

The Impact of Education Level on Real Estate Asset Allocation

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Abstract. As an important asset class, the allocation decision of real estate is of great significance to the wealth accumulation of individuals and families. This paper builds a theoretical framework based on the theoretical perspective of human capital, takes the CHFS database in 2015, 2017 and 2019 as the benchmark, and constructs the Probit model, two-way fixed effect model and intermediary effect model to carry out empirical testing, revealing the causal relationship and mechanism between education level and real estate asset allocation. The results show that the education level significantly increases the individual real estate asset allocation, and this causality is still significantly established under multiple robustness tests. Financial information attention and financial knowledge play an important intermediary role in this process. In addition, the impact of educational level on real estate asset allocation was more obvious in the urban sample than in the rural groups. This study not only enriches the theoretical basis of relevant fields, but also provides a scientific basis for policy makers, which helps to optimize the allocation of resources in the real estate market and promote the sustainable economic development.

Keywords: Real estate assets; education level; financial information attention; intermediary effect.

1. Introduction

In the context of global economic integration, real estate, as one of the important economic fields, has a profound impact on the wealth accumulation and economic development of individuals, families and even the country [1]. Especially in China, the real estate market has experienced rapid development and has become one of the important pillars to support economic growth. However, as the market increasingly matures and complexity, the allocation decision of real estate assets has become more and more complex and difficult. In this context, it is particularly important to study how individuals make real estate asset allocation decisions, and which factors influence these decisions [2].

As an important indicator to measure the individual ability and social status, the education level plays an important role in the real estate asset allocation. With the general improvement of education level, people's knowledge structure and cognitive ability have been greatly expanded, which will naturally affect their decisions on real estate asset allocation [3]. On the one hand, the improvement of education level may enable individuals to analyze market dynamics more rationally and grasp investment opportunities; on the other hand, education may also affect individuals' risk preference, investment concept and other factors, thus further affecting their real estate asset allocation decisions. Therefore, it is of great significance to deeply study the influence of education level on real estate asset allocation to understand individual economic behavior and optimize the resource allocation in the real estate market.

This paper will use the method of empirical research, using the CHFS database in 2015, 2017, and 2019 as the benchmark to construct Probit model, two-way fixed effect model and intermediary effect model to carry out empirical test, in order to reveal the causal relationship and the mechanism of action between education level and real estate asset allocation. This study not only reveals the internal relationship between education level and real estate asset allocation, but also provides a scientific basis for policy makers and a reference for investors in decision-making.

2. Literature Review and Research Hypotheses

2.1. Education Level and Real Estate Asset Allocation

The theory of human capital is widely recognized in the academic field, and its core view is to emphasize the decisive role of individual investment such as education, training and skills in individual productivity and economic performance [4]. This theory regards education not only as the accumulation of knowledge, but also as a long-term investment, through which individuals can significantly improve their knowledge reserve, skill level and production capacity, so as to obtain higher economic returns in the future [5]. Explore the influence of education on real estate asset allocation. First, from the perspective of the income effect, an increase in education is usually accompanied by an increased income. As income increases, individuals have more capital for asset allocation without being limited to a single real estate sector [6]. They began to invest their capital in more diverse areas, such as stocks and bonds, to diversify their assets and diversify their risks. Second, the improvement of education is also accompanied by increased risk awareness. Higher educated people tend to have a deeper understanding of the financial market and investment risks, which makes them pay more attention to risk control and diversification in asset allocation [7]. This risk awareness makes the highly educated people more cautious and rational in making real estate investment decisions, and their real estate assets are better quality. In addition, the demand for educational resources is also an important factor affecting the real estate asset allocation. Higher educated families tend to pay more attention to their children's education and development, so they may be more willing to buy houses in areas with quality educational resources [8]. This demand drives the rise of real estate prices in specific areas, but also reflects the profound impact of educational resources on the property market. Therefore, this paper proposes that the study hypothesis H1.

H1: Education level will increase the individual's real estate asset allocation.

2.2. Education Level, Financial Information Attention and Real Estate Asset Allocation

There is a significant positive correlation between the education level and the attention to financial information. Specifically, with the improvement of individual education level, their attention to financial information also shows an increasing trend. This phenomenon can be explained from multiple perspectives. First, the deepening of education not only expands the knowledge field of individuals, but also improves their information processing ability, enabling them to more effectively analyze and evaluate the value of financial information. This ability makes it easier for them to identify the financial dynamics that are closely related to their own investment decisions, which in turn increases their attention to financial information [9]. Secondly, the improvement of education level is also accompanied by the deepening of individual understanding of the importance of financial knowledge, which further encourages them to actively seek and pay attention to financial information, so as to make more sensible and reasonable decisions in financial activities such as real estate asset allocation [10]. Therefore, it can be considered that the education level is one of the important factors affecting the attention of financial information, which indirectly acts on the individual real estate asset allocation behavior through the influence of information processing ability and financial knowledge understanding. Financial information attention plays a vital role in the process of real estate asset allocation. For those individuals who pay close attention to financial information, they are often able to assess the risks and benefits more comprehensively when allocating real estate assets [11]. Specifically, they pay close attention to market dynamics, such as price fluctuations, supply and demand relations, and the impact of policy changes on the real estate market. These detailed observations and analysis enable them to predict market trends more accurately, so as to make more rational investment decisions [12]. In addition, individuals with high attention to financial information show significant advantages in identifying investment opportunities. They not only deeply study market data, but also explore potential high-quality investment targets by analyzing industry trends and interpreting economic data [13]. This keen market insight and judgment, enable

them to seize the fleeting investment opportunities in the complex real estate market. Therefore, the study hypothesis H2.

H2: Financial information attention plays an intermediary role in the impact of educational level on real estate asset allocation. That is, the education level will increase the individual's real estate asset allocation by increasing the attention of individual financial information.

2.3. Education Level, Financial Knowledge and Real Estate Asset Allocation

There is a positive correlation between educational attainment and financial knowledge. With the improvement of individual education level, their ability to obtain, process and apply financial information is also increased accordingly [14]. On the one hand, highly educated individuals have a deeper understanding of how the financial market operates. They can clearly grasp the supply and demand relationship of the market, understand the internal mechanism of price formation, and have an insight into the behavior patterns of market participants [15]. This deep understanding of the market enables them to predict market trends more accurately and provide strong guidance for real estate asset allocation. On the other hand, individuals with high educational levels have more accurate cognition of different investment tools [16]. They understand the characteristics, risks and returns of various financial instruments, and can choose the appropriate investment instruments for asset allocation according to their own investment objectives and risk tolerance [17]. This precise cognition enables them to flexibly allocate assets in the real estate market and realize the steady appreciation of wealth [18]. Financial knowledge plays a crucial role in individual real estate asset allocation decisions. Individuals with rich financial knowledge can assess the risks and benefits more comprehensively and accurately when making investment decisions in the real estate market [19]. They not only pay attention to the price changes and rental income of the real estate market, but also can conduct in-depth analysis from the macro economy, policy environment, market supply and demand and other dimensions, so as to make more rational investment choices [20]. For example, they may analyze the impact of macroeconomic policies on the real estate market and predict the future trend of housing prices or focus on the changes in the market supply and demand relationship and look for investment opportunities. At the same time, individuals with rich financial knowledge are better at identifying investment opportunities in the real estate market [21]. They can find out through market research, data analysis and other means, potential high-quality investment targets, and grasp the investment opportunity. This keen market insight and judgment enable them to obtain higher returns in the real estate market. Therefore, this paper proposes that the study hypothesis H3.

H3: Financial knowledge plays an intermediary role in the influence of educational level on real estate asset allocation. That is, the education level will increase the individual's real estate asset allocation by increasing the individual's financial knowledge.

3. Research Design

3.1. Variable Selection

The explained variable in this paper is the real estate asset allocation. This paper measures the allocation of individual real estate assets from two aspects, 1 is whether to hold the property (D_House), which is a virtual variable, when the individual holds the property, the variable equals to 1, otherwise the value is 0; the second is the property proportion (P_House), using the ratio of the house assets to the total asset value as the proxy variable. Educational level is the explanatory variable of this paper. Education level refers to the range and level of knowledge and skills acquired by a person, which usually includes multiple fields such as culture, science, technology, society and history. The level of education is often determined by many factors, such as school education, family education and social environment. In the survey, the education level was divided into nine categories: no school, primary school, primary school, middle school, senior high school, technical secondary school (vocational high school), junior college (higher vocational college), university undergraduate, master's degree, doctor's degree, and the value of 1-9 from small to large. This paper selects financial

information attention and financial knowledge as the intermediary variables. Financial information attention refers to the degree of people pay attention to all kinds of financial information in economic life, which reflects the investment willingness of individuals. In the process of variable construction, the attention of financial information is directly defined based on issues related to CHFS. Financial knowledge refers to an individual or organization's understanding of financial markets, financial instruments and products, and the ability to use them to make informed financial decisions, reflecting an individual's investment ability. Specifically, this paper analyzed the respondents' understanding and cognition of interest rate calculation, inflation and investment risk, and used the main factor analysis method to extract variables related to financial knowledge. Next, this paper weighted the extracted factors according to the ratio of variance contribution rate to cumulative variance contribution rate in the two-factor rotation matrix, to obtain a comprehensive financial knowledge score index for comprehensively evaluate the financial knowledge level. In this paper, age, marriage, gender, health status, family size, total family income, financial industry practitioners in the home, risk preference, property Sharp rate and economic environment were selected to control the interference of other factors as much as possible and ensure the unbiased nature of the regression results. All the variables are shown in the following Table 1.

Table 1. Variable selection and definition

type	Variable name	Variable abbreviation	Variable definition
explained variable	Whether to own the property	<i>D_House</i>	The value of the held property is 1, otherwise, it is 0
	Share of property	<i>P_House</i>	The proportion of housing assets in the total assets
explanatory variable	Education level	<i>edu</i>	Have not been to school, primary school, junior high school, senior high school, technical secondary school (vocational high school), junior college (higher vocational college), university bachelor's degree, master's degree, doctor's degree, from small to large, assigned the value of 1-9
metavariable	Financial information attention	<i>att</i>	According to the interviewees, the high attention value is assigned to 1, otherwise it is 0
	Financial knowledge	<i>kno</i>	Yin Zhichao (2014)
controlled variable	age	<i>age</i>	Current year-year of birth
	marriage	<i>marriage</i>	Married take 1, otherwise 0
	sex	<i>gender</i>	And 1 for males and 0 for females
	health condition	<i>health</i>	Health level 1-5 is good-bad
	Family size	<i>size</i>	Total family population
	Household income	<i>lnincome</i>	Total income household log value
	There are people working in the financial industry	<i>fin</i>	There is a financial industry practitioner in the home for 1, otherwise it is 0
	Risk appetite	<i>risk</i>	Degree of risk preference 1 – 5 corresponds to no-preference-preference
	Real estate Sharp rate	<i>Sha</i>	Property Sharpe rate index
	economic environment	<i>lnPGDP</i>	The log of per capita GDP value of the province

3.2. Data Sources

The individual-level data in this paper are all obtained from the CHFS database, namely the China Household Finance Survey (China Household Finance Survey) database, which is a nationally representative household-level financial database. The CHFS database is operated and managed by the China Family Finance Survey and Research Center and aims to comprehensively collect the financial information of Chinese families through scientific sampling survey methods. The CHFS database survey covers household financial assets and non-financial assets, including housing assets, liabilities and credit constraints, income, consumption, social security and insurance, demographic characteristics, employment, and payment habits. This comprehensive survey content enables the CHFS database to comprehensively and carefully depict the family economic and financial behavior. The sample data of CHFS database is scientific and accurate. The stratification, the sampling design method proportional to scale measurement (PPS) is adopted in data collection, and the sample data is collected and updated in combination with field visits and quarterly telephone visits. Economic and environmental data at the provincial level are derived from the China Statistical Yearbook.

The obtained raw data are processed as follows. (1) The absolute value data of a large magnitude is log-treated to alleviate the possible heteroscedasticity problem caused by the large difference in magnitude. Such as total family income, etc. (2) All continuous variables were bilateral tailed at the 1% level to alleviate the interference caused by extreme values as much as possible. In this paper, using the combined CHFS databases from 2015,2017,2019 and 2019,17,254 valid samples were obtained.

3.3. Descriptive Statistical Analysis

The basic descriptive statistics of the variables are shown below in Table 2.

Table 2. Descriptive Statistical Analysis

VarName	Obs	Mean	SD	Min	Median	Max
D_House	17254	0.95	0.22	0	1	1
P_House	17254	0.87	0.21	0	1	1
edu	17254	3.31	1.51	1	3	9
div	17254	0.16	0.15	0	0.162	1
att	17254	0.16	0.32	0	0	1
age	17254	54.25	12.61	26	54	83
marriage	17254	0.89	0.31	0	1	1
gender	17254	0.79	0.41	0	1	1
health	17254	2.68	0.97	1	3	5
size	17254	3.46	1.56	1	3	8
lnincome	16865	10.50	1.67	0	10.820	13.140
fin	17254	0.01	0.08	0	0	1
risk	17254	2.10	2.20	0	1	5
Sha	17254	0.10	0.03	0	0.107	0.152
lnPGDP	17254	10.97	0.43	10.172	10.929	12.009

3.4. Model Construction

Since the data sample used in this paper is family survey data across years, it is appropriate to choose a panel effect model. There is dual heterogeneity between years and individuals, thus, in this paper, the empirical test will be carried out on the basis of this model. Specifically, since whether to hold the property (D_House) is a virtual variable, this paper selects Probit as the benchmark, as shown in (1), (2) and (3) respectively.

$$D_House *_{it} = \alpha_0 + \alpha_1 edu_{it} + \alpha_2 CONTROLS_{it} + \theta_i + \sigma_t + \varepsilon_{it} \quad (1)$$

$$D_House_{it} = \begin{cases} 1, & \text{if } D_House_{it} > 0 \\ 0, & \text{if } D_House_{it} \leq 0 \end{cases} \quad (2)$$

$$Pr(D_House_{it} = 1) = Pr(D_House_{it} > 0) = \vartheta(\alpha_0 + \alpha_1 edu_{it} + \alpha_2 CONTROLS_{it} + \theta_i + \sigma_t + \varepsilon_{it}) \quad (3)$$

To calculate the probability, the relationship with the satisfaction formula (2) is the conversion function. i mean the i th survey user, and t is the t -th year. Is one of the cores explained variables, indicating whether the i th respondent holds the property in the t year. Is the constant term in the model. It is the core explanatory variable, the corresponding coefficient to be estimated, and the expected result is positive, that is, the education level helps to increase the probability of holding a property. For the many control variables selected in this paper, they are individual fixed effects, year fixed effect, and random disturbance terms.

$$P_House_{it} = \beta_0 + \beta_1 edu_{it} + \beta_2 CONTROLS_{it} + \theta_i + \sigma_t + \varepsilon_{it} \quad (4)$$

Property ratio (P_House) is a continuous variable, so OLS is selected as the benchmark model in this paper, and the above is the model setting. The proportion of the property in the t -year of the i th survey respondents. Is the constant term in the model. Still the core explanatory variable, the core coefficient concerned here, and the expected result is positive. Other parameters remain the same.

$$M_{it} = \gamma_0 + \gamma_1 edu_{it} + \gamma_2 CONTROLS_{it} + \theta_i + \sigma_t + \varepsilon_{it} \quad (5)$$

$$P_House_{it}(D_House_{it}) = \delta_0 + \delta_1 edu_{it} + \delta_2 M_{it} + \delta_3 CONTROLS_{it} + \theta_i + \sigma_t + \varepsilon_{it} \quad (6)$$

The mediating effect model aims to identify whether there is a mediating variable in the causal relationship connecting the independent variable and the dependent variable, the independent variable has an influence on the dependent variable by influencing the mediating variable. This paper introduces a three-step mediation effect to complete the analysis. The specific model setting is shown in Equations (5) and (6). Equation (5) will test whether the individual education level is promoted (investment attention and investment ability), reflected by the coefficient. Equation (6) will test whether it promotes its real estate asset allocation, including two aspects, reflected by the coefficient. If the coefficient and significant are both, it indicates that the intermediary effect of investment attention and investment ability exists.

4. Empirical Results and Analysis

4.1. Benchmark Regression

Benchmark regression results are shown below in Table 3. The regression results for uncontrolled variables were reported in columns (1) and (2) and in columns (3) and (4). In the absence of controlled variables, the influence coefficient of education on D_House and P_House was 0.0770 and 0.0092, respectively, which passed the significance test at the 1% level, indicating that education would increase the probability and ratio of individual real estate asset allocation. After the addition of control variables, the influence coefficient of education level on D_House and P_House was significantly 0.1056 and 0.0111, respectively, which once again proves the positive impact of education level on real estate asset allocation. The study hypothesis that H1 was confirmed.

The improvement of education level significantly affects the individual real estate asset allocation strategy. With the improvement of education level, the income level of individuals generally increases, and financial literacy and risk awareness are also enhanced correspondingly enhanced, which makes them more rational and comprehensive in asset allocation [6]. In addition, the demand for educational resources from highly educated families also promotes their decision to buy houses in quality school districts, further increasing the allocation of real estate assets [8]. Therefore, the improvement of the education level not only improves the economic ability of individuals, but also changes their investment philosophy, and ultimately increases the proportion and strategic choice of individuals in the real estate asset allocation.

Table 3. Benchmark regression results

	(1) D_House	(2) P_House	(3) D_House	(4) P_House
edu	0.0770*** (5.5367)	0.0092*** (8.1081)	0.1056*** (6.5716)	0.0111*** (8.7150)
age			0.0019 (1.0873)	-0.0005*** (-3.5000)
marriage			0.1412** (2.2933)	0.0016 (0.2861)
gender			-0.0259 (-0.5352)	-0.0058 (-1.4062)
health			-0.0099 (-0.4792)	0.0039** (2.2314)
size			0.0679*** (4.6973)	0.0080*** (6.7703)
lnincome			-0.0397*** (-2.8456)	-0.0051*** (-4.8751)
fin			-0.0162 (-0.0619)	-0.0303 (-1.4667)
risk			-0.0233 (-0.9721)	0.0037* (1.9145)
Sha			-0.4475 (-0.7751)	0.1231** (2.4438)
lnPGDP			-0.1796*** (-3.5828)	-0.0060 (-1.3377)
_cons	1.6633*** (25.5405)	0.8433*** (194.9184)	3.6559*** (6.5612)	0.9187*** (18.6605)
Note: *** p < 0.01, ** p < 0.05, * p < 0.1, with t statistics in parentheses				

4.2. Robustness Test

Multiple forms form robustness tests of replacement of explained variables, fixed effects of control province, and PSM. Specific instructions are as below in Table 4. Measurement error is one of the important reasons for the model regression bias. Changing different variable measurement methods is helpful to alleviate the estimation bias caused by measurement error, and further strengthen the effectiveness of the empirical results. Specifically, this paper chooses the log value of housing assets as the proxy variable of real estate asset allocation here and carries out the regression analysis again. The results are as follows. The influence coefficient of education level on the log value of housing assets is 0.3382, which is positively significant at the level of 1%, indicating that the education level will significantly increase the real estate asset allocation of individuals, which is well consistent with the previous one.

Table 4. Replacement was explained by explanatory variable robustness test

	Coefficient		Coefficient
edu	0.3382*** (27.6874)	lnincome	0.1236*** (12.8552)
age	0.0014 (0.9775)	fin	-0.0110 (-0.0572)
marriage	0.2324*** (4.3607)	risk	-0.0114 (-0.6675)
gender	-0.2222*** (-5.7657)	Sha	3.3028*** (6.7974)
health	-0.0796*** (-4.9132)	lnPGDP	0.7161*** (16.3492)
size	0.0940*** (8.5193)	_cons	1.3677*** (2.8429)

Changing the regression model can provide multiple estimation results under different model Settings, thus strengthening the robustness of the regression results. Therefore, this paper adds the provincial fixed effect based on the original year and the individual bidirectional fixed effect, conducts the regression analysis again. The results are shown in Table 5. The influence coefficients of education level on D_House and P_House were significantly 0.1178 and 0.0116, respectively, which once again proved the positive impact of education level on real estate asset allocation.

Table 5. Control the province fixed effect

	(1) D_House	(2) P_House
edu	0.1178*** (7.1148)	0.0116*** (9.0251)
age	0.0024 (1.3519)	-0.0005*** (-3.1795)
marriage	0.1310** (2.1216)	0.0016 (0.2792)
gender	-0.0362 (-0.7410)	-0.0064 (-1.5335)
health	-0.0073 (-0.3523)	0.0039** (2.2217)
size	0.0664*** (4.4944)	0.0075*** (6.2478)
lnincome	-0.0403*** (-2.8516)	-0.0049*** (-4.6314)
fin	-0.0551 (-0.2099)	-0.0338 (-1.6383)
risk	-0.0220 (-0.9190)	0.0041** (2.1215)
Sha	-2.1575 (-1.4658)	0.1876 (1.5893)
lnPGDP	0.2645 (1.3957)	-0.0095 (-0.6285)
_cons	-1.3021 (-0.6054)	0.9488*** (5.5040)
Insig2u	-0.9712*** (-4.6780)	
N	16864	16865

Note: *** p < 0.01, ** p < 0.05, * p < 0.1, with t statistics in parentheses

Self-selection bias is also one of the important factors that may interfere with the regression results of this paper. Individuals with better education may naturally show differences in property asset allocation with individuals with poorer education due to differences in other factors. The propensity score matching method (Propensity Score Matching, PSM) is a widely used method in economics to deal with self-selection bias. It is mainly used to compare the correlation between two groups of data, detect the deviation between two groups of data, and compare the difference between two groups of data. In this paper, PSM will be used to select the individuals with the most similar characteristics to alleviate self-selection bias. Specifically, this paper chose the near-neighbor matching method, calculated the propensity score of the sample with the probit model, and selected all control variables as covariates of the PSM. First, the matching effect is tested in this paper, and the results are shown in the Fig. 1. It can be seen that the black dot symbol in the figure reports the degree of deviation between the covariates before matching, while the symbol reports the degree of deviation between the covariates after matching. After completing the matching, the deviation degree of all covariates decreased significantly, and was basically less than 10%, which indicates that the matching effect was good and better alleviated the problem of self-selection bias.

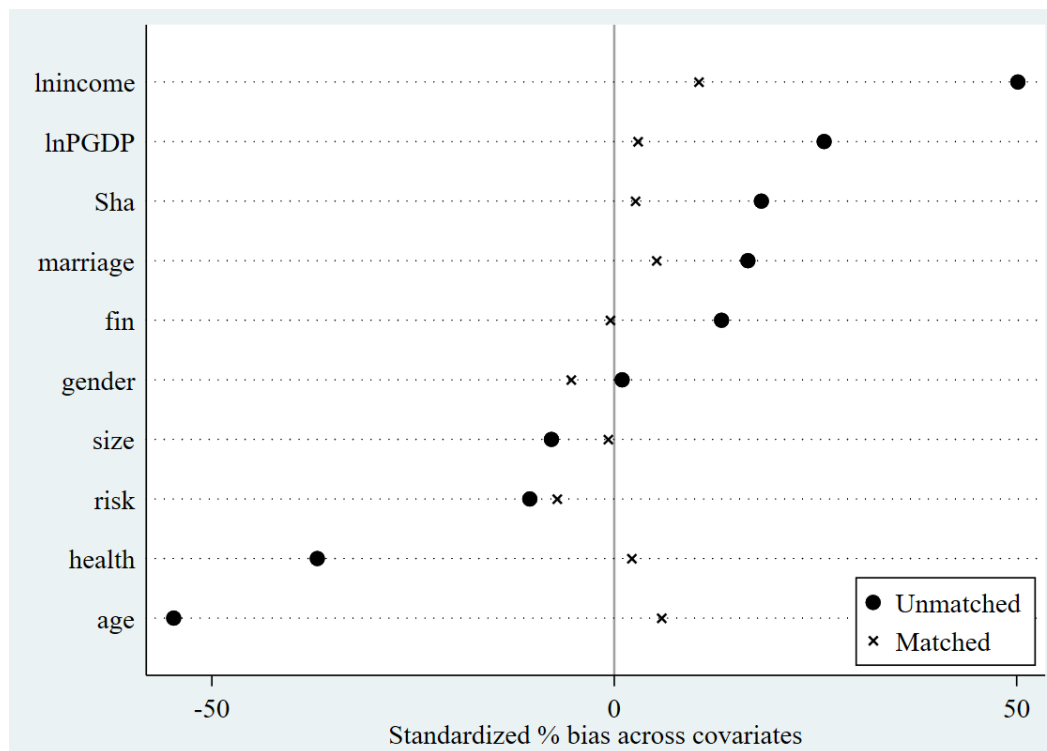


Fig. 1 Matching effect analysis

In the regression analysis, the influence coefficient of education on D_House and P_House was significantly 0.1056 and 0.0110, respectively, which again proved the positive impact of education on real estate asset allocation (See Table 6).

Table 6. The PSM robustness test

	(1)	(2)
	D_House	P_House
edu	0.1056***	0.0110***
	(6.5415)	(8.5947)
age	0.0016	-0.0005***
	(0.9186)	(-3.3779)
marriage	0.1528**	0.0010
	(2.4528)	(0.1797)
gender	-0.0192	-0.0060
	(-0.3934)	(-1.4346)
health	-0.0139	0.0034*
	(-0.6653)	(1.9340)
size	0.0671***	0.0082***
	(4.5873)	(6.8148)
lnincome	-0.0379***	-0.0049***
	(-2.6736)	(-4.5597)
fin	-0.0209	-0.0304
	(-0.0799)	(-1.4719)
risk	-0.0238	0.0033*
	(-0.9860)	(1.7120)
Sha	-0.3652	0.1281**
	(-0.6254)	(2.5112)
lnPGDP	-0.1782***	-0.0065
	(-3.5310)	(-1.4559)
_cons	3.6288***	0.9244***
	(6.4717)	(18.6659)
lnsig2u	-0.9371***	
	(-4.5573)	
N	16618	16619
Note: *** p < 0.01, ** p < 0.05, * p < 0.1, with t statistics in parentheses		

4.3. Inspection of Financial Information Attention and Financial Knowledge Mechanism

First, this paper will test the possible intermediary role of financial information attention in the real estate asset allocation affected by education level. The regression results are shown as follows. In column (1), the influence coefficient of education level on the attention to financial information was 0.0208, which passed the significance test of 1% level, indicating that the education level will significantly increase individuals' attention to financial information. In columns (2) and (3) of financial information attention, the influence coefficient of D_House and P_House was 0.0401 and 0.0729 respectively, both of which passed the significance test of 1% level, indicating that the financial information attention will significantly increase the probability and proportion of individual real estate asset allocation. The results together show that the educational level will significantly increase the attention of individuals to financial information, thus increasing the probability and proportion of individual real estate asset allocation, assuming that H2 is confirmed (See Table 7).

The education level affects the individual financial information attention, and then affects the allocation of real estate assets. Specifically, individuals with high educational level pay more attention to financial information because they have higher financial literacy and information processing ability. This attention allows them to more comprehensively assess risks and returns, identify investment opportunities and optimize their portfolios when allocating their real estate assets. Therefore,

financial information attention plays an important intermediary role in the process of real estate asset allocation affected by education level.

Table 7. Intermediary effect of financial information attention

	(1)	(2)	(3)
	att	D_House	P_House
edu	0.0208*** (11.1909)	0.0075*** (5.5566)	0.0096*** (7.5756)
att		0.0401*** (7.2978)	0.0729*** (14.5308)
age	0.0011*** (4.7795)	0.0001 (0.5420)	-0.0006*** (-4.0165)
marriage	0.0124 (1.4798)	0.0149** (2.4476)	0.0008 (0.1434)
gender	0.0076 (1.2218)	-0.0017 (-0.3815)	-0.0064 (-1.5375)
health	-0.0075*** (-2.8574)	-0.0005 (-0.2429)	0.0044** (2.5420)
size	0.0010 (0.5619)	0.0060*** (4.6879)	0.0079*** (6.7560)
lnincome	0.0033** (2.0856)	-0.0034*** (-2.9803)	-0.0054*** (-5.1461)
fin	0.1474*** (4.7900)	-0.0079 (-0.3553)	-0.0404** (-1.9686)
risk	-0.0346*** (-11.6753)	-0.0006 (-0.2842)	0.0061*** (3.1736)
Sha	0.1155 (1.5747)	-0.0496 (-0.9275)	0.1133** (2.2632)
lnPGDP	-0.0057 (-0.8824)	-0.0171*** (-3.6324)	-0.0056 (-1.2629)
_cons	0.2098*** (2.9494)	1.1063*** (21.2370)	0.9043*** (18.4790)
N	16865	16865	16865

Note: *** p < 0.01, ** p < 0.05, * p < 0.1, with t statistics in parentheses

Financial knowledge may also play an intermediary role in the real estate asset allocation influenced by the education level, and the regression results are as follows. In column (1), the influence coefficient of education level on financial knowledge was 0.0152, which passed the significance test of 1% level, indicating that the education level will significantly increase the individual's financial knowledge. In columns (2) and (3), the influence coefficient of financial knowledge on D_House and P_House was 0.0944 and 0.0108 respectively, both of which passed the significance test of 1% level, indicating that financial knowledge will significantly increase the probability and proportion of individual real estate asset allocation (See Table 8). Together, the results show that educational level significantly increases individual financial knowledge, thus increasing the probability and proportion of individual real estate asset allocation, assuming that H3 is confirmed.

In the process of real estate asset allocation influenced by education level, financial knowledge plays a key intermediary role. High educated individuals are better able to understand and cope with the complexity and uncertainty of the real estate market through accumulating financial knowledge. They can understand how the real estate market works and predict market trends to make more accurate investment decisions. At the same time, they can also effectively manage investment risks and ensure the safety and steady appreciation of assets. This influence mechanism shows that

improving the level of individuals' financial knowledge will not only help to optimize their real estate asset allocation strategy, but also can improve their wealth accumulation level.

Table 8. Mediating effect of investment ability

	(1)	(2)	(3)
	div	D_House	P_House
edu	0.0152*** (17.0131)	0.0944*** (5.8062)	0.0108*** (8.4062)
kno		0.9107*** (6.9031)	0.0200* (1.8913)
age	0.0006*** (5.1833)	0.0014 (0.8205)	-0.0005*** (-3.5656)
marriage	0.0134*** (3.3041)	0.1276** (2.0497)	0.0013 (0.2376)
gender	0.0058* (1.9218)	-0.0328 (-0.6716)	-0.0059 (-1.4239)
health	-0.0013 (-0.9891)	-0.0099 (-0.4765)	0.0039** (2.2475)
size	-0.0045*** (-5.3035)	0.0722*** (4.9392)	0.0081*** (6.8353)
lnincome	0.0052*** (6.7393)	-0.0453*** (-3.1932)	-0.0052*** (-4.9592)
fin	0.0160 (1.0812)	-0.0456 (-0.1741)	-0.0305 (-1.4767)
risk	-0.0009 (-0.6319)	-0.0217 (-0.8998)	0.0037* (1.9224)
Sha	-0.1686*** (-4.7523)	-0.3260 (-0.5584)	0.1264** (2.5068)
lnPGDP	-0.0162*** (-5.2093)	-0.1678*** (-3.3187)	-0.0057 (-1.2660)
_cons	0.2259*** (6.5587)	3.5077*** (6.2482)	0.9142*** (18.5343)
lnsig2u		-0.9125*** (-4.5257)	
N	16865	16864	16865

4.4. Urban-rural Heterogeneity Analysis

The difference between urban and rural environment may make the impact of education level on real estate asset allocation show a difference. This difference not only reflects the difference of social and economic environment between urban and rural areas, but also profoundly reveals the important role of education in wealth accumulation and asset allocation in modern society. Therefore, according to the individual permanent residence of town or village, the samples are divided into town and village, and carry out the regression analysis again, and the results are as follows. In the town sample, the influence coefficient of edu on D_House and P_House was 0.1513 and 0.0214, respectively, which both passed the significance test at the 1% level. In the village sample, the influence coefficient of edu on D_House and P_House were 0.1241 and 0.0095, respectively, which also passed the significance test at the 1% level (See Table 9). The effect of edu on D_House and P_House is more pronounced in towns than in the rural sample. That is, compared with the rural sample, the impact of education level on real estate asset allocation is more prominent in the urban sample.

First of all, the influence of education degree on real estate asset allocation in the urban sample is more prominent, which can be analyzed from multiple dimensions. In the urban environment, educational resources are relatively concentrated, and the education level is generally high, which enables individuals to have a more comprehensive understanding of the basic knowledge, investment concepts and risk management strategies of the real estate market in the process of receiving education. Therefore, urban residents with higher education often show more rationality and professionalism when allocating real estate assets and can better make reasonable investment decisions according to their own economic conditions and market trends. Second, the urban real estate market is becoming more mature and stable, which provides a broader investment space for highly educated individuals. The urban real estate market has a more perfect legal and regulatory system, a more abundant investment varieties and a more active trading market, and these conditions provide more choices for well-educated investors. At the same time, with the continuous advancement of urbanization, the potential of the urban real estate market is gradually being released, which brings more investment opportunities and higher investment returns to investors. In contrast, the impact of education on real estate asset allocation was relatively weak. This is mainly because of the relative lack of educational resources in rural areas, and the education level is generally low, which makes it difficult for rural residents to understand and grasp the real estate market information. In addition, the rural real estate market is relatively small, and the transaction activity is not high, which also limits the choice space of rural residents in the real estate asset allocation.

Table 9. Analysis of heterogeneity

	(1)	(2)	(3)	(4)
	town	village	town	village
	D_House	D_House	P_House	P_House
edu	0.1513***	0.1241***	0.0214***	0.0095***
	(4.6456)	(5.9635)	(7.8304)	(6.0672)
age	0.0019	0.0025	-0.0005**	-0.0005***
	(0.7352)	(1.0580)	(-1.9955)	(-2.6723)
marriage	-0.1507	0.2696***	-0.0098	0.0057
	(-1.4763)	(3.3461)	(-1.0902)	(0.7777)
gender	-0.2214**	-0.0127	-0.0206***	-0.0028
	(-2.4077)	(-0.2082)	(-2.5888)	(-0.5564)
health	-0.0320	0.0031	0.0090***	0.0008
	(-1.1600)	(0.1047)	(3.5093)	(0.3356)
size	0.0172	0.1076***	0.0034**	0.0121***
	(0.9812)	(4.7633)	(2.0479)	(7.1184)
lnincome	-0.0312*	-0.0317	-0.0043***	-0.0053***
	(-1.6531)	(-1.6398)	(-2.7202)	(-3.7673)
fin	0.0000	-0.0039	0.0962	-0.0295
	(.)	(-0.0134)	(0.9405)	(-1.3689)
risk	-0.0698*	0.0001	0.0001	0.0054**
	(-1.9358)	(0.0027)	(0.0359)	(2.2161)
Sha	-0.1335	-0.4231	0.3298***	0.0499
	(-0.1592)	(-0.5397)	(4.1355)	(0.7580)
lnPGDP	-0.0510	-0.2179***	0.0083	-0.0095*
	(-0.6583)	(-3.2438)	(1.1202)	(-1.6525)
_cons	2.7398***	3.6161***	0.7497***	0.9534***
	(3.0842)	(4.8721)	(8.9744)	(15.0892)
lnsig2u	-4.8592	-0.4732**		
	(-0.4585)	(-2.3170)		
N	6726	10134	6730	10135
Note: *** p < 0.01, ** p < 0.05, * p < 0.1, with t statistics in parentheses				

5. Conclusions and Suggestions

5.1. Conclusion

As an important asset class, real estate has a significant impact on the accumulation of wealth of individuals and families. As an important indicator to measure individual ability and social status, its role in real estate asset allocation is increasingly attracting attention. It is particularly important to study the impact of education level on real estate asset allocation. In this context, this paper deeply studies the impact of education level on real estate asset allocation, builds a theoretical framework based on the theoretical perspective of human capital theory, and constructs the Probit model, two-way fixed effect model and intermediary effect model based on the CHFS database in 2015, 2017 and 2017 as the benchmark to carry out empirical tests. The main study conclusions are summarized as follows:

(1) The education level significantly increases the individual real estate asset allocation. The human capital theory provides some explanations from the aspects of income effect, risk awareness and educational resource demand, and the empirical results of this paper correspond to them, and the conclusion still holds significantly after replacing the various forms of robustness test of the explained variables, the fixed effects of the control province and PSM.

(2) Financial information attention and financial knowledge play an intermediary role in the influence of education level on real estate asset allocation. That is, the education level will increase the individual real estate asset allocation by increasing the individual financial information attention and financial knowledge.

(3) Compared with rural groups, the impact of education level on real estate asset allocation is more obvious in the urban sample.

5.2. Recommendations

Attach importance to the role of education in improving the ability of real estate asset allocation. The government should continue to increase investment in education and improve the overall level of education, especially financial education, so as to enhance the public's understanding of the real estate market and asset allocation ability. Educational institutions can add more courses related to the real estate market, such as real estate investment, financial analysis, etc., to cultivate students' investment awareness and risk identification ability. All sectors of society should encourage and support individual lifelong learning, and constantly improve their ability of self-education and self-investment.

To enhance the public's attention to financial information and financial knowledge level. Media and financial institutions should strengthen the information disclosure and interpretation of the real estate market and improve the public's attention to and understanding of financial information. The government can set up a financial knowledge popularization platform or organize lectures on financial knowledge to help the public improve their financial literacy and reduce investment blindness. When providing financial services, financial institutions should strengthen the financial knowledge education of customers to ensure that customers make decisions on the premise of fully understanding the market risks and investment opportunities.

Pay attention to the differences between urban and rural areas and optimize the urban real estate asset allocation environment. The government should strengthen the supervision of the urban real estate market to ensure the standardized operation of the market and reduce the investment risks. For rural areas, the government should guide and support the development of rural economy, improve the income level of rural residents, and provide more investment channels and opportunities for rural residents. At the same time, the government can promote the integrated development of urban and rural areas, strengthen the economic ties and exchanges between urban and rural areas, and narrow the gap in education and asset allocation between urban and rural areas.

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