education in this regard is negligible. It is also reasonable that family income plays a role in consuming children's nutritional supplements and training courses because these consumption behaviors demand substantial financial resource, as mentioned previously. As to maternal employment status, this status reflects maternal time constraint to some degree, and it is thus reasonable that mothers with paid work breastfeed children for a shorter period of time and probably take children to exercise less frequently.

When it comes to gender inequality in accumulating human capital, results from this study do not indicate that girls are in a less favorable position in early life. Although research has shown that Taiwan's society still has sex preference favoring males and this is associated with unbalanced sex ratios in Taiwan in recently years (Poston, 2002), findings from this study suggest that such sex preference does not cause girls to have a disadvantageous position to receive parental investments in their ability, although it substantially affects parental behavior of artificially choosing the gender of offspring. A final point to be made pertains to the role of birth order. Results from the multivariate analyses indicate that children with high birth orders have disadvantage in receiving

parental care and investments that affect their health and ability. This may reflect the fact that parents usually pay less attention to their later children, and such a phenomenon highlights a potential pitfall that parents may pay too little attention when taking care of their younger children. How to reduce inequalities in opportunities for accumulating human capital among children with different parities is certainly also an interesting topic and deserves more exploration.

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Table 1: Maternal health and consumption behaviors regarding children's health and ability

	Distribution in percentage
Behaviors regarding children's health	
Completely following the schedule for prenatal care	97.02
Breastfeeding children	60.04
The length of breastfeeding	
No less than 6 months	9.27
Less than 6 months but no less than 3 months	5.85
Less than 3 months but no less than 1 day	44.91
Never	39.96
The frequency of feeding children nutritional supplements over the past month	
Often	19.53
Once a while	32.13
Never	48.33
The frequency of taking children to exercise over the past month	
Often	46.26
Once a while	42.21
Never	11.52
Investments in children's ability	
Sending children to courses for improving intellectual capability	16.65
Sending children to courses for improving artistic skills	20.97
Sending children to courses for improving sporting talents	9.09

Table 2: Child characteristics, and maternal attitudes in child-raising and demographic/socioeconomic characteristics

	Distribution in percentage
Child characteristic	
Gender of the child	
Male	53.74
Female	46.26
Birth order of the child	
Rank 1	48.96
Rank 2	37.80
Rank 3 or above	13.23
Maternal attitudes in child-raising and demographic/socioeconomic characteristics	
The most wanted attribute for children	
Filial obedience	9.36
Achievement or popularity	2.07
Health	84.34
Happiness	4.23
The major reason for raising children	
Following the natural route of human life	45.18
Wishing to see the extension of life	25.29
Favoring children's cuteness	12.33
Wanting to see a child of self and own lover	10.08
Other reasons	
Wanting to have children support self in old age	1.98
Obeying elder family members' request	2.70
Not wanting to abort a child being conceived unexpectedly	2.43
Maternal marital status	
Currently married	98.02
Not currently married	1.98
Maternal educational level	
< high school	7.02
High school	41.31
> high school	51.67
Maternal employment	
With paid work	63.10
Without paid work	36.90
Average monthly family income (NT$)	
< = 39,999	14.04
40,000 - 79,999	51.40
80,000 - 119,999	25.83
>= 120,000	8.73

Table 3: The relationships of maternal values and attitudes toward raising children with their utilization of prenatal care and decision to breastfeed children

	Prenatal care			Breastfeeding		
	Coef.	Std. Err.	odds ratio	Coef.	Std. Err.	odds ratio
The most wanted attribute for children (reference: filial obedience or achievements or popularity)						
Health	0.9609*	0.4243	2.6140	0.0048	0.2014	1.0049
Happiness	-0.8577	0.6259	0.4242	-0.2324	0.3668	0.7926
The major reason for raising children (reference: following the natural route of human life or wanting to have children support self in old age)						
Wishing to see extension of life	0.3128	0.4661	1.3673	0.2425	0.1594	1.2745
Favoring children's cuteness	-0.6751	0.4483	0.5091	-0.3174	0.2002	0.7280
Wanting own children	0.7501	0.7719	2.1172	0.7723**	0.2417	2.1648
Obeying elder family members' request or avoiding abortion	0.0421	0.7926	1.0430	-0.0990	0.3113	0.9057
Gender of the child (reference group: male)						
Female	0.0398	0.3427	1.0406	0.0322	0.1285	1.0327
Birth order of the child (reference group: rank 1)						
Rank 2	0.5190	0.4267	1.6803	-0.1749	0.1393	0.8396
Rank 3 or above	-0.8892*	0.4225	0.4110	-0.3832∓	0.1993	0.6817
Maternal marital status (reference group: not currently married)						
Currently married	1.3357	0.8280	3.8025	0.4351	0.4593	1.5452
Maternal educational level (reference group: < high school)						
High school	0.2975	0.5900	1.3465	0.6614*	0.2716	1.9375
> high school	-0.1888	0.6245	0.8279	1.4647**	0.2869	4.3262
Maternal employment (reference group: without paid work)						
With paid work	0.2759	0.3598	1.3177	-0.0739	0.1399	0.9288
Average monthly family income (reference group: <=NT$ 39,999)						
40,000 - 79,999	0.2472	0.4701	1.2805	-0.1326	0.2008	0.8758
80,000 - 119,999	0.8439	0.6534	2.3255	-0.0427	0.2409	0.9582
>= 120,000	1.8981∓	1.1422	6.6734	0.0738	0.3072	1.0766
Number of observations		1111			1111	
Log likelihood ratio: $\chi^2(16)$		33.27**			86.64**	

Note: ** $p < 0.01$; * $p < 0.05$; ∓ $p < 0.1$.

Table 4: The relationships of maternal values and attitudes toward raising children with the length of breastfeeding children, and the frequencies of feeding children nutritional supplements and taking children to exercise

	Length of breastfeeding		Frequency of giving nutritional supplements		Frequency of taking children to exercise	
	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.
The most wanted attribute for children (reference: filial obedience or achievements or popularity)						
Health	-0.0059	0.1132	0.1232	0.1210	0.0413	0.1094
Happiness	-0.1178	0.1900	0.1183	0.1891	0.1651	0.2089
The major reason for raising children (reference: following the natural route of human life or wanting to have children support self in old age)						
Wishing to see extension of life	0.1101	0.0822	-0.0189	0.0865	-0.0293	0.0856
Favoring children's cuteness	-0.1997$^{\mp}$	0.1092	0.2927**	0.1085	0.0900	0.1121
Wanting own children	0.3133**	0.1110	0.2037$^{\mp}$	0.1206	0.0969	0.1156
Obeying elder family members' request or avoiding abortion	-0.1152	0.1743	0.0266	0.1737	-0.4094*	0.1734
Gender of the child (reference group: male)						
Female	-0.0062	0.0675	-0.1273$^{\mp}$	0.0704	-0.1049	0.0693
Birth order of the child (reference group: rank 1)						
Rank 2	-0.0305	0.0723	-0.0417	0.0752	0.0395	0.0737
Rank 3 or above	-0.0211	0.1184	-0.4488**	0.1146	-0.0556	0.1138
Maternal marital status (reference group: not currently married)						
Currently married	-0.1551	0.2925	0.1063	0.2542	-0.2883	0.2715
Maternal educational level (reference group: < high school)						
High school	0.3261$^{\mp}$	0.1827	0.4035*	0.1834	0.1963	0.1538
> high school	0.7081**	0.1875	0.6059**	0.1874	0.3892*	0.1597
Maternal employment (reference group: without paid work)						
With paid work	-0.1709*	0.0784	-0.0539	0.0779	-0.1448$^{\mp}$	0.0755
Average monthly family income (reference group: <=NT$ 39,999)						
40,000 - 79,999	-0.0139	0.1196	0.2944*	0.1221	-0.0687	0.1060
80,000 - 119,999	-0.0430	0.1363	0.4687**	0.1397	-0.0354	0.1280
>= 120,000	0.0433	0.1589	0.5259**	0.1651	0.0198	0.1590
Number of observations	1111		1111		1111	
Wald: $\chi^2(16)$	57.35**		87.76**		27.93*	

Note: ** $p < 0.01$; * $p < 0.05$; $^{\mp}$ $p < 0.1$.

Table 5: The relationships of maternal values and attitudes toward raising children with their investments in children's ability

	Training courses for improving intellectual capability			Training courses for improving artistic skills			Training courses for improving sporting talents		
	Coef.	Std. Err.	Odds ratio	Coef.	Std. Err.	Odds ratio	Coef.	Std. Err.	Odds ratio
The most wanted attribute for children (reference: filial obedience or achievements or popularity)									
Health	-0.2287	0.2707	0.7956	-0.2602	0.2600	0.7709	-0.1880	0.3519	0.8286
Happiness	0.3718	0.4244	1.4504	0.2839	0.4121	1.3283	0.0753	0.5625	1.0782
The major reason for raising children (reference: following the natural route of human life or wanting to have children support self in old age)									
Wishing to see extension of life	0.4275 *	0.2004	1.5335	0.5059 **	0.1878	1.6585	0.4640 ∓	0.2631	1.5905
Favoring children's cuteness	0.2185	0.2619	1.2443	0.2953	0.2406	1.3435	0.3812	0.3308	1.4641
Wanting own children	0.4703 ∓	0.2699	1.6004	-0.0319	0.2796	0.9686	0.5852 ∓	0.3424	1.7953
Obeying elder family members' request or avoiding abortion	-0.1038	0.4627	0.9014	0.3159	0.3993	1.3715	-0.1594	0.6309	0.8526
Gender of the child (reference group: male)									
Female	0.1664	0.1657	1.1811	0.4746 **	0.1567	1.6073	0.8655 **	0.2217	2.3763
Birth order of the child (reference group: rank 1)									
Rank 2	-0.1906	0.1761	0.8265	-0.1695	0.1679	0.8441	-0.0110	0.2255	0.9891
Rank 3 or above	-1.0300 **	0.3396	0.3570	-0.6536 *	0.2871	0.5201	-1.0784 *	0.4860	0.3401
Maternal marital status (reference group: not currently married)									
Currently married	-0.4209	0.5878	0.6564	-0.4173	0.6245	0.6588	-0.3927	0.7941	0.6752

Table 5 (continued)

	training courses for improving intellectual capability			training courses for improving artistic skills			training courses for improving sporting talents		
	Coeff.	std. err.	odd sratio	Coeff.	std. err.	odd sratio	Coeff.	std. err.	odd sratio
Maternal educational level (reference group: < high school)									
High school	0.4213	0.5022	1.5239	1.1596	0.7443	3.1887	0.0708	0.6509	1.0734
> high school	0.6436	0.5100	1.9033	1.7261 *	0.7451	5.6187	0.4261	0.6577	1.5312
Maternal employment (reference group: without paid work)									
With paid work	-0.0765	0.1878	0.9263	0.1225	0.1814	1.1304	-0.1961	0.2445	0.8220
Average monthly family income (reference group: <=NT$39,999)									
40,000 - 7,9999	0.5925 ∓	0.3427	1.8085	1.6209 **	0.4811	5.0576	0.8315	0.5086	2.2967
80,000 - 119,999	0.9310 *	0.3763	2.5369	2.0376 **	0.5006	7.6723	1.2803 *	0.5444	3.5977
>= 120,000	1.1969 **	0.4189	3.3099	2.3498 **	0.5286	10.4834	1.3109 *	0.5990	3.7095
Number of observations		1111			1111			1111	
Log likelihood ratio: $\chi^2(16)$		49.18 **			121.55 **			46.84 **	

Note: ** $p < 0.01$; * $p < 0.05$; ∓ $p < 0.1$.