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Original Paper

Analysis of the Impact of Family Education Level on Household Income: A Study Based on the CHFS Database

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Abstract

Education and income have long been recognized as important factors in social and individual economic development. It is widely believed that higher levels of education provide individuals with better employment opportunities, career development, and income growth prospects. Therefore, studying the changes and variations in the relationship between family education level and income is crucial for understanding socioeconomic inequality and formulating relevant policies. This paper utilizes microdata from the China Household Finance Survey and Research Center (CHFS-2019), employs the imputation method to measure family education level and total household income, and employs a multiple regression model to empirically analyze the impact of family education level on total household income. The research findings indicate a significant positive correlation between the highest educational attainment within a family and total household income, suggesting that an improvement in education level may have a positive impact on the family's economic status. Furthermore, age exhibits a negative relationship with total household income, implying that aging may impose limitations on individual income growth. Additionally, further analysis on regional and urban-rural factors reveals that the relationship between family education level and total household income is more significant in urban areas and the eastern region.

Keywords

family education level, total household income, property income

1. Introduction

The relationship between family education level and income has been a prominent topic in social and economic research. Early studies primarily focused on the impact of education on individual income, emphasizing education as a crucial component of human capital. However, with further research and abundant data, there is a growing recognition of the significant influence of family factors on individual economic conditions, leading to increased attention on the relationship between family education level and total household income.

This study aims to explore the relationship between family education level and total household income, while further analyzing the influence of regional and urban-rural factors on this relationship. To achieve this goal, we utilized microdata from the China Household Finance Survey and Research Center (CHFS) database and conducted regression analysis on variables such as education level, income level, age, family debt, party membership, and gender.

Through the analysis, it was found that there is a significant positive correlation between the highest educational attainment within a family and total household income, indicating that an improvement in education level may have a positive impact on the family's economic status. Additionally, age exhibited a negative relationship with total household income, suggesting that aging may impose limitations on individual income growth. Furthermore, the study also found that total family debt has a positive impact on total household income, which may imply the influence of family debt on the family's economic condition.

Meanwhile, this paper also conducted further analysis on regional and urban-rural factors. The results revealed a more significant relationship between family education level and total household income in urban areas and the eastern region. This could be attributed to the higher level of economic development in these areas, with a greater emphasis on the importance of education and human capital. However, in rural areas and the western region, the impact of family education level on total household income was weaker, possibly due to factors such as regional economic development levels and uneven distribution of educational resources.

The research findings are of significant importance for understanding the changes and variations in the relationship between family education level and income. They provide insights into how to improve family economic conditions and reduce socioeconomic inequality. Additionally, the results offer references for formulating education and economic policies tailored to different regional and urban-rural backgrounds. However, it is important to note that this study has some limitations. Firstly, the data used in this paper is derived from the China Household Finance Survey (CHFS) database, which, despite its large sample size and representativeness, may still have possible data collection and measurement errors. Secondly, this study employed cross-sectional data, which cannot capture the causal relationship between family education level and income. Future research could consider using panel data for more in-depth analysis. Despite these limitations, this study provides important insights into the relationship between

family education level and income. It is of significant relevance for understanding the mechanisms behind socioeconomic inequality, formulating relevant policies, and promoting educational equity.

2. Literature Review

Groothuis and Gabriel conducted a study on the extent to which one spouse's education level can influence the productivity and income of the other spouse. The research findings indicate that when there is complementarity in education level and skill level between spouses, one spouse can have a positive impact on the other spouse's productivity and income (Groothuis & Gabriel, 2010). Mesra conducted empirical research and found that the level of education significantly influences the income of housewives (Mesra, 2018). Foreign scholars have conducted studies on developing countries in Latin America and developed countries like the United States, and have found that in the process of social development and progress, the proportion of people with similar education levels marrying each other is increasing, especially among highly educated women. This phenomenon is attributed to the fact that education level largely reflects individual taste and values. The similarity in personal taste and values plays a crucial role in the stability of the family, thereby promoting an increase in household income to some extent. Domestic scholars have also reached similar conclusions. Zheng Zunlai proposed that education has important socio-economic functions, as individuals with good education can find better spouses, which is one aspect of the social function of education. The economic function of education mainly lies in its ability to increase individual income, and even household income (Zheng, 2020). He Xiuling and Lin Limei, based on data from the China General Social Survey (CGSS), used the Probit model to analyze the relationship between per capita household income and the education level of childbearing-age women. The data showed that women's education level influences their income, which in turn affects their fertility intentions (He & Lin, 2021). The level of education plays an important role in economic inequality and intergenerational transmission, thus attracting extensive attention from scholars. Previous research on the relationship between spousal education level and income change has mainly focused on the impact of educational matching between spouses on individual income, while there is relatively less research on the impact of education level on family income.

3. Data Source, Variable Selection, and Model Design

3.1 Data Source and Sample Selection

This study uses the China Household Finance Survey (CHFS) database as the source of research data. The CHFS database is a large-scale dataset covering the entire country, providing rich information on household income, education level, and other economic indicators. For this study, we selected a sample from this database that is suitable for our research purposes. In terms of sample selection, we followed the following steps based on the specific objectives and requirements of the study. First, we screened the sample data for relevant variables in the research field. Then, based on data availability and quality, we further selected sample observations that meet the requirements of the study. Finally, we ensured the

representativeness and reliability of the sample, as well as the statistical significance and generalizability of the results.

3.2 Variable Definition and Measurement

In this study, we focus on the relationship between family education level and income, and therefore, selected the following key variables for analysis:

Dependent variable: Total_income: This variable represents the total income of the family, including income from various sources such as wages, business income, and property income.

Independent variable: Max_degree: This variable represents the highest level of education among family members, typically classified by educational attainment (e.g., primary school, middle school, high school, college, etc.).

In addition to the above key variables, we will control for the following other relevant variables:

Age: The age of family members, an important indicator of individual characteristics.

Total_debt: The total debt amount of the family, reflecting the financial situation and debt pressure of the family.

Party_membership: Indicator of whether family members are party members, which may have an impact on income level.

Gender: The gender of family members, which may have differential effects on education level and income.

The measurement of the above variables follows the definitions and measurement standards of the CHFS database, ensuring the accuracy and comparability of the data.

Table 1. Descriptive Statistics

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
total_income	33,495	83,483	205,867	-5.493e+06	1.212e+07
Gender	34,643	1.247	0.431	1	2
Party_membership	34,599	1.825	0.380	1	2
max_degree	34,641	4.233	1.878	1	9
ln_total_income	32,649	10.61	1.450	-1.894	16.31
ln_total_debt	34,643	3.280	5.083	0	17.52

3.3 Model Design

In order to analyze the relationship between family education level and income, and explore the moderating effect of regional factors, this study adopts a regression analysis method and establishes a multiple linear regression model. The model includes the maximum degree of the family as the explanatory variable and the total income of the family as the dependent variable, while controlling for

other relevant variables such as age, total debt, party membership, and gender. The basic form of the model is as follows:

$$ln\_total\_income = \beta0 + \beta1 * max\_degree + \beta2 * age + \beta3 * ln\_total\_debt + \beta4 * Party\_membership + \beta5 * Gender + \varepsilon$$

In the model, ln_total_income represents the natural logarithm of the total income of the family, max_degree represents the categorical variable of the family's highest education level, age represents the age of family members, ln_total_debt represents the natural logarithm of the total debt of the family, Party_membership represents a binary variable indicating party membership (1 for non-party members, 2 for party members), and Gender represents a binary variable indicating the gender of family members (1 for female, 2 for male). β0 is the intercept term, and β1 to β5 are the regression coefficients. ε represents the error term.

4. Empirical Analysis

4.1 Regression

The regression results of the relationship between family education level and family income are presented in Table 2. The results indicate a significant positive correlation between family education level and family income, which is statistically significant at the 1% level. This is primarily due to the fact that higher family education levels are typically associated with better employment opportunities and career development prospects. Individuals with a good education often possess more professional skills and knowledge, making them more likely to obtain high-paying positions or better job opportunities. In a family context, if both spouses have received a good education, they are often able to secure higher-paying jobs, thereby increasing the overall family income.

Age also has a significant impact on total family income. The regression results show a negative correlation between age and total family income, indicating that an increase in age has a negative effect on total family income. This may be because as individuals age, their work experience and skills may reach a saturation point, imposing limitations on income growth.

Total family debt also has a significant impact on total family income. The regression results reveal a positive correlation between an increase in total family debt and an increase in total family income, indicating that an increase in the level of family indebtedness may have a positive effect on total family income. This could be because an increase in debt reflects proactive behavior in terms of assets and investments, resulting in additional sources of income.

These findings contribute to a better understanding of the relationship between family education level and income, as well as the influencing factors involved. They provide a scientific basis for formulating relevant policies and making recommendations.

Table 2. Regression Results

	(1)
VARIABLES	y
ln_total_income	0.421***
	(20.67)
age	-0.039***
	(-18.44)
ln_total_debt	0.003
	(0.54)
Party_membership	-1.054***
	(-15.39)
Gender	0.353***
	(6.18)
Constant	3.404***
	(10.59)
Observations	3,503
R-squared	0.269

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.2 Heterogeneity Analysis

4.2.1 Urban-Rural Heterogeneity

This survey covers the entire country, and considering the significant income disparity and educational differences between rural and urban residents, we conducted separate regression analyses for urban and rural residents. The regression results for urban-rural heterogeneity are presented in Table 3 below.

Table 3. Urban-rural Heterogeneity Regression Results

	(1)	(2)
	Rural areas	Urban areas
ln_total_i~e	0.358***	0.446***
	(0.01)	(0.01)
age	-0.0316***	-0.0378***
	(0.00)	(0.00)
ln_total_d~t	0.0284***	0.0227***
	(0.00)	(0.00)
Party_membership	-0.492***	-0.873***
	(0.04)	(0.03)
Gender	-0.190***	0.173***
	(0.04)	(0.02)
_cons	2.725***	3.204***
	(0.18)	(0.12)
N	11375	21221

Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

According to Table 3, the impact of higher education on urban household income is more significant compared to rural household income. This result may be attributed to the relatively mature and diversified economic development in urban areas. Urban areas offer more job opportunities and higher salary levels. Individuals with higher education are often able to access better job opportunities, which are typically located in urban areas. Urban areas have more advanced and diverse industrial structures that require higher levels of skills and knowledge, making it easier for individuals with higher education to find high-paying jobs in urban areas.

Furthermore, educational resources are more abundant in urban areas. Urban areas have more schools, universities, and training institutions, providing a wider range of educational choices. This allows residents in urban areas to have easier access to high-quality education. In contrast, educational resources in rural areas are relatively scarce, with fewer schools and limited teaching staff and educational facilities. As a result, residents in rural areas face more educational constraints and unequal opportunities.

4.2.2 Regional Heterogeneity

Due to the disparities in economic development levels and educational resource endowments among different regions in China, it is also possible for the impact of education level on household income to vary. To better investigate this issue, this study divides the original data into four groups based on the Eastern, Central, Western, and Northeast regions, and conducts separate regressions for each group.

Table 4. Regional Heterogeneity Regression Results

	(1) Eastern regions	(2) Central regions	(3) Western regions	(4) Northeast regions
ln_total_i~e	0.500***	0.438***	0.467***	0.421***
	(0.01)	(0.01)	(0.01)	(0.02)
age	-0.0370***	-0.0438***	-0.0352***	-0.0390***
	(0.00)	(0.00)	(0.00)	(0.00)
ln_total_d~t	0.0222***	0.0176***	0.0287***	0.00298
	(0.00)	(0.00)	(0.00)	(0.01)
Party_membership	-0.813***	-0.861***	-0.833***	-1.054***
	(0.04)	(0.05)	(0.04)	(0.07)
Gender	0.216***	0.148***	0.248***	0.353***
	(0.03)	(0.04)	(0.04)	(0.06)
_cons	2.281***	3.310***	2.350***	3.404***
	(0.16)	(0.23)	(0.19)	(0.32)
N	12196	7123	9774	3503

Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

The regression results show that the Eastern region exhibits a stronger relationship between higher education levels and household income compared to other regions. This may be attributed to the relatively better economic development in the Eastern region, which provides more opportunities for higher education and career advancement, thereby offering families greater access to education and employment opportunities. The Central and Western regions also demonstrate a positive correlation between education level and income, but the relationship is relatively weaker compared to the Eastern region. The Northeast region shows a lower relationship between education level and income, which may be associated with the region's relatively lagging economic development, limited employment opportunities, and uneven distribution of educational resources. The differences between regions and between urban and rural areas significantly influence the relationship between education level and income. In conclusion, based on the data analysis and results, the following conclusions can be drawn: Firstly, there is a positive correlation between the highest education level in a family and total household income, indicating that higher education levels can promote income growth within households. This aligns with the expectations of human capital theory, which suggests that an increase in education level can enhance an individual's labor market value, leading to higher income. Regional and urban-rural disparities have a significant impact on the relationship between education level and income within households. These disparities may

involve factors such as economic development level, allocation of educational resources, and employment opportunities.

5. Policy and Practice Implications

Based on the findings of this study, the following policy and practice implications are proposed:

Firstly, education policies should focus on improving education levels, particularly in disadvantaged and rural areas. The government can increase investment, provide more educational resources and opportunities, promote educational equity, and ensure that every family has access to quality education.

Secondly, attention should be given to employment and training opportunities for different age groups. Continuous learning and retraining opportunities should be provided for older individuals to enhance their skills and employment prospects, thereby promoting income growth.

Additionally, there should be strengthened supervision and guidance on family debt management and risks to avoid unsustainable debt burdens and financial risks. Families should enhance their awareness and capabilities in financial planning and debt management to ensure the reasonable use and repayment of debts.

Regarding the impact of party membership and gender on income, further research and analysis are needed to understand the reasons and mechanisms behind them, in order to formulate relevant policies and measures that promote equal employment opportunities and career development.

Lastly, the government and relevant stakeholders should pay attention to the influence of regional and urban-rural disparities on the relationship between family education levels and income. Measures should be taken to promote balanced regional development, reduce regional disparities, and improve the balanced allocation of educational resources and distribution of employment opportunities. Additionally, there should be strengthened infrastructure development and public services in rural areas, providing more education and training opportunities to improve the education levels and employment prospects in rural areas and enhance the income levels of rural families.

In conclusion, this study provides empirical analysis on the relationship between family education levels and income, as well as explores the influence of regional and urban-rural disparities on this relationship. The research findings have important implications for formulating education and employment policies and addressing inequalities between regions and urban-rural areas. Through appropriate policy measures and practices, educational equity and economic development can be promoted, and family income levels can be improved, leading to sustainable social development and people's well-being.

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References

Groothuis, P., & Gabriel, P. E. (2010). Positive assortative mating and spouses as complementary factors of production: A theory of labour augmentation. *Applied Economics*, *42*(9), 1101-1111. https://doi.org/10.1080/00036840701721141

Han, X. (2020). *The Impact of Provincial Education Human Capital on Intergenerational Education Transmission in China*. Beijing Jiaotong University.

He, X., & Lin, L. (2021). Per Capita Family Income, Women's Education Level, and Fertility Intention of Childbearing Women of Childbearing Age in China: An Empirical Analysis Based on CGSS 2017 Data. *Fujian Forum (Humanities and Social Sciences Edition)*, *2021*(3), 98-108.

Mesra B. (2018). Factors That Influencing Households Income And Its Contribution On Family Income In Hamparan Perak Sub-District, Deli Serdang Regency, North. *Int. J. Civ. Eng. Technol*, *9*(10), 461-469.

Xiao, Q., & Zhang, B. (2022). The Impact of Women's Education Level on Family Consumption Upgrading. Science. *Technology and Industry*, *22*(5), 33-38.

Zheng, Z. (2020). *The Impact of Spouses' Education Levels on Family Income*. Xiangtan University.