Study on the effect of parents' migrating on the education of the rural left-behind children

——empirical analysis based on rural household survey in two provinces

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Abstract

With the increasing transfer of rural labor, the problems of the left-behind children attract extensive attention. This paper is based on a large sample random survey in Jiangxi Province and Anhui Province's primary and high school in China, researching students and their guardians, head teachers, headmasters. The research applied a combination of quantitative and qualitative methods to study on the effect of parents' migrant working on the education of the rural left-behind children in details.

The study found that the effect changes with learning stages and subjects. The supervision of parents and teachers is helpful to the left-behind children at primary school stage, while it cannot show significant help to those at junior high school stage, which may even have the opposite effect. The number of siblings and living on campus do not have a negative effect on children's study, which even have a positive effect in some respects. Children's own prospect of their education have a significant positive effect on their learning performance, while parents' prospect only have a positive effect on learning performance of the left-behind children at junior high school stage.

Keyword: left-behind children; education; migrant working

I Introduction

Since China adopted reform and opening up policy, the migration and flow of the population have gradually become more and more frequent, and large amounts of rural labor swarmed into cities, speeding up the progress of China's industrialization and urbanization. Meanwhile, most migrant workers cannot meet the needs of their children's study in city while they themselves work in city because of the restriction of rural labor quality, career stability, national household registration system and etc. So they can only leave their children at home to study, which cause the arising of left-behind children problem.

According to the data published on the first "China's rural left-behind children social support action seminar" held in Zhengzhou in 2005, the number of China's rural left-behind children has reached 20 million, and children of 14 years and below accounted for 86.5%. According to a survey in 2008 by the All-China Women's Federation, the number of rural left-behind children under the age of 17 was about 58 million and the scale of rural left-behind children will be further expanded with the further increase of floating population.(Li Shantong, Xu Zhaoyuan, 2008)

Children ought to live with parents, the effect of parents on children's emotion cannot be replaced by other people. If parents cannot stay with their children for a long time because of their migrant work, it not only has a negative effect on children's physical and mental growth but also effects the learning performance of left-behind children, even causing dropout in some cases, because left-behind children have to do more housework and farm work. (Amuedo-Dorantes and Pozo, 2006; Kandel and Kao, 2001)

But parents' migrant working do have some benefits. According to international scholars' study, since parents who moving out for work can remit home, the remittances can alleviate the pressure of family economy, and significantly reduce dropout rates of left-behind children and time to do farm work, and increase the chances of being educated. Meanwhile, as part of the remittances are used to improve children's life quality and health condition, learning quality of left-behind children will be improved. (Borraz, 2005; Bryant, 2005; Cox Edwards and Ureta, 2003; Kandel and Kao, 2001; López, 2006; Yang, 2004) This conclusion not only apply to the remittance of international migration, but also be verified in the domestic study of left-behind

children. (Hu Feng, Li Shantong, 2010)

Chinese scholars took lots of investigations and researches on the education problem of rural left-behind children, and got different research conclusions. They can be basically summarized as the following three points of view:

The first point of view is that parents' migrant working have a significant negative effect on the learning performance of left-behind children. This is because parents' migrant working may increase the labor burden of left-behind children and the children can't get effective guidance in learning as a result (Lin Hong, 2003; Lv Shaoqing, 2006; Ye Jingzhong etc., 2006). Parents' migrant working may also reduce the learning enthusiasm of left-behind children and cause a decline in scores (Zhang Junliang, Ma Xiaolei, 2010). In some areas, left-behind family almost completely lost educational function, so the education quality of left-behind children cannot be guaranteed (Dai Weidong, 2009).

The second point of view is that after parents go out for work, there is no significant differences of understanding of their own learning performance and leaning interest between rural left-behind children and non-left-behind children (Wu Ni, 2004; Shu Yan, 2008).

The last point of view is that parents' migrant working has a positive effect on learning performance of part of the left-behind children while it has a negative effect on that of other left-behind children. The dual character of the effect may has something to do with children's own specialties. (Zhang Xianhong, 2009)

But we find that there are not much empirical analysis on left-behind children's education effect. The only empirical analysis just does the comparison among left-behind children or ignores the effect of family and school on children's learning performance when comparing the educational differences between left-behind children and non-left-behind children because of the limit of sample size and investigation range.

This passage is based on a large sample random survey and compares the educational differences between left-behind children and non-left-behind children. It not only add the effect of family, teacher and school, but also subdivide left-behind children's educational performance into overall performance and performance in Chinese, maths,

English. This passage tries to study the effect of parents' migrant working on left-behind children's education more accurately, and explains the different conclusions of different researchers for the educational effect of left-behind children.

II Data & Model

1. Data sources

The data is from a large sample random survey of the students and their guardians taken in Jiangxi Province and Anhui Province from April to July in 2010. The reason for choosing these two provinces is that they are typical areas of Chinese left-behind children problem according to lots of researches. Meanwhile, according to prior information of other researchers, there are significant differences in mothers' migrant working between Jiangxi Province and Anhui Province, and because the two provinces are both in the central region of China and per capita income level is similar, we choose the two provinces as contrast group.

On sampling method, the survey applied a combination of stratified sampling and random sampling. Firstly, divide all the counties into high income ones and low income ones in accordance with per capita income level, then select a high income county and a low income county in each province randomly. Divide the towns into high income ones and low income ones using the same method, then select a high income town and a low income town in each county randomly.

Then choose all the schools in the town, select all the classes of grade 4, 6, 8, pick out 20 samples in each class to survey. Obtain the condition of left-behind children in class before picking from priori information, estimate the proportion of selected left-behind children and non-left-behind ones before picking, to guarantee that the proportion of left-behind children in the 20 samples is equal to that in the whole class.

In the questionnaire, we asked children's personal information, learning performance, discipline performance, environment of family & school, class atmosphere, body health conditions, daily performance, the way parents treat them, learning conditions, psychological stress and children's opinions on parents' migrant working, etc. At the same time, we investigate the guardians, head teachers of class, headmasters of school, village cadres in the village and migrant parents of the children being surveyed through

questionnaire or telephone, and obtain some relevant data about the children.

2. Model and Framework of Estimate

This passage uses Ordered Probit Model as an analysis tool.

Its empirical foundation model is as follows:

$$y^* = \beta X + e \qquad e|X \sim N(0,1)$$

y^* is a latent variable that cannot be observed directly.

y is an ordered categorical variable that can be obtained from observed value directly.

In the current situation of this passage, we will set Ordered Probit Model as follows:

$$PER_i = \beta_0 + \beta_1 onlynofather_i + \beta_2 onlynofather_i + \beta_2 bothno_i + \beta_3 X_i + \varepsilon_i$$

In this model, y^* is child's real grade, and y (performance) is the learning performance evaluation of the ith child from head teacher, which is divided into 5 levels:

PER$_i$=1, means very bad, if $y^* < p_1$

PER$_i$=2, means bad, if $p_1 \leq y^* < p_2$

PER$_i$=3, means not bad, if $p_2 \leq y^* < p_3$

PER$_i$=4, means good, if $p_3 \leq y^* < p_4$

PER$_i$=5, means very good, if $y^* \geq p_4$

$p_i(i = 1,2,3,4)$ represent the threshold value of the real grade of children surveyed.

PER can be represented by any of the four variables: the overall evaluation on learning performance of child surveyed from the head teacher, the Chinese level the head teacher think the child surveyed is in class, the maths level the head teacher think the child surveyed is in class, the English level the head teacher think the child surveyed is in class. Onlynofather=1 means that only father goes out to work with mother at home. It is the same with the definition of mother. Bothno=1 means parents both go out to work. $\beta_1, \beta_2, \beta_3$ measure the effect on children's education of father out only, mother out only and parents out both.

X is a series of control variables. In previous similar research, the control variables are divided into left-behind children related variables, left-behind family related variables, migrant parents related variables (Hanson and Woodruff, 2003; McKenzie

and Rapoport, 2006). Those older girls in rural left-behind children tend to have a better grade because they tend to be more discipline (Li Qingfeng, 2002).

This study not only researches the differences among left-behind children, but also tries to find the reason why there are differences between left-behind children and non-left-behind children. So on the basis of previous studies, we divide control variables into 4 aspects.

The first is children's personal characteristics, including gender, age, whether attended preschool before, whether to live on campus, where to sit in the classroom and the number of siblings, etc.

The second is the children's family characteristics, including mother's level of education, father's level of education, family income, parents' educational prospect of children, whether guardians give extra homework, frequency guardians check the homework and frequency guardians ask the school conditions, etc.

The third is the children's class characteristics, including the amount of homework assigned by the teachers, whether the teacher have a heart-to-heart talk with the child, whether the teacher are absent from class, etc.

The fourth is the children's school characteristics, including whether the school is a key school, the proportion of ethnic minority, student-faculty ratios, etc.

Detailed in the following table:

Variable	Variable Definition	AVG	Standard Deviation
Dependent Variable			
Overall evaluation on learning performance		3.46	1.05
Chinese level in class	1=very bad 2=bad	3.51	1.05
Maths level in class	3=not bad 4=good	3.41	1.19
English level in class	5=very good	3.27	1.14
Independent variable			
Whether father go out only		0.27	0.44
Whether mother go out only	0=no 1=yes	0.05	0.22
Whether parents go out both		0.33	0.47
Children's control variable			
Gender	0=female 1=male	0.55	0.50
Kindergartens & preschools	0=no 1=yes	0.70	0.46
Age	age	12.17	1.92

Variable	Description	Mean	SD
Grade that want to reach	1=primary;2=junior high;3=senior high;4=technical school;5=junior college;6=general undergraduate;7=key undergraduate;8=graduate or higher	6.47	1.64
Whether to live on campus	0=no 1=yes	0.78	0.67
Number of siblings	Number of siblings	0.45	0.50
Family's control variable			
Family income	Family income	32361.52	38528.36
Mother's years of education	Mother's years of education	7.29	2.92
Father's years of education	Father's years of education	5.06	3.25
Educational prospect of children (graduate from…)	1=primary;2=junior high;3=senior high;4=technical school;5=junior college;6=general undergraduate;7=key undergraduate;8=graduate or higher	7.12	1.15
Whether give extra homework	1=never;2=sometimes;3=often;4=almost every day	1.40	0.76
Whether check children's homework frequently	0=no 1=yes	0.55	0.50
Whether ask conditions at school frequently	0=no 1=yes	0.85	0.36
Whether have a desk for study only	0=no 1=yes	0.64	0.48
Books relevant to study	Do not include textbooks	6.92	9.28
Teacher's control variable			
The amount of homework assigned	1=very little; 2=little; 3=not much; 4=much; 5=very much	2.76	0.89
Whether have a heart-to-heart talk with children	1=never 2=sometimes 3=often	1.70	0.59
Whether absent from class	1=never 2=sometimes 3=often	1.46	0.51
School's control variable			
The type of school	1=primary school; 2=middle school	0.42	0.49
Whether key school	0=no 1=yes	1.62	0.48
Times to hold parents meeting	Times	2.25	1.22
Proportion of ethnic minority	Percentage %	2.72	3.99
Funds to help left-behind children	0=no 1=yes	0.09	0.02
Student-faculty ratios	Percentage %	0.52	0.50
Teaching environment at school	Graded by: 1.library; 2. Computer Room;3.P&C Lab	2.44	0.77

3.   Statistical description

There are 625 left-behind children in all 985 samples, accounting for 65.45% of the

total sample. There are 347 boys and 278 girls in these left-behind children with an average age of 12.13. There are 226 left-behind children samples out of 340 total samples in grade 4. There are 216 left-behind children samples out of 340 total samples in grade 6. There are 183 left-behind children samples out of 305 total samples in grade 8. The specific circumstances are in Table 1.

Table 1   Number & Proportion of Left-behind Children in Each Grade

Grade	Sample Num.	Left-behind Children's Num.	Left-behind Children's Prop.
4	340	226	66.47%
6	340	216	63.53%
8	305	183	60%

Source：Author Survey & Organize

The questionnaire divided the cases of parents' migrant into 3 types: parents go out both, father go out with mother stay at home, mother go out with father stay at home, research results are in Table 2. Nearly half of the left-behind children's parents both go out, and the children are totally taken charge of their guardians. The proportion of mother going out is far more less than that of father going out. It suggests that the main social division of rural men and women is still evident. Men work hard to serve the family while women take the responsibility of raising and educating.

Table 2 Migrant Cases of Left-behind Children's Parents

Cases of parents' migrant	Number	Ratio
Father go out only	260	41.60%
Mother go out only	46	7.36%
Parents go out both	319	51.04%

Source：Author Survey & Organize

Rural left-behind children's academic performance and performance in class

This survey uses the method of teacher report to determine children's grades, and the teachers are asked to rank the grade of left-behind children's Chinese, maths and English from 1 to 5. This grade evaluation method not only avoids using absolute scores, which will cause incommensurability between different schools and different regions,

but also avoids determining left-behind children's performance by a single exam to make the evaluation more comprehensive and scientific. Meanwhile, it can greatly reduce the untrue information that may exists in parents' report and self-report by using the method of head teacher report.

In the research, we try to understand left-behind children's learning performance from the head teachers trough 3 aspects of whether they ever played truant or skipped classes, whether their attention is concentrated in class and whether their homework can be finished on time. From the point of basic situation, as the left-behind children get older, their learning performances get better, the conditions of class-skipping, inattention and finishing homework not on time are obviously improved. For example, on the index of finishing homework on time, only 70.54% of the 4th grade students can finish homework on time while the proportion greatly increases to 87.22% in grade 8.

III Empirical Results & Analysis

   1. Sample of all the children

     Table 3.1.1

Variable	(1) Overall Performance	(2) Chinese	(3) Maths	(4) English
Father go out only	-0.0597	0.00298	0.103	0.119
	(0.196)	(0.196)	(0.192)	(0.199)
Mother go out only	0.00223	-0.305	-0.0131	-0.111
	(0.436)	(0.414)	(0.444)	(0.396)
Parents go out both	0.165	0.0939	0.0579	0.269
	(0.208)	(0.210)	(0.199)	(0.201)
Gender	-0.138	-0.534***	0.359**	-0.670***
	(0.157)	(0.156)	(0.157)	(0.156)
Kindergarten	0.119	-0.0364	0.0635	-0.0459
	(0.182)	(0.183)	(0.175)	(0.185)
Age of the child	-0.0641	-0.120**	-0.111**	-0.0496
	(0.0553)	(0.0592)	(0.0544)	(0.0516)
Educational prospect of children	0.275***	0.229***	0.234***	0.205***
	(0.0513)	(0.0492)	(0.0499)	(0.0501)
Live on campus	0.196	0.215	0.151	0.0646
	(0.183)	(0.191)	(0.177)	(0.178)
Number of siblings	0.0964	0.107	0.0872	0.137
	(0.121)	(0.119)	(0.117)	(0.113)

Family income	5.01e-07	-4.76e-07	-2.88e-07	1.54e-06
	(2.27e-06)	(2.14e-06)	(1.62e-06)	(2.07e-06)
Father's educational years	0.0132	0.0194	0.0240	0.0172
	(0.0305)	(0.0302)	(0.0287)	(0.0267)
Mother's educational years	0.0215	0.0425	0.0369	0.0127
	(0.0295)	(0.0289)	(0.0279)	(0.0265)
Parents' educational prospect	0.136**	0.0973	0.125*	0.131**
	(0.0645)	(0.0686)	(0.0735)	(0.0643)
Extra homework	-0.133	-0.0535	-0.0977	0.0109
	(0.100)	(0.101)	(0.0941)	(0.0960)
Checking homework	0.217	0.0315	0.241	0.154
	(0.165)	(0.162)	(0.169)	(0.166)
Asking school situation	0.232	0.0793	-0.00970	0.00290
	(0.225)	(0.222)	(0.214)	(0.224)
Desks for study only	-0.171	-0.365**	-0.204	-0.196
	(0.164)	(0.165)	(0.158)	(0.164)
Books relevant to study	0.0173**	0.0178**	0.0194**	0.00660
	(0.00723)	(0.00877)	(0.00847)	(0.00684)
Talk between teachers and students	0.233*	0.282**	0.329**	0.457***
	(0.131)	(0.136)	(0.133)	(0.142)
Teacher's absent from school	3.44e-05	-0.191	-0.0703	0.0192
	(0.151)	(0.151)	(0.149)	(0.153)
School type	-0.105	-0.190	-0.361	-0.602*
	(0.409)	(0.389)	(0.368)	(0.355)
Key school	-0.209	-0.145	0.232	-0.585***
	(0.215)	(0.214)	(0.211)	(0.224)
Number of parent meeting last year	-0.0370	0.00282	-0.0198	-0.000527
	(0.0932)	(0.0796)	(0.0873)	(0.0762)
Minority percentage	-0.00545	0.0240	-0.0365	0.0503*
	(0.0224)	(0.0231)	(0.0236)	(0.0264)
Student-faculty ratio	5.921	12.77***	5.573	11.87*
	(4.903)	(4.857)	(5.016)	(6.060)
Funds for left-behind children	0.0997	-0.290	-0.219	-0.376
	(0.243)	(0.222)	(0.235)	(0.253)
Educational environment at school	-0.0428	0.0193	0.0726	0.318*
	(0.210)	(0.203)	(0.216)	(0.186)
Number of variables	624	624	624	624

After a robust ologit regression, we get results reported by stata12 in Table 3.1.1.

1, 2, 3, 4 are regressions when explained variable is overall performance, Chinese performance, maths performance and English performance. Contrary to our

expectations, from the point of the total sample, it seems to have no significant effect of parents' migrant working on left-behind children's study. The reason is possibly that although parents have more effect and help on children's life or study comparing with other guardians, parents who stay at home do not have extra time and ability to care for children's life and study because they have to do lots of family labor and farm work. Thus there is no significant difference between left-behind children and children with parents at home. Certainly, because it has differences with expected results, we will inspect conclusion's robustness according to learning stages.

Considering the variable of gender, we can find that it has no significant effect on children's overall performance, while it has a positive effect on maths performance and a negative effect on Chinese and English performance. On the basis of the definition of gender we give, boys are better at maths while girls are better at Chinese and English, which is in conformity with our daily concept. Certainly, there are foreign scholars think it is an adverse effect of stereotype. But it's not our main study direction, so we don't discuss more in the passage.

Meanwhile, the age of children shows significant negative effect in Chinese and maths aspects. We think the reason is as children grow, their study time become less because they have to do more family labor and farm work. At the same time, the age of children have no significant effect on English performance, which is probably because the English learned in primary and junior high middle school is easy.

The regression shows that parents' educational prospect of children have a significant positive effect on children's learning performance. But the effect only shows in maths and English performance while the effect on Chinese performance is not significant. The reason is probably that family tend to increase spending on children's maths and English learning and ignore Chinese to some extent when parents have a high educational prospect. Children's own educational prospect have a significant effect on all the subjects observed.

Number of books relevant to study at home performs significantly in Chines, maths and overall performance, but the effect is not significant in English performance. This is possibly because the books parents bought are Chinese copies, most of which are

workbooks, so the books at home cannot help children's English learning directly.

The frequency that teachers have heart-to-heart talks with children have a significant effect on all the four explained variable. Whether parents go out to work or stay at home, they have a limited guard capability. Especially when there are lots of housework and farm works, teachers' concern level may have effect more on children's learning performance.

After analyzing the total sample, we do not get much information. Then we'll take a further research on the effect of parents' migrant working on left-behind children's learning performance according to the learning stages.

2. Regression according to Learning Stages

2.1 Primary School

Variable	(1) Overall Performance	(2) Chinese	(3) Maths	(4) English
Father go out only	-0.886***	-0.500	-0.586*	-0.465
	(0.328)	(0.328)	(0.327)	(0.325)
Mother go out only	-0.710	-0.897	-0.936	-0.556
	(0.936)	(0.769)	(0.952)	(0.716)
Parents go out both	-0.237	0.104	-0.306	-0.112
	(0.353)	(0.348)	(0.356)	(0.347)
Gender	0.304	-0.235	0.444	-0.332
	(0.295)	(0.284)	(0.296)	(0.281)
Kindergarten	0.286	-0.0488	0.0325	0.242
	(0.366)	(0.347)	(0.359)	(0.342)
Age of the child	-0.0377	-0.0341	-0.0539	0.0443
	(0.103)	(0.118)	(0.0906)	(0.0918)
Educational prospect of children	0.298***	0.182**	0.214***	0.136*
	(0.0815)	(0.0838)	(0.0801)	(0.0812)
Live on campus	0.768*	0.198	0.335	-0.0538
	(0.407)	(0.392)	(0.378)	(0.359)
Number of siblings	0.290	0.554**	0.115	0.211
	(0.261)	(0.235)	(0.242)	(0.201)
Family income	2.42e-07	-1.80e-06	6.51e-07	-2.27e-07
	(3.05e-06)	(2.07e-06)	(2.13e-06)	(2.22e-06)
Father's educational years	0.102*	0.0618	0.0296	0.0117
	(0.0535)	(0.0509)	(0.0486)	(0.0464)
Mother's educational years	0.0187	0.0617	0.0883*	0.0708*
	(0.0510)	(0.0481)	(0.0476)	(0.0424)

Parents' educational prospect	0.155	0.0664	-0.0693	0.0236
	(0.130)	(0.137)	(0.142)	(0.149)
Extra homework	0.00893	0.0755	-0.0280	0.0374
	(0.146)	(0.157)	(0.147)	(0.153)
Checking homework	0.443	0.279	0.525*	0.452
	(0.285)	(0.282)	(0.290)	(0.282)
Asking school situation	-0.169	-0.443	-0.162	-0.348
	(0.370)	(0.385)	(0.366)	(0.345)
Desks for study only	-0.0514	0.199	0.176	0.292
	(0.282)	(0.289)	(0.273)	(0.293)
Books relevant to study	0.0281**	0.0236*	0.0258**	0.0109
	(0.0120)	(0.0133)	(0.0108)	(0.00901)
Talk between teachers and students	0.243	0.340	0.272	0.573**
	(0.237)	(0.221)	(0.222)	(0.244)
Teacher's absent from school	0.00496	-0.132	-0.129	0.0974
	(0.263)	(0.276)	(0.264)	(0.274)
Key school	-0.398	-0.119	0.194	-0.477
	(0.352)	(0.362)	(0.347)	(0.351)
Number of parent meeting last year	0.115	0.0524	0.129	0.0564
	(0.122)	(0.109)	(0.130)	(0.0929)
Minority percentage	0.0154	0.0437	-0.0357	0.0638*
	(0.0322)	(0.0344)	(0.0354)	(0.0369)
Student-faculty ratio	12.76*	20.18***	13.36*	17.71**
	(7.353)	(7.130)	(8.081)	(8.232)
Funds for left-behind children	0.644*	-0.0496	0.310	-0.112
	(0.380)	(0.324)	(0.385)	(0.362)
Educational environment at school	0.0625	-0.0680	0.129	0.460*
	(0.279)	(0.279)	(0.304)	(0.265)
Number of variables	235	235	235	235

From the robust regression of learning performance of the left-behind children in primary stage, we can find that father's migrant working has a significant negative effect on left-behind children's learning performance while the performance has no significant connection with whether mother go out to work or whether the guardian is parent. Among the subject performances, father's migrant working only have a significant effect on maths performance and shows no significant effect on Chinese and English performance. We assume that this is because father tend to play the role of children's learning supervisor at home. Comparing with Chinese and English learning, maths needs more rigid training, so family's supervision strength on children's study may decline if father go out to work, which effect children's maths performance. The

reason why father's migrant working has a significant effect on the overall performance but has no significant effect on Chinese and English is that although the decline of supervision strength may have little effect on Chinese and English learning, it may reduce the child's learning enthusiasm and influence learning performance, as a result, the teacher will give a low evaluation of children's overall learning conditions.

Comparing with the total sample regression, age and gender do not have a significant effect on learning performance in the regression of sample at primary school stage. At this time, differences between boys' grade and girls' grade do not come into being, and since the children are young, they cannot afford too much housework and farm work in the family, so they don't have the problem of reducing learning time as age increases.

Like the condition of the total sample, children's own educational prospect has a significant positive effect on their learning performance. But parents' educational prospect do not have a significant effect. Maybe it is because the children are very young, so there is no direct connection with parents' educational prospect and investment.

Whether children live on campus and father's educational level both have a significant positive effect on children's overall learning performance while they show a little help for specific grades. Mother's educational level doesn't have a significant effect on overall performance and Chinese performance, but it significantly affects children's maths and English performance, which is the same with researches aboard.

The frequency of parents' checking homework has a significant positive effect on children's maths performance, which verifies that father's going out for work has a significant negative effect on children's maths performance because generally father plays the role of supervisor in family.

Relative to the total sample, student-faculty ratios show significant positive effect in all the four explained variables in the regression of primary school sample. It shows that the influence of teacher on children in primary stage is greater than that in the whole sample.

2.2 Junior High School

	(1)	(2)	(3)	(4)

Variable	Overall Performance	Chinese	Maths	English
Father go out only	0.406	0.318	0.613**	0.428
	(0.285)	(0.270)	(0.278)	(0.287)
Mother go out only	0.226	-0.0719	0.350	0.118
	(0.486)	(0.470)	(0.500)	(0.477)
Parents go out both	0.389	0.0986	0.339	0.462*
	(0.278)	(0.283)	(0.256)	(0.271)
Gender	-0.369*	-0.749***	0.336*	-0.878***
	(0.200)	(0.199)	(0.196)	(0.196)
Kindergarten	0.0546	-0.0487	0.0882	-0.134
	(0.238)	(0.236)	(0.228)	(0.240)
Age of the child	-0.101	-0.195***	-0.150**	-0.113*
	(0.0732)	(0.0728)	(0.0734)	(0.0686)
Educational prospect of children	0.298***	0.290***	0.286***	0.252***
	(0.0680)	(0.0635)	(0.0695)	(0.0625)
Live on campus	0.0727	0.483*	-0.0441	0.352
	(0.292)	(0.289)	(0.267)	(0.275)
Number of siblings	0.00767	-0.170	0.0172	0.0397
	(0.136)	(0.142)	(0.145)	(0.142)
Family income	3.51e-06	1.61e-06	-8.71e-07	4.10e-06
	(4.00e-06)	(4.01e-06)	(2.58e-06)	(3.08e-06)
Father's educational years	-0.0267	-0.00833	0.0141	0.00386
	(0.0376)	(0.0396)	(0.0372)	(0.0336)
Mother's educational years	0.0265	0.0669*	0.0376	0.0227
	(0.0392)	(0.0391)	(0.0382)	(0.0368)
Parents' educational prospect	0.136*	0.132*	0.236***	0.204***
	(0.0798)	(0.0793)	(0.0882)	(0.0752)
Extra homework	-0.276*	-0.197	-0.116	0.000728
	(0.153)	(0.132)	(0.137)	(0.142)
Checking homework	0.0688	-0.234	-0.000398	-0.0682
	(0.219)	(0.216)	(0.229)	(0.224)
Asking school situation	0.381	0.407	0.124	0.206
	(0.288)	(0.298)	(0.292)	(0.300)
Desks for study only	-0.191	-0.670***	-0.372*	-0.439**
	(0.219)	(0.216)	(0.213)	(0.220)
Books relevant to study	0.00929	0.0129	0.0200	0.00501
	(0.0104)	(0.0123)	(0.0149)	(0.0122)
Talk between teachers and students	0.123	0.244	0.237	0.410**
	(0.175)	(0.179)	(0.186)	(0.179)
Teacher's absent from school	-0.0630	-0.247	-0.0613	0.0101
	(0.201)	(0.194)	(0.196)	(0.198)
Key school	-0.776	0.0459	-0.418	-0.348

	(0.524)	(0.525)	(0.488)	(0.569)
Number of parent meeting last year	0.304	-0.0645	0.0510	-0.137
	(0.291)	(0.302)	(0.275)	(0.310)
Minority percentage	-0.0334	0.00309	0.0197	0.0236
	(0.0500)	(0.0498)	(0.0484)	(0.0508)
Student-faculty ratio	13.91	4.773	16.43	14.41
	(10.90)	(10.24)	(10.05)	(11.83)
Funds for left-behind children	-0.907*	-0.268	-1.331**	-0.595
	(0.524)	(0.535)	(0.517)	(0.576)
Educational environment at school	1.108	0.374	1.484**	0.132
	(0.747)	(0.768)	(0.736)	(0.793)
Number of variables	389	389	389	389

In the junior high school sample, father's migrant working has a significant positive effect on children's maths. We assume that when children are in junior high school, their own learning motivation is more important in their study. So much too intervene on children's study may cause opposite effect. This point of view is verified by the fact that children's overall learning performance gets worse when parents assign extra homework.

Next, considering the variable of gender, we can find that gender has a significant negative effect on overall learning performance, a positive effect on maths performance, a negative effect on Chinese and English performance. According to the definition of gender we give, boys are better at maths while girls are better at Chinese and English.

Meanwhile, the age of children shows significant negative effect on Chinese, maths and English. We assume that as children grow up gradually, the proportion of children doing housework and farm work will gradually increases, which shorten children's learning time. The reason why there isn't a huge influence on English performance in the total sample ought to be that English learned in primary school is easy, as a result of which it is basically determined by the study in class and is not influenced obviously by the decline of learning time.

Besides children's own educational prospect, parents' educational prospect on children's learning performance also has a significant positive effect.

IV Conclusions and Policy Recommendations

This study draws the following results:

1.   The effect of parents' migrant working on left-behind children's education varies as learning stage and subjects change. Father's migrant working has a significant negative effect on overall performance and maths performance of children in primary stage, and has a significant positive effect on maths performance of children in junior high school stage. That parents both going out for work has a significant positive effect on English performance of children in junior high school stage.

2.   Comparing the effect of parents' assigning extra homework, school's additional funding for left-behind children and student-faculty ratio on learning performance of children in different learning stages, we can find that children at primary school stage need supervision of parents and teachers more while the supervision shows no obvious help and even may cause opposite effect.

3.   Contrary to results of other researches, we find in this research that it doesn't show negative effect on children's learning, even shows positive effect in some aspects. Children's own educational prospect has a significant positive effect on their learning performance while parents' educational prospect only has a positive effect on learning performance of children in junior high school stage. It can effectively improve children's learning performance if teachers take heart-to-heart talks with children, which can make up the lack of concern to some extend when parents go out for work.

According to the results, we make following policy recommendation:

1.   Parents of left-behind children need to pay more attention on not only their study but also their mental health. Especially for the rural left-behind children in puberty, their parents should give them more care in mental aspect and avoid giving excessive supervision and pressure. Guardians should take on their duty. Especially for the guardians of children in primary school stage, they should perform more duty of supervision on children's study.

2.   Teachers should give more care of rural left-behind children and communicate with them more often to recover their emotion absence caused by parents' migrant working. Meanwhile, teachers should promote their professional quality, guarantee the attendance proportion and the quality of class teaching, guide the students to help each other in study and life and make up the loss in education quality caused by parents'

migrant working.

3.   Each school should increase inputs on the software and hardware facilities of the school, employ the relevant psychological counselors, guide children's psychological conditions and prevent possible emergency situations. The local government and education departments should also increase funding for rural schools, improve the school conditions and quality and provide a better learning and living environment for the rural left-behind children.

4.   Ultimately, the problem of left-behind children is the problem of revenue shortfall when rural labor work in local area and the problem of education quality that cannot be guaranteed. To solve the problem fundamentally, we need to start from two aspects: Firstly, the local government should vigorously develop the local economy, increase the income of local farmers, thus lower the income gap between urban and rural areas and reduce the number of migrants. Secondly, the country should resolve estrangement between household registration system and barriers of education system and health care system caused by household registration system as soon as possible to guarantee life and education quality of children of migrant workers.

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