

The Impact of Children on Families' Willingness to Buy Houses

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Abstract. In China, buying a home is a decision that needs to be carefully thought out. The willingness to buy a house and the behavior of buying a house reflect the development of the country's economy. Residents' purchase decisions are closely related to personal and family characteristics. Based on the data of the China Comprehensive Social Survey (CGSS) in 2013 and the Probit model analysis, this paper concludes that whether there are children has a negative effect on the family's purchase intention, the family's annual income and private car ownership have a negative effect, while the effect of individual's age and education level on the purchase intention is not significant.

Introduction

China's real estate industry accounts for a large proportion of GDP and plays an important role in the development of the national economy. Chinese people pay attention to living and working in peace. Whether they can purchase a set of their own indirect housing is a symbol of their success and a symbol of social status. Most Chinese people feel that there is no sense of security without a house. These factors have formed the traditional concept that Chinese people pay more attention to purchase than rent. So it has become a lifelong dream for people to buy a house of their own. However, China's housing prices are growing rapidly, especially in the first-tier cities, which have increased several times in a few years. It is difficult to buy a house, which has become a hot topic in society, even a phenomenon that the whole family can only buy a house. As the growth rate of housing prices is much higher than the growth rate of wages, the purchasing power of middle- and low-income families is gradually declining, leading to the majority of young people to buy houses by loans. The traditional concept of marriage in our country is to buy a house before getting married, but the excessive housing price breaks this tradition. Many young couples even have children do not realize their desire to buy a house, which is particularly evident in the first-tier cities. After having children, people's motivation to buy a house has changed. Some people choose not to buy a house temporarily in order to improve the quality of their children's life, while others choose to buy a high-price school district house for their children's better education. Therefore, this paper uses Probit model to focus on the impact of the number of children on household purchase decisions, and finds that families without children are more willing to buy housing than families with children. After controlling other variables, this result is still significant.

The general framework of this paper is the second part is the literature review; the third part is the source of data, the selection and definition of relevant variables and descriptive statistics; the fourth part is the setting of the measurement model and the empirical structure analysis; the fifth part is the relevant conclusions.

Literature Review

Because the purchase of houses is an important part of the whole family's economic expenditure, people will make the purchase decision after careful consideration. There are many factors affecting people's purchase of houses. Zhang believes that the population of a city, local housing prices, household income, inflation, interest rates and the level of national economic development and other factors will affect people's demand for housing. X.J. Qiu, M.Z. Fu and J. Xuan [1] analyzed the influence of marital status, age dispersion, personal annual income and working status on the

willingness to purchase based on logit model. It was found that marital status, work and annual income have a close relationship with residents' willingness to purchase. Married citizens have a weak willingness to purchase houses; residents with stable jobs and high incomes have a higher willingness to purchase houses. L.Y. Hou [2] also studied the purchase intention of customers based on logit model and Qiu Xingjie, Fu Mingzhen and Xuanjie's articles. They controlled the variables of gender, educational background, family population and living condition, and concluded that income, marital status and living condition all had an impact on the purchase intention. J. Li [3] studied the willingness of young people to purchase houses, and believed that the education level, personal monthly income, and adaptability to social culture have a positive impact on the purchase of housing, and the impact of marital status is not significant.

Whether there is a house or not will also have an impact on the overall situation of the family. Rossi and Weber [4] made a comprehensive comparison between those with and without housing, including family structure, marital status, educational level and family income, and found that there were differences in demographic characteristics between them.

In addition to studying the traditional influencing factors, such as income, housing prices and other factors affecting home purchase decisions, many scholars at home and abroad have studied the impact of children's education and gender on home purchase decisions. H. Feng and M. Lu [5] found that the difference in the quality and quantity of educational resources has been partly reflected in housing prices. If strictly according to the "piecewise division, close to school" will only aggravate the behavior of families to buy school districts. Green and White [6] studies show that children with their own homes are better educated and more likely to complete high school than children with renters. Further research by Aaronson [7] found that housing ownership has a positive impact on children's development. This study shows whether families will buy housing for their children's better education. Wei and Zhang focused on the impact of child gender on home purchase decisions. Using data from 1990 to 2007 in China, it was proved that families with boys would increase their savings rate in order to increase children's attraction to marriage and highlight their social status. D.J. Pan [8] focused on the influence of children's gender on the family's willingness to buy a house. Using the data from the China Household Finance Survey, the household income, household age, education, and provinces were subjected to Probit regression. The study showed that boys had no influence on the family's decision to buy a house, but increased the possibility of families buying two or three apartments.

Variables and Descriptive Statistics

Data Analysis. The data of this study come from the China Comprehensive Social Survey (CGSS) in 2013, which mainly uses Volume B of the 2013 Questionnaire (Resident Questionnaire). This questionnaire contains basic family information such as family income, real estate situation, marital status, education level and so on. This paper mainly studies whether children have an impact on the purchase decision. Adult children have a certain source of income and do not need parental support to a certain extent. Therefore, we mainly consider families with minor children under 18 years of age, excluding families with children over 18 years of age. For data processing of household income, excluding households with annual income of more than one million, and taking logarithmic processing of income, according to the results, the logarithm of income is statistically significant; For the education level, an ordinal sequence of 1-13 is used to express the education level. Whether a family owns a car or not also reflects the family's economic situation to a certain extent. After removing the invalid and missing values of the relevant variables, the sample included a total of 8647 household details.

Table 1 Descriptive Statistical Characteristics of Explanatory Variables

Explained variable	All samples	
	mean value	standard deviation
Is there a house?	0.9474	0.2233
Explanatory variables		
Is there a child?	0.3711	0.4831
Educational level	4.5104	2.7307
Age	51.3653	14.5186
Logarithm of annual household income	10.4299	1.0497
Is there a car?	0.1529	0.3599
Marital status	0.9924	0.0870
Observations	8647	

Table 1 shows that 94.75% of households have houses and 37.14% of households have children under the age of 18. This shows that most households will buy houses, which is also in line with the traditional Chinese concept. The family with cars only accounted for 15.27%, which is also in line with the current social situation. The rapid development of public transportation, traffic congestion in the morning and evening peaks, many families choose not to buy private cars, but take the subway.

Table 2 Descriptive Statistical Characteristics of Grouped Samples with or without Children

variable	Population	
	with Children	without Children
Is there a house?	93.5%	95.5%
Educational level	96.3%	80.5%
Annual household income	66156.6	46265.3
Age	37.5	59.5
Is there a private car?	22.7%	10.9%
Marital status	99.3%	99.2%

From Table 2, we can see that there are great differences between families with children and families without children in all aspects. Specifically, families with children are higher than those without children in terms of education level, annual family income and the proportion of cars; conversely, families with children are lower than those without children in terms of housing and age. The marital status of the two groups is basically the same. In simple terms, there is a negative correlation between children and housing ownership, but the specific results are yet to be verified. So the hypothesis of our study is that whether there are children has a significant impact on the family's decision to buy a home.

Definition of variables. The explained variable in this paper is whether a family owns a home. The question in the questionnaire is "How many house properties do you have?". In this paper, there will be one or more houses as a housing, 0 houses as no housing. The explained variable will be used as a binary variable, with housing being "1"; no housing being "0". The main explanatory variable is whether a family has children, with children assigned to 1, no children assigned to 0.

Other control variables fall into two main categories, one is family characteristics, including family income (lincome) and car ownership (car). The annual family income directly affects the purchase behavior of the family, while the situation of owning a car indirectly reflects the family's economic situation, and then affects the purchase decision. The annual household income in the questionnaire collects the income in 2011; in the case of car ownership, there will be a car assignment of 1, and no car assignment is 0. The other category is the situation of the head of the household, including the level of education (edu), age (age) and marital status (mar). Parents who have received higher education will pay more attention to their children's education. They may buy school district houses in order to let their children go to better schools. The age is considered

because the older heads of households work more stable and have a more stable source of income. They may have stronger willingness to buy houses. The questionnaire was divided into 13 grades: no education, private school, literacy class, elementary school, junior high school, vocational high school, general high school, technical secondary school, college specialty (adult higher education), college specialty (regular higher education), undergraduate (adult higher education), undergraduate (regular higher education), graduate students and above, which were assigned 1-13 to indicate the level of education; For age, the question in the questionnaire is “Your birth year”, which is obtained by subtracting the year of birth from the survey year of the questionnaire in 2013; Considering that people will buy houses because of marriage, so the control variable of marital status is added. For the treatment of marital status, this paper attributes first marriage and remarriage to married, and assigns married value to 1, unmarried value to 0.

Establishment and Results of Measurement Model

Model Specification. Because the explained variable, whether to own a house, is a binary variable, this paper uses Probit model to test the hypothesis that whether there are children has a significant impact on the household's purchase decision. The main regression models in this paper are as follows:

$$home_i = \alpha + \beta child_i + \gamma edu_i + \delta age_i + \rho mar_i + \theta lincome_i + \varphi car_i + \epsilon_i$$

In this model, the focus of this paper is that the coefficient is β . If β is positive, it indicates that children have a positive influence on the decision of the family to make a purchase; on the contrary, it means that the child will reduce the willingness of the family to buy a house.

Empirical Results. Table 3 is for the hypothetical Probit regression results, Probit1 is the regression result of whether or not there is a child's willingness to purchase a house; Based on the former, Probit2 adds the basic situation of the head of the household as a control variable such as age, education level and marital status; Probit3 controls the related variables of household income based on Probit1, such as annual household income and ownership of private cars; Probit4 is a regression result that controls the related variables of household ownership and family status at the same time.

Table 3 Whether there are children's Probit regression results for home purchase decisions

VARIABLES	(1) probit1 home	(2) probit2 home	(3) probit3 home	(4) probit4 home
child	-0.1798*** [0.0453]	-0.2934*** [0.0693]	-0.2455*** [0.0473]	-0.2823*** [0.0705]
edu		-0.0065 [0.0086]		-0.0332*** [0.0097]
age		-0.0055** [0.0023]		-0.0031 [0.0024]
mar		-0.2431 [0.3110]		-0.2634 [0.3118]
lincome			0.0618*** [0.0231]	0.0875*** [0.0252]
car			0.2973*** [0.0782]	0.3429*** [0.0799]
Constant	1.6929*** [0.0296]	2.2887*** [0.3456]	1.0487*** [0.2346]	1.3656*** [0.4333]
Margin	-0.0192	-0.0313	-0.0258	-0.0296
Observations	8,647	8,647	8,598	8,598

Standard errors in brackets

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

From Table 3, we can see that the explanatory variables that this paper mainly focuses on are children or not. The regression results with different control variables are significant. Families with children have lower willingness to buy houses than those without children. In Probit1, the marginal effect indicates that the purchase intention of families with children is 1.92% lower; After controlling the individual characteristics of the householder, the purchase intention of the household is 3.13% lower than that of the household without children, and the gap between the two is widening. After controlling the family situation, the purchase intention is 2.58% lower and 2.96% lower after controlling all variables. Families with children have lower willingness to buy houses than families without children, which can be explained by the fact that families with children are reluctant to buy houses in order to ensure the daily expenses of families and children and to ensure a certain quality of life. Nowadays, most families buy houses with loans, and the repayment period is longer. If they buy houses, they will surely reduce the cost of daily life and can not guarantee the quality of life and the quality of children's education. In the past, some literatures suggested that families would buy better school districts for their children, but this phenomenon is becoming less and less significant. Especially in the first-tier cities, facing the high-priced school district houses, ordinary families simply can't afford it. On the contrary, these families will use this expenditure to ensure the level of children's daily life. In cities such as Beijing and Shanghai, the policy of buying a house has never been implemented. Therefore, the desire of parents in these cities to settle their families for the education of their children is impossible. It is better to spend the money on the daily expenses of the children.

The regression results for age in Probit2 were significant, but this result became insignificant after controlling all variables. Nowadays, age has little effect on buying a house. Because the house price is too high now, the average family can not pay the full amount directly. Many young couples buy a house through loans or parents' subsidies. Moreover, the young people's consumption concept is not like the old generation's struggle for a lifetime to buy a house, so the young people's willingness to buy a house is greater.

The car ownership reflects the family's economic situation from the side, so the regression results of whether to own a car and family's annual income in Probit3 and Probit4 are significant. This result is well understood, the more income, the better the family's economic situation, the more inclined to buy a house.

Conclusion

Based on the data of the China Comprehensive Social Survey (CGSS) in 2013 and the Probit model, this paper investigates the influence of children on household purchase decision-making. The empirical results show that whether there are children or not has a significant impact on home purchase decision-making, and has a negative effect on home purchase decision-making. Families with children have lower purchase intention than those without children. Other control variables, such as the age and education level of the head of the household, are significantly different in controlling the regression of different variables; The annual income of the family and whether or not to own a private car have a positive effect on the decision to purchase a house. The higher the income, the better the economic situation, the more inclined it is to buy a house. This result is consistent with the existing literature research results.

The traditional concept holds that after having children, families should be more enthusiastic about buying a house in order to provide a better and more stable living environment for children. Especially in the current school choice phenomenon, many families go to buy school districts in order to let their children go to a better school, which will also promote the purchase of housing. However, the empirical results show that families with children are not keen on buying houses, which is also in line with the actual situation in China. In recent years, the rapid growth of housing prices, especially in economically developed cities, high housing prices have weakened the affordability of middle and low-income families, and even the emergence of high-priced school district housing, the general family simply can not afford to pay. It is normal for the whole family to buy a house and borrow money to buy a house. After having children, the family expenditure

increases, and it is more difficult to buy a house. If you buy a house, you must reduce the family's daily expenses, so you can not guarantee the quality of life and children's investment in education. Nowadays, the consumption concept of many couples also decides that they will not buy a house at the cost of reducing the quality of life. All these reasons make families with children have lower willingness to buy houses than families without children.

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