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The Impact of Parental Entrepreneurship on Children's Health

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Abstract

Children's health has always been a concern, under the background of a new wave of entrepreneurship, this paper uses China health and nutrition survey (CHNS) data, selects the age of the child height ratio (HAZ) score to measure children's health, the OLS regression model, the treatment effect model and tendency to score matching (PSM), and other methods to investigate the influence of parents entrepreneurship for children's health. The study found that at least one parent business, under the condition of children's health is relatively low, the result is in step with the result of whether parents start a business. In addition, there are gender differences in children's health; only children are in better health. The health endowment of parents also has an impact on children's health. This article from the perspective of parents entrepreneurship researches entrepreneurship influence on children's health, there are two main mechanisms, the first is money: it brings the income that is beneficial to children's health; this article examines the entrepreneurship that can bring income premium; estimation results show that the venture has a significant positive effect on monthly income. The second is time: entrepreneurship to reduce the harm to children's health care time; estimation results show that the entrepreneurial significantly reduces the time for children's care; two mechanisms are negative; there is a relation of offsetting each other; parents start-ups do significantly reduce the children's health level.

Keywords

Entrepreneurship, Children's Health, PSM

1. Introduction

Children's health is an important criterion to measure economic and social development and human development, and it is directly related to the quality of

future labor. The importance of child care lies not only in its direct impact on the development of children, but also in its indirect impact on children's health through influencing the labor supply or consumption decisions of the family [1], and by analyzing and studying the health of children, and identifying the comprehensive factors that affect their improvement or decline, not only to improve the overall population, more to improve social and economic strength. 2015 Government Work Report proposed: "Public entrepreneurship, people innovation." In furthering the supply side, structural reform and the comprehensive implementation of innovation-driven development strategy speed up the transformation of new and old kinetic energy, and strive to revitalize the real economy; we must adhere to the "integration, synergy, sharing" to promote public entrepreneurship; the deep development of the great background of innovation, family employment model will be greatly affected; entrepreneurial behavior from a macro can enhance economic vitality, bring innovation, increase the economic total; from the micro-level, to the family unit, can increase family income, improve working time flexibility; from the perspective of family members, entrepreneurship will sacrifice the time spent together, affect the care of children, not conducive to the growth of the next generation.

Existing studies have shown that the health of children is affected by the fetal development environment and the socio-economic environment after birth [2]. From the angle of economics, we pay attention to the influence of social and economic environment on children's health. The geographical location of the family, the long-term welfare level of the family, the education level of the father, the occupational category of the parents and the age of the child were significantly related to the health of the child after excluding the effects of the physiological and genetic factors [3]. For a particular group of children, the family environment is a direct factor affecting their health. A large number of studies have shown that the socio-economic characteristics of families, especially family income and the level of education of mothers, play an obvious role in promoting children's health [4]. Behrman noted that the family environment had the most significant direct impact on the health and nutritional status of pre-school children [5]. On the one hand, the improvement of family income will directly increase the ability to pay for children's nutrition and living needs. On the other hand, higher levels of knowledge of mothers help to improve their care for children and promote their health more effectively. The relationship between the health status of adults and income is considered to be mutually influential, and good health can lead to high income, and high income can also lead to good health. For children, however, they do not have the income themselves or their income is insignificant, so children can be excluded from the health effects of their income [6].

Case results show that family income is positively correlated with children's health. The balance between family income and child care, as a result of dual parental status, Liu Jing considers that women have a dual identity in the fami-

ly-earning and babysitting, and that, in controlling other factors, the increase in working hours of additional units of the mother has a significant negative impact on the health of the child. And the same mother's increase in non-agricultural working time has a greater negative impact on children's health, while the increase of mother's income has a significant positive effect on the health status of the child; marginal effect analysis shows that the positive impact of increased maternal income on children's health is hard to offset the negative effects of increased labor time. The impact of children's gender differences is also different, and girls are relatively at a healthy disadvantage [7]. Full time and part-time mothers enter the labor market at different ages of children, which also have an impact on children's health. The results show: The mother's entry into the labor market does not necessarily lead to a reduction in the time taken by the mother to take care of the child, and the mother, who is working part-time, is more fully involved in the child's care than the mother who does not work [8]. Li Qiang in the study of parents out of the left-behind children's health impact, it was found that the incidence rate of left-behind children increased compared with those of parents, and four possible mechanisms were suggested: first, the health of the left-behind children may be affected by the lack of care and attention of the temporary caregivers. The character of the left-behind child may also become more introverted even after the illness is not willing to their temporary support to complain about the physical discomfort, so that the possibility of small sick mother to develop chronic disease will increase; third, nutrition problems, left-behind children's nutritional intake is inadequate or not balanced nutrition, causing their physical health to be affected. Forth, lack of parental protection, leaving children left behind more vulnerable [9].

The concentration index can better measure the degree of health inequality [10], in general, the contribution ratio of urban hukou, medical insurance and household per capita income is negative, to some extent, it plays a role in reducing inequality. It shows that China's development and policies, especially the reform of medical system, have played a part in narrowing the gap between children's health, however, the long-term objective problems such as the imbalance of regional development remain to be solved, and the long-term health inequalities of children are more or less derived from intergenerational transmission and child care [11]. Shanshan using the data from the 2006, 2009 and 2011 of the China Health Nutrition Survey (CHNS) the econometric analysis was carried out using multivariate linear regression (short term health), log it regression (self-assessment health) and the method of grading regression (BMI). The results of the study on the health performance of the children were studied, and the result showed that the new agricultural combination had obvious effect on the long-term health of children, and the city residence insurance had no obvious effect on the long-term health of children [12]. There was no significant improvement in the short-term health status of the children. Liu Jing, Dongxiaoyuan using CHNS data, focusing on a number of indicators reflecting children's health, focused on the impact of child care substitutes (including the elder-

ly, relatives and childcare institutions) on the health of children, under the premise of controlling the time and income of the mother's labor supply. The increase in the time taken by others tended to have a significant negative impact on the health of children, and the availability of childcare institutions suitable for the age of children was significantly affected by the health status of children [13]. Therefore, it is needed to integrate public resources and reduce the cost of childcare substitutes [14].

Entrepreneurial activity plays an important role in economic and social development. At the macro level, entrepreneurial entrepreneurship can promote economic growth, increase productivity, create jobs and promote innovation [15] [16] [17] [18] [19]. At the micro-individual level, entrepreneurial activities promote the flexibility of labor employment, improve individual job satisfaction, life satisfaction and subjective well-being [20] [21] [22].

Most of the literature studies the impact of entrepreneurship on income and well-being, and there is little literature on the impact of parental entrepreneurship on children's health. The main contribution of this paper is embodied in the following two aspects: first, in the topic, this article from the perspective of parents to study the health of children, there is no literature at home and abroad on the relationship between the two direct research; second, this article not only examines the parents' entrepreneurship to the child health direct influence.

In this paper, two possible mechanisms are theoretically analyzed: money investment and time investment, and tested in the empirical analysis. The remaining parts of this article are structured as follows: The second section will make a theoretical analysis on the possible mechanism of parents' entrepreneurship affecting their children's health; the third section is introduced and variable description; the fourth section uses the CHNS data to carry on the empirical examination to the parents Entrepreneurship and the child health relations; the fifth Section has carried on the demonstration examination to two function mechanisms. Finally, in the last is conclusion and policy implication of this paper.

2. The Theoretical Analysis

The impact of parent' entrepreneurship on their children's health is mainly through the following two mechanisms of action:

The first is Money investment—entrepreneurship brings more income returns, and the increase in family income is beneficial to children's health. Some studies have discussed the return on income from entrepreneurship, such as Pan Chunyang and Wang Ziyan using the China Comprehensive Social Survey (CGSS) data, the study found that Chinese residents' entrepreneurial currency returns are positive, entrepreneurs earn more than 30% to 40% of their employees, and there is a "Matthew effect" on the money Return of entrepreneurship [23], The more successful the entrepreneur, the higher the monetary return; Ning Guangjie using the 2008-year rural-urban Migration survey data (rumic), the study found that demographic characteristics, human capital, social

networks and migration destination cities all affect their employment choices and income [24]. Control the selectivity deviation, the self-employed person's hourly income is higher than the short-term wage winners (short-term workers) of the hourly income; the results of Chen Qijin show that there is a significant income premium for entrepreneurs relative to wage winners, and with the increase of the number of points, the higher the level of entrepreneur premium, that is, entrepreneurship can bring more income [25], although there are some differences in research object, data source and estimation method, the research conclusion is consistent, that is, entrepreneurship can significantly improve individual income [12]. The improvement of family income will directly increase the ability to pay for children's nutrition and living needs, contribute to the improvement of family life quality, increase nutrition expenditure and benefit children's Health [26]. In other words, the higher family income brought about by entrepreneurship is beneficial to children's health.

According to this paper, the first research hypothesis is presented:

Hypothesis 1: Parents' entrepreneurship can lead to higher income returns, thereby increasing the money invested in children and improving the health of their children.

The second is time investment-the reduction in the care time caused by entrepreneurship is detrimental to children's health: prolonged health inequalities in children are expanded more by intergenerational transmission and child care [27]. On the one hand, a reduction in the time taken by parents to take care of their children, resulting in a decline in health concerns for children, and a possible mechanism for children's health: first, the health of children may be affected by the lack of care and concern for their temporary dependants; The child's character may be more introverted to the extent that he is sick and unwilling to complain about his or her temporary support, the likelihood of such a disease developing into chronic diseases increases; third, children may suffer from inadequate nutritional intake or a lack of balanced nutrition, resulting in their physical health being affected [28].

Children are more vulnerable; On the other hand, even if taken care of by others, with the control of the mother's labor supply time and income, the increase in the time of being cared for by others has a significant negative impact on children's health [29].

According to this paper, a second research hypothesis is proposed:

Hypothesis 2: Parents choose entrepreneurial activities, resulting in a reduction of time spent on their children, which is not conducive to improving the health status of their children.

In Chapter 5, the two hypotheses will be verified through empirical analysis.

3. Data and Variables

3.1. Data

The data used in this paper are China Health and Nutrition Survey (CHNS).

CHNS data from the university of north Carolina and conducted in China by Chinese center for disease control and prevention of China health and nutrition survey, aims to study how the change of China's social and economic effects on population health and nutritional status. The survey nine provinces or autonomous regions (Liaoning, Heilongjiang, Shandong, Jiangsu, Henan, Hubei, Hunan, Guangxi, Guizhou) of town and country, and now can get 1989, 1991, 1993, 1997, 2000, 2004, 2006, 2009 and 2011, a total of nine rounds of data. CHNS data investigation using multi-stage stratified random cluster sampling (multistage random cluster from) method, based on the geographical location, economic development level, degree of abundance of public resources and health index covered the east, and west China 8 - 9 provinces. CHNS samples are nationally representative.

The questionnaire includes adult, children and family questionnaires, which cover the rich information of nutrition and health, demographic characteristics, employment status and family background. This data contains variables: 1) variables at the individual level. Relationship with the head of the household, gender, age, date of birth, nationality, height, weight, blood pressure, smoking history, history, education fixed number of year (level), registered permanent residence, whether cadres, industry, profession, second career, the nature of the work unit and the number, the employment situation, working time (very detailed) salary, income, to participate in the situation of agricultural production. 2) Variables at the family level. Agricultural production, crop value, total family income, family population, household spending (detail), family income (in detail), living conditions (detailed), transportation, household consumption, family property, medical expenses (detailed), member of the family illness (in detail), food consumption (in detail). 3) Community level variables, number of villages, number of villages, medical insurance, hospital situation, consumption structure, school situation, family planning situation, food price. Used in this article is from 1989 to 2009, a total of eight year of survey data and information since 2011 had no children's height, and before the investigation region (province) to select and 8 rounds of survey is put in bigger difference, so no use. According to research needs, extracted from CHNS data under the age of 18 investigation data, and to eliminate invalid variable data missing samples, at the end of the paper finally got eight points in time using the unbalanced panel data, retain sample size of 1371. [1]

3.2. Empirical Model and Variable Selection

The OLS model is used to investigate the influence of parents' entrepreneurial

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[1]The causes of the unbalanced panel data mainly includes the following several aspects: first, eight rounds of survey across a period of up to 20 years, because this article research object for children under 18 years of age, so during the period of 20 years, are over the age of 18 one full year of life will no longer be included in the sample; Second, within 20 years, newly born children will be included in the study as new samples; In the end, the flow or death of the subject will also cause sample loss. The use of non-equilibrium panel data can maximize the use of sample information.

status on their children's health, and set the following equation for children's health:

$$\text{Health}_{it} = \beta_0 + \beta_1 \text{Parent}_{it} + X_{it}\lambda + \text{Province}_j + \text{Wave}_t + \varepsilon_{it} \qquad (1)$$

Health For children's physical health, there are three main measures to measure the physical health of children: first, clinical indicators, such as child mortality, child morbidity and injury; Second, children's self-assessment of health; the third is body measurement index, such as BMI, height age ratio. In this paper, children's HAZ score (age and height ratio) was used to measure the long-term health of children.[2]

The core explanatory variable is the dummy variable of whether the parent is an entrepreneur. If at least one of the parents is an entrepreneur, the value is 1. If both are paid, the value is 0. Parent [3]. According to the CHNS survey, the employment status of interviewees is divided into the following 9 categories: 1) - 2) self-employed persons without employment; 3) Long-term work for other people or units; 4) Work for others or units (contract workers); 5) Temporary workers; 6) Wage earners; 7) Unpaid family helpers; 8) Others; I don't know. Identify the entrepreneurs based on both quantitative research methods, this paper will "have hired worker individual operator" and "no employees of self-employed", defined as entrepreneurs will "work for others or unit long-term workers", "or work units (contractor) for others" and "temporary" as earners.

X As the control variables may affect children's health, child health impact factors based on the existing research literature, in this paper, the control variables mainly includes the following several aspects: one is the children's own characteristics, including their gender, age, whether the one-child, whether first-born; The second is the characteristics of parents, including biological genetic factors (height) and the duration of education. Third, family characteristics, including family size, family income per capita, toilet type, drinking water source, medical accessibility. Province$_j$ to control the characteristics of the province, such as the geographical location and climatic conditions of the province. Wave$_t$ for time fixation effects, the effects of unobservable external environmental (economic) factors on children's health can be controlled.

Considering the differences between parents in child care, this paper further

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[2]In terms of Height for children's health/nutrition, the international standard for the use of Height for Age z-scores (HAZ) is commonly used as a measure. Research in the specific operation of children with age, gender, "reference from children" comparison, through the Z score method of formula to calculate the children and children with reference to the relative difference of height, the HAZ. Thus, it is concluded that the standard deviation of the child deviated from the standard population is used to reflect the long-term nutrition and health status of children. Research by the score says children deviates from the standard of the same age, and sex groups the degree of height, to reflect children's nutrition health for a long time, if the Z score is negative, indicates that the long-term observation of children health sent in reference to children. The normal value of HAZ is between 3 and −3, and when the HAZ score is between −2 - −3, the child's growth retardation is indicated. According to the children's growth standard published by the world health organization, the age of children was rounded up by rounding.

[3]In the selection of control group, based on comparability, this paper chose to take both parents as the control group. In the robust test, this paper also considered the control of unpaid or remunerative family help and unemployment or withdrawal from the labor market.

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differentiates the difference between parents' different entrepreneurial identity and their influence on children's health:

$$\text{Health}_{it} = \beta_0 + \beta_1 \text{onlyfather}_{it} + \beta_2 \text{onlymother}_{it} + \beta_3 \text{both}_{it} \\ + X_{it}\lambda + \text{Province}_j + \text{Wave}_t + \varepsilon_{it} \tag{2}$$

onlyfather $= 1$ The father is the entrepreneur, the mother is not the entrepreneur; onlymother $= 1$ It means that mothers are entrepreneurs and fathers are not entrepreneurs; both $= 1$ Parents are entrepreneurs, parents are not entrepreneurs. β_1 The impact on children's health is not measured by the fact that only fathers are entrepreneurs, mothers are entrepreneurs, and parents are entrepreneurs. β_2 β_3 The main variable definitions are shown in Table 1.

3.3. Descriptive Statistics of Variables

Grouping descriptive statistics are given in Table 2 children's health as a result, the Table 2(a) parents startup state can be divided into two classes, found that parents of children at least one business samples, the health averages 0.534, children and parents are not entrepreneurial samples, the health averages 0.172, the latter is superior to the former. Figure 1 the comparison of density function diagram can provide more clear evidence, the abscissa represents the value range of "HAZ scoring", the axial coordinates indicate the density of probability, and the greater the density, the greater the probability of being in that range. Obviously, parents are not business cases, children's health is more concentrated, at 0 (normal) distribution probability is extremely high, and the distribution at the lower health level is low. Therefore, in this paper, the Equation (1) is significantly negative, that is, parents' entrepreneurship is not good for children's health. β_1 Table 2(b) further compares the differences between children's health in four modes, namely, the parents are not starting a business, only the father, the mother and the parents. From the comparison of the children's health mean, it can be found that the health of children is the highest when parents are not entrepreneurs. However, it can be found from the sample size of different groups that there are relatively few children in the father's business and only the mother's entrepreneurial state, so there are many problems in this conclusion. In the empirical analysis, this paper will not focus on the difference between parents' entrepreneurial state. Table 3 is the descriptive statistical result of the main variables in this paper.

4. Empirical Analysis

Firstly, the method of OLS was used to estimate the children's health decision Equation (1), and the estimated results were shown in Table 4. The (1) column only joins the core explanatory variable—parents start their own business; (2), (3) and (4) include children, parents and family control variables; In order to avoid the interference of sample selection bias the estimation results, the first column (5), (6) to explain the core variables—parents were redefined, parents the definition of entrepreneurship remains the same, but the parents are not

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venture were reclassified, and on the basis of earners, respectively, will have no bonuses paid family helper and unemployment and out of the Labor market's working-age population classified as a business group. Table 4 shows that the parents' entrepreneurial coefficient is significantly negative, indicating that the

Table 1. Variable list.

Variable types	The variable name	Define
Interpreted variable	Children's health	Height age ratio (HAZ score)
Core explanatory variable	Parents are entrepreneurs My father is an entrepreneur	At least one parent is an entrepreneur Father alone
	Mothers are entrepreneurs	Motherhood alone
	Both parents are entrepreneurs.	Both parents are self-employed
Control variables	The child's age	Age of units:
	Children's gender	Men = 1; Women = 0
	The one-child	Is = 1; N = 0
	first-born	Is = 1; N = 0
	My father height	Unit: cm
	Mother's height	Unit: cm
	Father of record of formal schooling	My father has been exposed to education years (year)
	Mother education	Mother is subject to education years (year)
	Family size	Unit: people
	Family economic situation	Per capita net income of the family.
	Medical accessibility	The time to visit a medical institution
	Drinking water source	One type is groundwater (greater than 5 meters); It will open well water (less than 5 meters), streams, springs, rivers and lakes, and the definition of snow and ice water will be merged into the second category, named open source of water. The water is rated as the third category, and the water is used as a benchmark, while other water sources are classified as the fourth category
	The toilet type	One is that the family does not have a toilet; The second category is that the family has non-flush toilets, such as indoor toilets (no flush), outdoor non-flushing public toilets, open cement pits and open pit. The third category is flush toilet, such as indoor flush, outdoor flush toilet. In this paper, the family has no toilet as the comparison benchmark
Instrumental variable	Entrepreneurial atmosphere	The proportion of entrepreneurs in provinces

Table 2. (a) Child health statistics description; (b) Child health statistics description.

(a)

Children's health	The mean	The standard deviation	The minimum value	The maximum	Number of samples
Parents don't start businesses	0.172	0.907	4.769	5.525	853
Parents' entrepreneurship	0.534	1	4.198	2.835	518
All the samples	0.309	0.959	4.769	5.525	1371

(b)

Children's health	The mean	The standard deviation	The minimum value	The maximum	Number of samples
Parents don't start businesses.	0.172	0.907	4.769	5.525	853
Father alone	0.422	0.933	3.474	0.869	33
Motherhood alone	0.460	1.092	3.871	2.835	70
Both parents are self-employed	0.532	0.902	4.198	2.146	171
All the samples	0.252	0.929	4.769	5.525	1127

Data source: "China health and nutrition survey", 1989, 1991, 1993, 1997, 2000, 2004, 2006, 2009.

Table 3. Descriptive statistics of variables.

variable	The mean	The standard deviation	The minimum value	The maximum	Sample size
Children's health	0.309	0.959	4.769	5.525	1371
The child's age	11.49	3.835	0	18	1371
Children's gender	0.532	0.499	0	1	1371
The one-child	0.588	0.492	0	1	1371
first-born	0.759	0.428	0	1	1371
My father height	167.8	6.148	148	187.4	1371
Mother's height	156.7	6.130	65	173.7	1371
Father's education	9.786	3.291	0	18	1371
Mother education	8.630	3.523	0	17	1371
Family size	3.864	1	3	8	1371
Family economic situation	7.790	0.855	5.553	9.277	1371
Medical accessibility	9.015	11.03	0	180	1371

Data source: "China health and nutrition survey", 1989, 1991, 1993, 1997, 2000, 2004, 2006, 2009.

Table 4. The impact of parents' entrepreneurship on children's health.

	(1)	(2)	(3)	(4)	(5)	(6)
Variable			Children's health			
Parents' entrepreneurship	0.286***	0.217***	0.119**	0.087**	0.089**	0.132***
	(0.045)	(0.044)	(0.056)	(0.043)	(0.043)	(0.050)
Age		0.010	0.006	0.007	0.007	0.002
		(0.006)	(0.007)	(0.008)	(0.007)	(0.007)
Gender		0.499***	0.483***	0.515***	0.515***	0.503***
		(0.036)	(0.042)	(0.044)	(0.044)	(0.038)
The one-child		0.175***	0.145***	0.102*	0.102*	0.067
		(0.046)	(0.050)	(0.061)	(0.060)	(0.050)
First-born		0.035	0.009	0.019	0.020	0.008
		(0.056)	(0.062)	(0.064)	(0.064)	(0.056)
My father height			0.028***	0.027***	0.027***	0.027***
			(0.004)	(0.005)	(0.005)	(0.004)
Mother's height			0.018***	0.018***	0.018***	0.014***
			(0.004)	(0.004)	(0.004)	(0.003)
Father's education			0.019**	0.013	0.013	0.001
			(0.008)	(0.009)	(0.009)	(0.007)
Mother education			0.001	0.009	0.010	0.007
			(0.009)	(0.010)	(0.010)	(0.007)
Family size				0.036	0.036	0.026
				(0.032)	(0.032)	(0.021)
Family economic situation				0.145***	0.147***	0.101***
				(0.054)	(0.054)	(0.037)
Medical accessibility				0.000	0.000	0.002
				(0.002)	(0.002)	(0.002)
Groundwater				0.125*	0.119*	0.130**
				(0.068)	(0.068)	(0.058)
Open source				0.140	0.139	0.151*
				(0.120)	(0.120)	(0.090)
Other water				0.841	0.839	0.377
				(0.568)	(0.567)	(0.346)
Non-flush toilet				0.055	0.003	0.037

Continued

				(0.215)	(0.209)	(0.166)
Flush the toilet				0.076	0.138	0.093
				(0.220)	(0.214)	(0.170)
Provincial fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Annual fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Constant term	0.098	0.424***	8.293***	8.946***	8.781***	7.578***
	(0.103)	(0.135)	(0.935)	(1.050)	(1.064)	(0.833)
Sample size	2567	2092	1531	1371	1376	1953
Goodness of fit	0.081	0.159	0.206	0.213	0.214	0.176

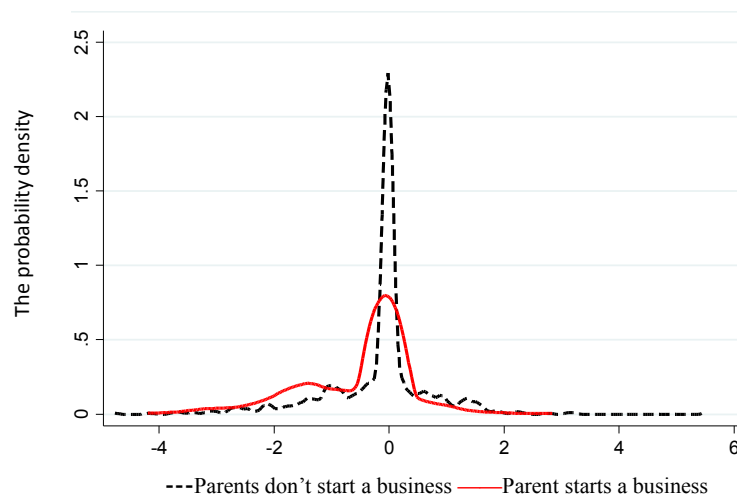Note: ***, **, * are marked at 1%, 5% and 10% respectively.

Figure 1. Comparison of children's health density function.

children's health status is relatively low in the case of at least one parent. This result coincides with the theoretical analysis in this paper, and the parents' entrepreneurship reduces the care time for children, which significantly reduces the health of children.

The estimated results from Table 4 can be seen.

1) The gender of children has a significant impact on their health, and boys generally have better health than girls. This with Wang Fang (2012), the research conclusion is consistent, the main reason is the parents have "son preference", held notion to the same into the quality of the output of different gender children make different evaluation, think that the boy's input-output ratio is higher, so in the face of the family resource constraints, will first investment, more boys, namely adopt different investment strategies, resulting in the differences between the children's health in the gender system.

2) Only children are in better health. Obviously, under the circumstance of family resource constraints, as the number of children increases, on the one hand, parents must reduce the consumption of other goods and reduce the quality of family life. On the other hand, it also reduces the investment in existing children, which is not conducive to their physical and mental health.

3) These genetic factors, such as father's height and mother's height, also have a significant positive effect on children's health.

4) The better the family economy, the better the child's health.

The above OLS estimation results may be biased, and the setting of regression equation may have endogenous problems due to omitted variables and two-way causality. On the one hand, factors that are not observable or difficult to measure in reality (such as family background, ideas, etc.) not only affect children's health, but also affect their parents' entrepreneurial choices. In the empirical equation setting, it is difficult to quantify the above factors comprehensively and accurately, so it is possible to have endogenous problems caused by missing variables. Also may in turn affect children's health, on the other hand, parents, children's health is good or bad, directly affects the parents care requires money and time to its, will indirectly influence how parents choose what kind of employment, entrepreneurship can improve income workers also there is a dispute, but relative to the work, will be provided to the business work time, place, more flexible. Therefore, there is a sample selection problem caused by two-way causality. Aiming at the problem of possible sample selection, this paper considers three methods: processing effect model, propensity score matching and panel fixed effect model to alleviate potential endogenous problems.

4.1. Processing Effect Model

The principle of the processing effect model is similar to the two-stage instrumental variable method, which is better estimated when the internal variables are virtual variables (Maddala, 1983, Greene, 2008). The estimation method of the processing effect model is as follows: the first step is to estimate the processing Equation (4), which is to estimate the parents' entrepreneurial choice equation and calculate the entrepreneurial probability of parents. The control variables include not only general control variables in Equation (3), but also exogenous exclusion variables Z X. The second step is to estimate the children's health decision Equation (3), which reflects the average causal effect of parents' entrepreneurship on children's health β_1.

Children's health decision equation:

$$\text{Health}_{it} = \beta_0 + \beta_1 \text{Parent}_{it} + X_{it}\lambda + \varepsilon_{it} \tag{3}$$

$$\varepsilon_i \sim N(0, \delta^2)$$

Processing equation:

$$\text{Parent}(1,0)_i = \alpha_0 + Z_i f + u_i \tag{4}$$

$$u_i \sim N(0,1)$$

when applying the processing effect model, the selection equation requires the introduction of exogenous typesetting variables, that is, the instrumental variables that only affect the parents' entrepreneurial choice and do not affect children's health through other channels. According to the selection criteria of tool variables, this paper selects a city characteristic variable as the tool variable of parents' entrepreneur identity, namely the entrepreneurial atmosphere. Generally speaking, the better the regional entrepreneurial atmosphere, the stronger the individual's preference for starting a business, and the stronger entrepreneurial motivation (Guiso *et al.*, 2015). In this paper, the entrepreneur ratio is used to measure the entrepreneurial atmosphere in the province, namely, the proportion of entrepreneurs in each province's urban sample. In theory, the entrepreneurial atmosphere should be positively correlated with the identity of the entrepreneur, and it is not affected by the health of the children. Therefore, the correlation and exogenous requirements of the selection of instrumental variables should be met. This article also has carried on the inspection, to the effectiveness of the instrumental variable treatment effect in the model, the first phase estimation results of 40.15 F statistics, experience more than the threshold value of 10, the first stage and entrepreneurial atmosphere coefficient is significantly positive.

4.2. Propensity Score Matching

The propensity score matching is a data processing method based on the observed data analysis variables and can effectively control the sample selection bias (Rosenbaum & Rubin, 1983). Its principle is: the first using Probit model to estimate the entrepreneurial decision-making equations, so as to get individual into treatment group (group entrepreneurs) conditional probability tended to score values, tend to score values can be understood as in the case of a given a series of factors that may affect the individual choice conditional probability of entrepreneurship. This paper to extract the child's age, children's gender, whether the one-child, whether the first-born, father mother height, height, father's education, mother's education, family size, family economic status, family health accessibility as the explanatory variables into the Probit model of entrepreneurial decision; Then, the treatment group was matched with the control group according to the propensity score value, and the average gap between the two groups was estimated. If the balance test is passed, the average gap reflects the average causal effect of entrepreneurship on income.

From **Figure 2**, it can be seen intuitively that the standardized deviation of most variables has shrunk after matching, indicating that the matching results have balanced the data well.

4.3. Panel Fixed Effect Model

Although the treatment effect model and tendency to score matching method to alleviate the potential sample selection bias, but using the cross section data cannot
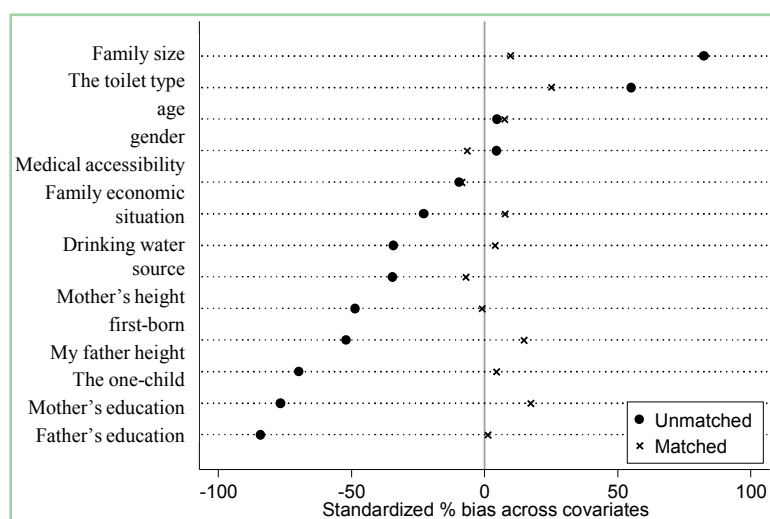
Figure 2. Standardized deviation diagram of each variable.

overcome entrepreneurship affect both parents and children's health is observed interference factors on the estimation results. If these factors do not change over time, we can eliminate them with a fixed effect model. Based on this, we adopt the fixed effect model to eliminate the unobservable individual heterogeneity in the equation of income determination:

$$\text{Health}_{it} = \beta_i + \beta_1 \text{Parent}_{it} + X_{it}\lambda + \text{Wave}_t + \varepsilon_{it} \tag{1}$$

Table 5 shows the endogenous estimation results. Among them, the first (1) - (2) model to estimate the result as a treatment effect, the first phase is estimated, according to the results of instrumental variable, entrepreneurial atmosphere coefficient is positive, and statistically significant at the 1% level, the first phase of regression of F statistic threshold value of more than 10, to ensure the effectiveness of the instrumental variable. (3) The estimation results of the propensity score matching method; (4) - (5) are the panel fixed effect model and the endogenous panel fixed effect model estimation results respectively. The above results can be found that the coefficient of parental entrepreneurship is significantly negative, which is consistent with the previous analysis.

The above analysis does not distinguish between parents' entrepreneurial state, and there are often differences between father and mother in entrepreneurial motivation and type, so this paper further estimates the Equation (2). Table 6 for the estimated results, the first (1) - (3) as the OLS estimation results, for the sake of avoid sample selection bias, the first column (2), (3) the definition of entrepreneurs are adjusted respectively, adjustment methods are the same as in Table 4, consider endogenous in sub-paragraph (4) as a model to estimate the multivariate treatment effect, considering the endogenous variable includes three entrepreneurial probability, this paper also selected provinces father mother probability of entrepreneurship and parents are business as the tool of the endogenous variable variables; (5) - (6) are the panel fixed effect model and the endogenous panel fixed effect model estimation results respectively. The

Table 5. Impacts of parents' entrepreneurship on children's health consider endogeneity.

Variable	(1)	(2)	(3)	(4)	(5)
			Children's health		
	Processing effect model		Propensity score matching	Panel fixed effect model	Panel tool variable fixed effect model
	The second stage	The first stage			
Parents' entrepreneurship	0.079**		0.106**	0.073*	0.089**
	(0.029)		(0.048)	(0.041)	(0.032)
Entrepreneurial atmosphere		0.353***			
		(0.091)			
Control variables	Yes	Yes	Yes	Yes	Yes
Constant term	9.157***	1.201***	3.077**	6.473	2.066
	(1.038)	(0.429)	(1.412)	(5.721)	(11.619)
Sample size	1371	1443	1398	1371	1371

Note: ***, **, * are marked at 1%, 5% and 10% respectively. In the regression equation, the control variables that are the same as the benchmark model in Table 4 (4) are added to the equation, and the length is no longer reported, and the interested readers are asked to obtain from the author.

Table 6. The influence of parents' entrepreneurship on children's health, the difference between parents' entrepreneurial state.

	(1)	(2)	(3)	(4)	(5)	(6)
			Children's health			
	OLS			Multiple treatment effect	Panel fixed effect model	Panel tool variable fixed effect model
Father alone	0.217***	0.097**	0.109**	0.095***	0.087	0.113
	(0.058)	(0.049)	(0.048)	(0.031)	(0.326)	(0.086)
Motherhood alone	0.036	0.040	0.024	0.002	0.483*	0.631
	(0.123)	(0.123)	(0.099)	(3.507)	(0.250)	(0.498)
Both parents are self-employed	0.081*	0.085*	0.139**	0.175***	0.172*	0.169
	(0.045)	(0.046)	(0.068)	(0.047)	(0.092)	(0.081)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Constant term	9.064***	8.909***	7.609***	4.768***	9.424***	7.827***
	(1.321)	(1.237)	(0.868)	(0.339)	(0.838)	(0.919)
Sample size	1127	1138	1840	1127	1127	1127

Note: ***, **, * are marked at 1%, 5% and 10% respectively. In the regression equation, the control variables that are the same as the benchmark model in Table 4 (4) are added to the equation, and the length is no longer reported, and the interested readers are asked to obtain from the author.

above results can be found that the three types of parents are mostly negative, but the coefficients of "only father" and "parents are both entrepreneurial" are significantly higher.

5. Mechanism of Inspection

The above empirical study found that parents' entrepreneurship is not good for their children's health. Entrepreneurship theory in the above theory, this paper puts forward the parents may affect their children's health through two channels: money and time, in this part of the test of the above two mechanisms respectively.

5.1. Money Input

In order to examine the mechanism, this paper examines the entrepreneurship can raise workers' income, whether for entrepreneurs to a 0 - 1 variables as explanatory variables, core is with a monthly income of logarithmic as explained variable, entrepreneurship can bring premium income. The descriptive statistics of Table 7 shows that the average monthly income of entrepreneurs is higher than that of wage earners.

By Table 8 the entrepreneurship has a significant positive effect on monthly income, OLS estimation results and considering the treatment effect of endogenous cases IV fixed effects model and panel estimation results of the model and to overcome don't change over time and at the same time affect entrepreneurial parents choose an observation factors and children's health panel fixed effects model estimation results are consistent. So we have hypothesis 1.

5.2. Time Input

In order to test this mechanism, this paper investigates whether entrepreneurship can have an impact on child care time. In the CHNS survey, two questions related to parental care for children. One was, "did you take care of your children aged 6 and below last week?"; The other is "how much time did it take to feed, shower, dress, and nurse the children last week? (hour). According to this, two methods are used for testing. Last week, the first way to ever take care of their home and children under 6 years old to be explained variable, using probit model to estimate, last week, the second method to give the child feeding, bathing, dressing, care, etc., spent much time to be explained variables, OLS estimation.

Comprehensive Table 9, Table 10 shows that entrepreneurial significantly reduce the time for children's care, OLS estimation results and considering the treatment effect of endogenous cases IV fixed effects model and panel estimation results of the model and to overcome don't change over time and at the same time affect entrepreneurial parents choose an observation factors and children's health panel fixed effects model estimation results are consistent. So that's the hypothesis 2.

Table 7. Comparison of income and strength between entrepreneurs and non-entrepreneurs.

Variable	The overall	Gainer	Entrepreneurs
Monthly income	13,000	12,000	18,000
Work hours per week.	44.97	43.47	56.58
Working days per week	5.620	5.509	6.465
Work hours per day.	7.971	7.879	8.679
Hourly earnings	83.54	79.08	123.0

Table 8. The impact of entrepreneurship on income.

	(1)	(2)	(3)	(4)
		Monthly income logarithm		
	OLS	Processing effect model	Panel fixed effect model	Panel IV fixed effect model
Entrepreneurship	0.127***	0.111**	0.100*	0.097*
	(0.047)	(0.049)	(0.056)	(0.051)
Control variables	Yes	Yes	Yes	Yes
Constant term	7.476***	7.452***	23.828***	23.854***
	(0.168)	(0.166)	(7.031)	(7.034)
Sample size	6270	6270	6275	6275

Note: ***, **, * are marked at 1%, 5% and 10% respectively. Square control variables including age, age, gender, marital status, education level, work intensity, the province virtual and annual virtual variables, limited to the space no longer report, interested please contact the author for the readers.

Table 9. The impact of entrepreneurship on participation in child care.

	(1)	(2)	(3)	(4)
		Participation in child care (0 - 1)		
Variable	OLS	Processing effect model	Panel fixed effect model	Panel IV fixed effect model
Entrepreneurship	0.003***	0.006**	0.012**	0.009
	(0.001)	(0.003)	(0.005)	(0.007)
Control variables	Yes	Yes	Yes	Yes
Constant term	1.277***	0.787***	8.897***	8.910***
	(0.149)	(0.157)	(0.883)	(0.876)
Sample size	2620	2620	2413	2413

Note: ***, **, * are marked at 1%, 5% and 10% respectively. Square control variables including age, age, gender, marital status, education level, province virtual and annual virtual variables, limited to the space no longer report, interested please contact the author for the readers.

Table 10. The impact of entrepreneurship on child care time.

	(1)	(2)	(3)	(4)
	Care time (hours)			
Variable	OLS	Processing effect model	Panel fixed effect model	Panel IV fixed effect model
Entrepreneurship	0.022***	0.123***	0.141***	0.121***
	(0.008)	(0.016)	(0.015)	(0.018)
Control variables	Yes	Yes	Yes	Yes
Constant term	3.072***	1.919***	10.795***	14.399***
	(0.354)	(0.359)	(0.423)	(0.396)
Sample size	2521	2521	2326	2326

Note: ***, **, * are marked at 1%, 5% and 10% respectively. Square control variables including age, age, gender, marital status, education level, province virtual and annual virtual variables, limited to the space no longer report, interested please contact the author for the readers.

6. Conclusions

This article selects the HAZ rating of children (age height ratio) to measure children's health, to show the long-term health of children, emphatically discusses the parents startup state's influence on children's health, the results find that:

1) Startup state does not distinguish between parents, the parents for at least one business case, children's health is relatively low, OLS estimated result is in agreement with estimated results of the treatment effect model under the consideration of endogeneity and the fixed effect model of panel IV.

2) Considering the father and mother in such aspects as entrepreneurial motivation type is often, there is a difference to further distinguish parents state of entrepreneurship; entrepreneurial state-coefficient estimation results show that the three kinds of parents are mostly negative, but "only father entrepreneurship" and "parents are entrepreneurship" coefficients of two kinds of situations more significantly.

3) System test results show that in addition, 1) money estimation results show that the venture has a significant positive effect on monthly income; 2) time input, entrepreneurially significantly reduces the time for children's care; OLS estimated result is in agreement with estimated results of the treatment effect model under the consideration of endogeneity and the fixed effect model of panel IV and panel estimation results of the model are consistent; two mechanisms, one positive and one negative, have a mutually offsetting relationship.

4) Other factors affect children's health. The gender of children has a significant influence on their health, and boys' health is usually superior to that of girls. Only children are in better health; the genetic factors such as father's height and mother's height have significant positive influence on children's health. The better the family economy, the better the child's health.

The conclusion of this paper has some policy implications.

The empirical results show that parents' entrepreneurship can significantly reduce the health level of children. The second mechanism of this paper shows that the reason is that parents' entrepreneurship can significantly reduce the time of child care. Therefore, in order to alleviate the negative impact of parents' entrepreneurship on children's health, this paper believes that it is possible to develop children's care substitutes, such as professional care institutions, to improve the quality, and to popularize the knowledge of parenting, and improve the efficiency of parents to take care of children.

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