

The Rationality Analysis of Family Education Investment

-- Take the stage of compulsory education as an example

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Abstract: With the change of family structure, more and more one-child families appear, and parents' attention to their children has shifted from multiple to one. In this case, parents' expectations and requirements for their children are getting higher and higher, and the school learning content has been unable to meet parents' expectations for their children's learning. Therefore, parents begin to invest in order to improve their children's learning ability and other skills, but some of the investment is obviously irrational, even zero rate of return, but parents are still happy to do it. According to China's household income expenditure, education accounts for nearly 40%, household investment Dezhuang Hu, Hongbin Li and other scholars, according to a study of China's education spending more than half of the income of low-income families, far higher than the high income families, and in which there are a large part of the investment is not being accepted by children, This is not only to the child's physical and mental health caused a certain degree of influence, and also caused the waste of education resources for social inequality as well as to promote education resources.

Keywords: Family Education; Family Structure; Education Spending; Expenditure Structure; Children's Mental Health.

1. Background

Since the reform and opening up, China's economy has developed rapidly and entered a period of structural transformation. Since the 1980s, in the process of market transition in China at the same time two dramatic changes have taken place in, one is the family revolution, the second is consumer revolution[15]. The two are interrelated, especially in the aspect of family education. The structural reform of the family has directly led to the tilt of the balance of household consumption, which has gradually shifted from the initial preference for subsistence data to spiritual data. In the process of family reform, the status of family education is also gradually rising, but also accompanied by some education resources equity, economic, mental health and other issues. Speak through this study focus on the compulsory education period, the education in family education investment behavior is reasonable as a starting point, discusses the logic behind the investment behavior and the rationality analysis the impact of family and society.

2. Literature Review

2.1. The Proportion of Family Investment in Education

A large number of existing studies on the issue of family investment in education have shown that the investment in education is not proportional to the return. A study by Dezhuang Hu, Hongbin Li and other scholars found that the top quartile of Chinese families spend 10.6% of their income on education investment. While a quarter of the lowest income families to use as much as 56.8% of income to invest in education. Families with lower income will face greater pressure on education and higher cost of education investment. This has become China's a big burden for the family, for low-

income families, this one The burden is particularly heavy. Before 2021, on the other hand, the period of compulsory education, compulsory education from "competition in the college, external competition, with participation of low level balance into" low school competition, colleges and universities, high tutorial participation "[1]. This kind of education in the unconscious breeding the unfair education resources available, and these special access to is often accompanied by high "price", especially in compulsory education stage, the influences of family cultural capital to the child the opportunity [2].access to and is often difficult to high-income households have more sufficient savings and excellent asset allocation, so even if its extra spending, may not need to reduce other aspects of the elastic expenditures; However, for families with low income, especially those below the poverty line, their income and savings can only meet the basic living needs, and their budget constraint is tightened. Once the extra expenditure rises, the expenditure of other aspects is bound to decrease.

Therefore, under the condition that the rigid expenditure cannot be changed, low-income families can only reduce the flexible expenditure, especially the expenditure of children's education, which has large share. When children's education expenditure cannot be guaranteed, children in poor rural families will face great pressure in academic, social, leisure and entertainment, and personality building, which will have a negative impact on their mental health[3].

2.2. Sunk Cost of Family Education Investment

For the explanation of sunk costs, the internationally widely recognized theoretical concept is put forward by the Nobel Prize winner "Joseph Stiglitz", which points out that those costs have been incurred and cannot be recovered, such as time, money and energy. This concept emphasizes that

when making new decisions, one should focus on the expenses that may be incurred in the future, and should not consider the expenses that have already been incurred. In the family investment in education, especially the more should consider the rationality of the education investment problems of low-income families, but people may make irrational decisions because of sunk costs, such as knowing that the children in the process of learning is unable to get a higher achievement still choose investment, even from the economic point of view to stop investment is more reasonable. High because of the differences in family background and income situation cognitive or more informed family in the face of this situation as far as possible when they stop investment behavior, so as to prevent further increase of sunk cost, on the contrary, low cognitive or not informed the family might be because loathe to give up on the face of this situation, it's a pity that factors such as increasing sunk costs.

To explore the rationality of the family education investment analysis can effectively prevent the waste of education resources and reduce the family economic pressure, improve the family happiness, solve the problem such as family, society has positive significance. For the society, it can effectively reduce the waste of social educational resources, promote the transformation of educational

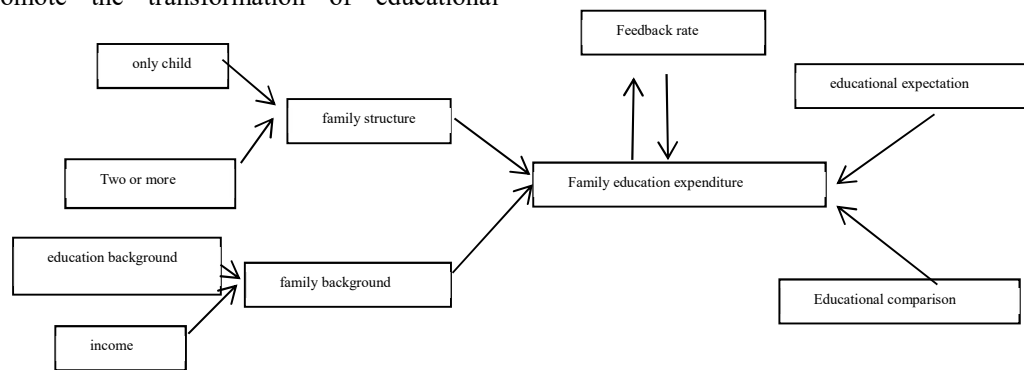


Figure 1. Family education investment

Family education investment mainly includes in-school investment and off-school investment. As the research stage is in the compulsory stage, tuition fees, books and other expenses during the compulsory education stage are not included.

Therefore, in the compulsory education stage, the expenditure of off-campus education is the focus of family education investment, so it is more important to explore the proportion and rate of return of off-campus education expenditure.

This study will from two aspects of family background, family structure, this paper studies and compares children, income, educational background difference in education investment affect the investment behavior.

4. External Factors

"Rationality of educational investment" refers to the consideration of the effectiveness, economy and science of resource allocation and use in the process of educational investment, so as to ensure that the invested educational resources can maximize the overall development of students and the realization of educational goals. Education is compulsory in China's case, in the stage of primary and secondary schools of free tuition, but due to the large population base and the education resources are scarce,

resources from inequality to equality, reduce the gap between urban and rural education resources and other problems. Secondly, for families, it can effectively reduce family expenses, improve the quality of life, and promote family happiness.

3. Study Design and Self-Built Model

3.1. Data Source

The data come from the three China Family Panel Studies (CFPS) from 2018 to 2020, which track the education expenditure data, including out-of-school expenditure and total education expenditure. The data used in this study are mainly extracted from the education stage data, which is combined with the children's data, family economic data and in-school data from the CFPS baseline survey data. At the same time, as a result of the education inequality between urban and rural differences already confirmed for a large number of research, this study focused on the investigation in the process of family education investment proportion compared with the household income is proportional to the.

3.2. Main Factors Internal Factors

entrance scribing area system, and soon reasons, many students' parents can only choose costly private schools [4].

From the perspective of the proportion and rate of return of education investment, this study will explore whether this extra education expenditure is affected by the number of children, income, and educational background.

4.1. Other Influencing Factors

With the development of economy and the increase of family income, the way and degree of parents' investment in children's education also show a trend of diversification. However, many families have irrational investment in education and lack scientific and reasonable planning and decision-making[6]. Therefore, investment in education will lead to the deterioration of family life quality and the increase of children's pressure[5]. Another factor is that this phenomenon education expectation, also can saying is education anxiety, it is the parents for our children's future development in the process of the pursuit of certainty from the state of out of control [7],among them, the anxiety of parent education positively correlated with family education cost, namely the parents anxiety level is higher, its the more frequently the education investment behavior, The higher education cost [8], in other words, unreasonable investment could lead to a waste of resources and the education effect is reduced, also may increase the economic burden of family and the tension between family members.

This study will from education expectations, education, comparing the two main factors influencing the investment behavior study, study how the two factors affecting the behavior of family education.

5. Research Hypothesis

5.1. Hypothesis of Educational Expectation Factor

A family makes a general decision and plan on education investment through the number of children, so the number of children in a family is an important factor affecting the behavior of family education investment [9]. On the other hand, if parents have higher educational expectations for their children, their children are more likely to get better grades and higher educational qualifications. Positive educational expectations affect parents' educational investment, including increasing the payment of monetary capital, providing good material conditions, and investing more time and energy in raising children (such as frequent daily interaction with children), which is conducive to improving children's academic achievement[13]. Based on this, the following hypotheses are proposed in this study.

It is assumed that the amount of education investment for the only child and two or more children is influenced by the educational expectations of parents.

5.2. Hypothesis of Educational Comparison Factor

The family's occupation, education background and other factors will indirectly affect the problems faced by parents in education investment, and the education investment behavior is greatly affected by personal ideas and wishes, indicating that parents often make decisions according to their own ideas when making education investment behavior, usually ignoring the risks in education investment [10]. Accordingly, the following hypotheses are proposed in this study.

The higher the amount of family education investment, the higher the proportion, the greater the risk, that is, the more unreasonable.

6. Research Strategy and Methods

6.1. Research Strategy

This study will test the hypothesis through three steps. The first step is to conduct a descriptive analysis of the basic situation of the extra-school education expenditure of the family education investment (taking the education and training expenditure as an example). The second step is to analyze the family education investment and explore the impact of the amount of education investment of only child and two or more children on the educational expectations of parents. The third step is to verify whether the higher the amount of family education investment, the higher the proportion, the greater the risk, that is, the more unreasonable.

6.2. Research Methodology

This study mainly used questionnaire survey to understand the family structure, education, economy and other information of the surveyed families. Because the data can only be used for a single study of the rate of return and other influencing factors, this study will use the interview method to supplement the influencing factors and the two-way influence of the relationship between the rate of return and family education expenditure.

In order to ensure the randomness of the data and the representativeness of the samples, this study selects families from different regions and different economic levels to conduct the survey. Finally, through data analysis and discussion, we can find out whether the education investment behavior is reasonable.

This study mainly uses three China Family Panel Studies (CFPS) questionnaire surveys from 2018 to 2020 as the main research method. The questionnaire included a comprehensive questionnaire on family structure, education and economic income.

7. Findings and Conclusions

7.1. Descriptive Analysis of Expenditure on Off-campus Education and Training

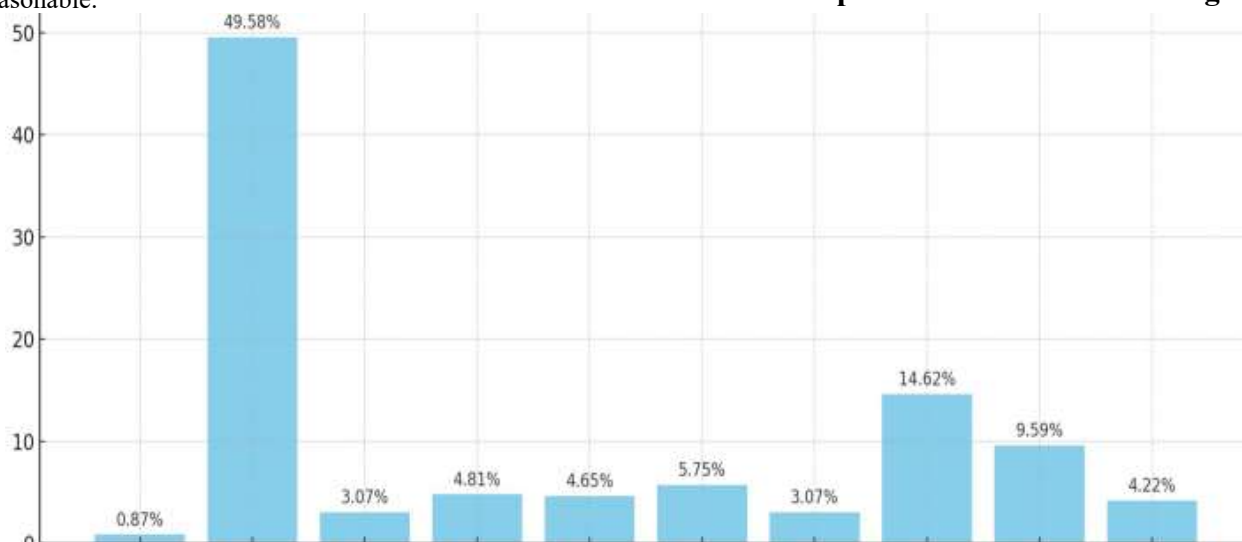


Figure 2. Statement of expenditure and income for family education and training

Figure 1 shows the family education and training expenditure within 12 months from 2018 to 2019. It can be seen from the data that the expenditure is 0 RMB: 7060 people (49.58%) spend 1 to 999: 437 people (3.07%) spend

1000 to 1999 : 684 (4.81%) spent 2,000 to 2,999: 662 (4.65%) spent 3,000 to 3,999: 819 (5.75%) spent 4,000 to 4,999: 438 (3.07%) spent 5,000 to 9,999: 2,084 (14.62%) spent 10,000 to 19,999: 1,367 (9.59%) spent 20,000 or more: 601 (4.22%) nearly half of the

respondents had no education and training expenditure in the past 12 months (49.58%), while a significant number (14.62%) spent between 5,000 yuan and 9,999 yuan. Among them, only 960 respondents (6.74%) have an income between 5000 yuan and 9999 yuan. From the data, in the same income and expenditure range, it can be seen that the expenditure is much higher than the income, especially in the high investment

range of 5000-9999 yuan, the matching income group is the expenditure group below the range. It can be seen that there is a certain degree of irrationality in education expenditure.

7.2. The Impact of educational Expectation on Educational Investment

. regress wd5total wd2

Source	SS	df	MS	Number of obs	=	8,446
Model	1.3926e+09	1	1.3926e+09	F(1, 8444)	=	25.23
Residual	4.6602e+11	8,444	55189952.4	Prob > F	=	0.0000
				R-squared	=	0.0030
				Adj R-squared	=	0.0029
Total	4.6742e+11	8,445	55348319.4	Root MSE	=	7429

wd5total	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
wd2	365.1067	72.68363	5.02	0.000	222.629	507.5844
_cons	951.9351	504.0109	1.89	0.059	-36.04966	1939.92

Figure 3. The relationship between educational expectation and educational expenditure

It can be concluded from Table 2 that parents' educational expectation has a great influence on the family's educational expenditure. The regression analysis shows that educational expectation (wd2) has a significant positive effect on educational expenditure (wd5total). When other variables are controlled, one unit increase in educational expectation leads to an average increase of 365.11 units in educational expenditure. The relationship is highly statistically significant. It shows that educational expectation has a significant impact on educational expenditure, and the educational investment behavior of family is closely related to family characteristics. The educational expectation brought by family structure and

background is one of the important influencing factors, that is, the educational expectation is influenced by the educational expectation rather than the judgment of the investment behavior.

The higher the amount of family education investment, the higher the proportion, the higher the risk, that is, the more unreasonable the investment.

Studies have shown that parents' educational anxiety is positively correlated with their family's educational cost. Therefore, the resulting excessive educational expenditure will further cause the emergence of family and social educational problems.

. regress qn6015 pd5ckp

Source	SS	df	MS	Number of obs	=	33,097
Model	3514.06315	1	3514.06315	F(1, 33095)	=	146.75
Residual	792495.359	33,095	23.9460752	Prob > F	=	0.0000
				R-squared	=	0.0044
				Adj R-squared	=	0.0044
Total	796009.422	33,096	24.0515295	Root MSE	=	4.8935

qn6015	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
pd5ckp	.115969	.0095731	12.11	0.000	.0972053	.1347327
_cons	6.099669	.0752792	81.03	0.000	5.952119	6.247219

Figure 4. Relationship between total educational expenditure and educational problems

It can be concluded from Table 3 that the greater the amount of investment, the more serious the education problem (qn6015), that is, there is unreasonable. There is a significant relationship between total education expenditure recognition (pd5ckp) and education problems. When other variables were controlled, for every one unit increase in the recognition of total education expenditure, the average

increase of educational problems was about 0.115969 units. This relationship is highly statistically significant, indicating that the recognition of total education expenditure has a significant impact on educational problems. It can be seen from the data that the impact of the recognition of total education expenditure on educational problems cannot be ignored, suggesting that the recognition of total education

expenditure maybe an important factor affecting educational problems.

8. Suggestions

The main idea mentioned in human capital theory (Schultz, Becker) is that the role of education is to improve human capital and thus promote economic development, and education itself is a kind of human capital investment. Therefore, increasing funding for education as A fundamental factor in economic development, as well as the need for A far-reaching expansion of participation in compulsory and higher education [14], especially at the compulsory stage, To explore how changing the educational model of the family and parents' education of their children are key factors to help children develop and grow better. Parental self-efficacy in helping children succeed in school focuses on the extent to which parents believe that through their involvement, they can have a positive impact on their children's educational outcomes[11]. Studies have found that children achieve more when schools and families work together [12], as compared to just a single investment in education.

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