Study of Factors Affecting Consumer House Purchase Decisions in The Third-tier Cities
----- With Real Estate Market in Sichuan Jianyang as the case

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ABSTRACT: Questionnaires of factors affecting consumer house purchase decisions were released in Jianyang. SPSS software was used for related determent analysis and regression analysis on influencing factors through data collection and sorting. Key factors affecting customer house purchase decisions were concluded from two aspects of total house price and purchase time afforded by customers. Study results showed that six variables of family income, residential area, real estate macroeconomic situation, living district overall layout, housing types and neighbor quality had significant impact on affordable house price and purchase time.

KEYWORD: House purchase decisions; Influencing factors; Real estate market; Jianyang

1 INTRODUCTION

Real estate industry in China is gradually returned to rational state from super-speed development since 2007 with the government's macro-control on real estate market. However, many small and medium real estate companies have also exposed a lot of problems in the context of high profit. For example, false propaganda, Vicious price competition, low construction quality and so on. All these problem restrict the development of many companies. Thus, how to change previous sales philosophy, how to change marketing strategy and formulate sustainable development strategies under new policy have been particularly concerned by small and medium real estate companies. Meanwhile, the development of real estate market in third-tier cities is still relatively slow compared with real estate markets in the first-tier and second-tier cities. Real estate companies in many third-tier cities should consider how to adapt to national urbanization process, meet various needs of consumers, and achieve steady and healthy development. Therefore, real estate companies should study house purchase decision process of consumers in details, and discover key factors affecting customer house purchase decisions, thereby increasing enterprise core competitiveness in the fierce real estate market.

2 DOMESTIC AND FOREIGN RESEARCH STATUS

Foreign research on consumers' behaviors in real estate market can be traced back to 30 years ago. Scholars from various countries adopted diversified research methods and extensive research perspectives. Quantitative research methods were adopted in many articles. Menehik, Bible, Nelson and Rabianski conducted related study on commercial residential house purchase preference. Wherein, Menehik divided house purchase preference into four aspects, namely land characteristics, house accessibility, natural environment, artificial and unnatural environment. Consumer's environmental preferences were mainly studied; Nelson and Rabianski[1] adopted Multidimensional Scaling Technique and cluster analysis method for studying customer preference in real estate market. Anglin studied the decisive factor affecting customer house purchase in real estate market aiming at decisive factors affecting customer house purchase behavior[2].

Domestic related study is not deep enough, which is lack of adequate quantitative research and analysis compared with foreign study. For example, Jia Shijun adopted Chigang in Haizhu District of Guangzhou as an example in studying customer house purchase behavior characteristics, corresponding analysis and optimal scaling analysis were adopted for empirical research on consumer house purchase behavior characteristics. Qiu

Jianfeng[3] focused on utilizing logit regression analysis model for analyzing and studying factors affecting customer house purchase in Hangzhou through sample descriptive analysis, independent sample t-test and variance analysis.

Study of factors affecting consumer house purchase decisions will become a trend for in-depth study with increasingly intense competition in real estate.

A. Analysis technology means are gradually converted from previous descriptive study to cluster analysis, determinant analysis, correspondence analysis, corresponding analysis, other statistical analysis methods and data mining technology.

B. Single variable factor method, multivariate factor method, series variable factor method, etc. can be adopted on the basis of studying according to geographic, demographic, behavioral variables and other subdivision standards. Statistics can be utilized for empirical research on real estate market segmentation. They should be mutually compared for obtaining accurate market research results.

3 EMPIRICAL STUDY OF CONSUMER HOUSE PURCHASE MARKETING FACTORS

Questionnaire research method was mainly adopted. Questionnaires were released in big shopping malls and downtown areas of Jianyang, Sichuan. Meanwhile, a part of electronic version questionnaires were released online. A total of 230 questionnaires were released, and 200 questionnaires were effectively taken back. SPSS software was adopted for determinant analysis and regression analysis on data after investigation was completed.

A. Determinant Analysis of Factors Affecting Consumer House Purchase Decision factor

A total of 22 factors affecting customer house purchase decision behaviors were listed in the questionnaire, including the follows: national macroeconomic situation, real estate market development trend, house sales price, mortgage ratio and interest rate, housing type design and area, house construction quality, housing type, lighting and ventilation, direction and floor, appreciation potential, living district supporting facilities, green rate and volume ratio, parking space, surrounding traffic, surrounding education, surrounding health care facilities, surrounding commercial entertainment, living district development potential, neighbor quality, developer brand honor, property management level and promotional activities. The factors were classified through determinant analysis, thereby finally obtaining four major categories of factors affecting customer house purchase decision behavior (as shown in table 1).

Table 1. Determinant Name and Meaning

Determinant Name	Determinant Meaning	Load
Real estate economy related factor (F1)	National macroeconomic situation	0.872
	Real estate market development trend	0.861
	House sales price	0.785
	Mortgage ratio and interest rate	0.658
Residential related factor (F2)	Housing type design and area	0.832
	House construction quality	0.886
	Housing type	0.723
	Lighting and ventilation	0.868
	Direction and floor	0.673
	Appreciation potential	0.586
Living district related factor (F3)	Living district supporting facilities	0.766
	Green rate and volume ratio	0.687
	Parking space	0.522
	Surrounding traffic	0766
	Surrounding education	0.682
	Surrounding health care facilities	0.656
	Surrounding commercial entertainment	0.735
	Living district development potential	0.586
	Neighbor quality	0.688
Real estate developer related factor (F4)	Developer brand honor	0.652
	Property management level	0.784
	Promotional activities.	0.661

B. Regression Analysis of Influencing factors and House Purchase Decision

Regression analysis was implemented on consumer house purchase decision behaviors, thereby obtaining the key factors affecting customer house purchase behaviors. Strong purchase willingness and adequate purchasing power are prerequisite for purchasing behavior in house purchase decision stage. Therefore, the factors significantly affecting customer purchase willing and purchase power and factors with low influence in the decision-making stage were mainly studied in the paper. Their functions are shown as follows:

Consumer purchase willingness and purchase power=F (factors affecting customer purchase decisions).

3.1 Selection of Dependent Variables

In this research, dependent variable indicators include consumer purchase willing and purchase power, which are mainly embodied in two indicators, namely planned purchase time and affordable house price. Therefore, the two indicators undergo regression analysis as dependent variables in the paper.

3.2 *Selection of Independent Variables*

The independent variables in the regression equation mainly refer to the factors affecting marketing consumer house purchase decisions. The author mainly summarizes three categories among various influencing factors: house property variables, customer individual characteristics and consumer house purchase demand variables. They are specifically categorized as follows:

A. House property variables: house quality, price, surrounding facilities, living district property, real estate developer reputation and other factors.

B. Customer individual characteristic variables: consumer age, occupation, income, education level, family structure and other factors;

C. Consumer house demand variables: different consumers have different house purchase preferences, such as selection about building area, size, model, etc. The personalized demand will affect the consumers' final decisions.

3.3 *Regression Result Analysis*

A. Affordable house price is selected in the regression analysis dependent variable for multiple linear regression. Stepwise regression method is adopted for regression. Variables with high significance are selected, variables with low insignificance are removed. Concrete analysis results are shown in table 2

Table 2. Model Coefficient Table of Affordable house price

Model	Standard Coefficient Trial Version	Sig
Constant		0.000
Building area	0.360	0.000
Family income	0.318	0.000
House type	0.251	0.000
Determinant 1	0.158	0.017
Determinant 2	0.152	0.026
Determinant 4	0.082	0.032
a. Dependent Variable: Affordable house price		

The regression model fitting degree R2 is 52%, the adjusted R2 is 49.5%, and the model has excellent overall goodness of fit after stepwise regression method is adopted for regression.

It can be seen from the regression model coefficient table 3 that coefficient of variable-family income is positive, P value is < 0.01, namely the variable has significant influence on the dependent variable. The results show that customer with higher family income can bear houses with higher total house price. Conversely, family income is lower, affordable house price is lower.

P value of the variable-house type is 0.001, and corresponding variable influence of the variable is very significant. There are four house types, namely multilayer building, small high-rise building, high-rise building and villa. House purchase customers selecting small high-rise building have higher affordable house price than customers selecting multilayer building and high-rise building. Customers selecting villa have higher affordable house price than customers selecting small high-rise building.

Determinant 1 is related factor of real estate market economy. Regression result P value = 0.017, and it has significant positive correlation to dependent variable. It suggests that economic situation in real estate market is better, customer is more willing to purchase house with higher price. On the contrary, customers are more unwilling to pay higher house price if the real estate market is depressed.

Determinant 2 is house related factor, including house type, area, layout, etc. Regression results show that the variable has significant positive correlation on dependent variable. It suggests that customer with higher attention to housing condition can afford higher house price.

Determinant 4 is real estate developer reputation factor, including three factors, namely building awareness, property management level, etc. Regression results show that the variable has significant positive correlation on dependent variable. It suggests that developers have higher reputation, property management level is higher, consumers more willing to purchase house.

B. Regression Analysis of Planned Purchase Time

Consumer planned purchase time is adopted in the regression analysis as dependent variable for multivariate linear regression. Stepwise regression method is adopted for regression. Variables with high significance are selected, variables with low significance are removed. Analysis results are shown in table 3.

Table 3. Regression analysis of consumer planned purchase time

Model	Standard Coefficient Trial Version	Sig
Constant		0.000
Family monthly income	-0.326	0.000
Education level	0.247	0.002
Determinant 3	0.182	0.035
a. Dependent variable: Planned House Purchase Time		

The above table shows that standard coefficient of the variable-family monthly income is a negative, P value is < 0.01, and the variable has significant influence on dependent variable. It suggests that family monthly income affects house purchase decision time. Purchase decision time is shorter for

family with higher income. On the contrary, purchase decision time is longer for family with lower income. Standard coefficient of variable-education level is a positive. P value is < 0.01. The value also has significant influence on the dependent variable. It suggests that education level affects purchase decision-making time. Purchase decision time is longer for customer with higher education level. On the contrary, purchase decision time is shorter for customer with lower education level. The result is in line with reality condition. More factors are considered for customer with higher education level, which cannot be affected by sales personnel easily. Customer with lower education level can be easily affected by sales personnel due to limited knowledge, thereby decision purchase time is shorter.

Determinant 3 refers to relevant supporting facilities and surrounding landscape of living district, concretely including the follows: surrounding supporting traffic, education, health care and other factors. The above table shows that standard coefficient is positive, P value is 0.035, and it has significant impact on the dependent variable. Namely, people pay more attention to external supporting facilities and surrounding landscape during house purchase, and the purchase decision time is longer. On the contrary, customer with low attention on external supporting facilities and surrounding landscape has shorter purchase decision time.

4 CONCLUSION

The following conclusions are achieved through the above analysis: consumers mainly consider four major factors in house purchase aiming at factors influencing customer house purchase behaviors in Jianyang: real estate economy factor, residence factor, living district factor and developer factors. Regression analysis results of consumer house purchase willing show that building area, family monthly income, housing type, real estate market macroeconomic situation and other factors have significant influence on the dependent variable-affordable house price, namely customer with higher family income may select house with larger building area, who is more willing to purchase high-rise building, and pays more attention to real estate market macroeconomic situation, living district supporting facilities and surrounding landscape factors, he can withstand higher house purchase price. Three variables of family income, education level as well as living district supporting facilities and surrounding landscape have significant influence on the dependent variable of planned purchase time. Namely, customer family income is higher, education level is higher, customer pays more attention to living district supporting facilities and surrounding landscape, and the planned purchase time is longer.

REFERENCES

[1] M. Menchik. Emprically Validating Preference Measures. Environment and Planning, 1972, (4), 445-458
[2] Paul. M, Anglin. Determinats of Buyer Search in a Homing Market, Real Estate.
[3] Frank. D. L. The Demand for Housing. Review of Cross Section Evidence, Review of Economics and Statistics, 1971, (53), 1-10.
[4] Fu Guoqun. Consumer Behavior (The Second Edition) . Wuhan, Wuhan University Press, 2004.
[5] Fan Hanzhang. Decision-making Psychology. CPC Central Party School Press, 1996.
[6] Ji Shengming, Teng Liang, Consumer Behavior, Nanjing, Jiangsu Science and Technology Press, 2000, 8-11.