A Study on the Impact of High-end International Education Investment on Long-Term Returns in China's Real Estate Market

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Abstract: In recent years, China's real estate industry has encountered growth obstacles, compelling companies to seek innovative strategies to enhance long-term investment returns. High-end international education has emerged as a notable "education + real estate" model, gradually gaining attention. By investing in international schools, real estate firms aim to boost the attractiveness and market competitiveness of their projects. However, the effectiveness and sustainability of this model need further investigation. This study employs a combination of literature reviews, surveys, and multi-factor regression models to analyze the impact of high-end international education on the long-term returns of the real estate market. The findings reveal that investing in high-end international education can significantly enhance the market value and brand influence of real estate projects while also contributing to regional economic development. However, the effectiveness of this approach is heavily influenced by dynamic changes in policies and market demand. This research offers real estate companies a fresh perspective on investment opportunities and also serves as a valuable reference for governments and relevant institutions when formulating regional development and education policies.

Keywords: High-End International Education; Real Estate Investment; Market Competitiveness

1. Introduction

In recent years, the Chinese real - estate industry has witnessed rapid development. However, the ensuing challenges, such as changes in market demand and policy regulation, have put the traditional real - estate development model under great pressure. To maintain a competitive edge in China's highly competitive market, real - estate enterprises are in urgent need of seeking new innovative strategies.

An emerging "education + real estate" model has gradually attracted widespread attention in the industry. By investing in international schools, real - estate enterprises can not only enhance the market competitiveness of their projects but also inject new vitality into economic development[1]. Although the investment potential of high - end international education has been widely discussed, its effectiveness and sustainability still require in - depth research.

Existing literature on this field mainly focuses on aspects such as educational quality, market demand, and the policy environment, but lacks a systematic analysis of its impact on the long - term returns of the real - estate market. Therefore, this study aims to fill this gap. By combining literature review, questionnaire survey, and multi - factor regression model, it conducts an in - depth analysis of the impact of high - end international education on the Chinese real - estate market. The main objective of this study is to explore how high - end international education investment can enhance the market value and brand influence of real - estate projects. Through the analysis of the dynamic changes in market demand, we hope to provide real - estate enterprises with a new investment perspective and offer a reference for the government and relevant institutions in formulating regional development and education policies.

2. Literature Review

After experiencing rapid growth in 2018, the

Chinese real - estate industry (a comprehensive industry integrating various economic activities such as real - estate development, construction, operation, and management) suddenly turned downward and became one of the relatively sluggish industries in the Chinese economy.

Currently, the main challenges faced by the Chinese real - estate industry include: imbalance between supply and demand, issues in national policy - making, and an imperfect governance system. Firstly, in many central, western, and northeastern regions, there is a serious oversupply of "industrial land, housing, and commercial land", while this imbalance is less common in the areas of urban agglomerations [2]. Secondly, the real - estate market is greatly affected by policy - making. A series of policies formulated by the national government based on the development of the national economy and the actual situation of the real - estate market, although aimed at promoting market stability, have to some extent exacerbated market uncertainties[3]. Thirdly, the frequent adjustments and uncertainties in policies have also undermined investors' confidence, thus affecting the healthy development of the market. Finally, the real - estate market is currently faced with the problem of an imperfect supervision and coordinated regulation system. The government's regulation and supervision of the real - estate market urgently need to be strengthened. With a low degree of marketization, an imperfect real - estate market mechanism, and an unsound housing supply and service system, it is difficult to meet residents' housing consumption demands[4].

Faced with the above - mentioned challenges, real - estate enterprises began to transform at the end of the last century and develop diversified industrial models. Entering the education industry is one of these exploratory models. According to the industry observations of the East Beach Think Tank, since Country Garden entered the high - end international education sector in 1994, various real - estate enterprises have, over the past nearly three decades, been involved to different extents in the establishment of educational enterprises and the development of schools [5]. They have established connections with international schools and international curriculums and set up high - quality high - end educational institutions.

There are mainly two reasons why real - estate enterprises have been interested in the education industry in the past few decades. Firstly, to meet social demands, so that real - estate enterprises can obtain better conditions for survival and development. Secondly, the interaction between education and real estate can inject much - needed funds into community education, thus alleviating the shortage of educational funds. As a pillar of the economy, the real - estate industry has substantial economic strength and can create conditions to attract funds for educational development, which is of great significance for enhancing educational resources and development opportunities.

However, as more and more real - estate companies enter the market, some participants have found that education investment is difficult to be profitable. Many companies have started to withdraw from education projects, pointing out that high costs, low returns, and intense market competition are the main reasons [6]. As a result, the originally promising "real - estate + education" cooperation model has gradually declined. Therefore, exploring the impact of high - end international education on the returns of China's real - estate industry has become extremely important.

3. Research Methods

The research methods used by our team consist of two parts: questionnaire surveys and regression analysis of industry data. The aim is to explore the impact of high - end international education (i.e., real - estate enterprises' investment in running schools) on the long - term returns of the Chinese real - estate market. We assume that investing in high - end international education will lead to an increase in the long - term returns of the Chinese real - estate market. We collect existing data through questionnaire surveys and retrieving publicly available corporate information, and analyze the viewpoints and data of different stakeholders (parents of students, real - estate developers, government officials).

3.1 Questionnaire Survey Analysis Method

The questionnaire was created on the

Wenjuanxing platform and disseminated through social groups and friend circles on social media software such as WeChat and QQ. The target groups of our questionnaire mainly consist of two parts: The first is parents of students, aiming to explore whether educational resources affect their real - estate purchase decisions. The content of the questionnaire mainly focuses on the urban hierarchy of residence, children's school enrollment status, and the family's investment in education. The second target group is workers in the real - estate or education industry, aiming to explore the actual role of educational resources in the attractiveness of projects, the investment payback period, and risk assessment. The questionnaire content focuses on the annual investment return rate, market revenue expectations, and the level of understanding of educational cooperation.

The questionnaire design is mainly divided into three sections: statistics of participants' information, investigation of the correlation between education and real estate, and investigation of real - estate developers' investment strategies. In the questionnaire design, our team integrated 20 questions, including 6 about the interviewees' personal information and asset situation, 8 about the interviewees' investment in education and real estate, and 6 questions specifically for real - estate practitioners. The question - asking methods include closed - ended, open - ended, and matrix questions, aiming to collect more accurate data from respondents more flexibly. The questionnaire questions have gone through multiple iterations. We have also conducted content validity assessment and face validity assessment, inviting supervisors to review the questionnaire questions.

The supervisors reviewed and evaluated the questionnaire, and we modified or deleted the unreasonable or irrelevant questions based on their feedback. Meanwhile, we also piloted the questionnaire on a small scale, collecting feedback from respondents on their understanding of the questions and the logical flow. Based on this feedback, we adjusted the content of the questionnaire.

Regarding noise treatment, during the questionnaire design process, our team tried to formulate concise, clear, and easy - to - understand questions to minimize the possibility of incorrect answers. We avoided leading questions and complex logical jumps. We also included repeated but differently - phrased similar questions to ensure the consistency of the responses and to filter out non - serious answers. Specifically, our team used methods such as data cleaning and data weighting to deal with invalid data. First, we screened for logical inconsistencies. We checked whether the answers to the questions were logical, for example, answers that were self - contradictory or did not conform to common sense, such as “having investment experience in education while being under 18 years old” were marked as invalid responses. Second, we examined extreme response patterns, identifying overly extreme or uniform responses, such as choosing the same option for all questions (selecting “strongly agree” for everything), and decided whether to delete them based on the overall situation of the questionnaire. During the analysis process, we assigned relatively low weights to responses that seemed like noise to reduce the potential impact of noisy data.

When analyzing the questionnaire results, we adopted single - question result analysis and multi - question correlation analysis. Firstly, single - question results are suitable for in - depth analysis of individual questions or variables, such as “What do you think of the future development trend of high - end international education?” This helps to reveal the impact of high - end international education on the real - estate market and local economic development, as well as the respondents' expectations for the future development of high - end international education. Secondly, for some parts of the questionnaire, we can conduct correlation analysis among multiple questions. For example, by considering questions like “What factors influence your real - estate investment?”, “What do you think are the main risks of investing in high - end international education?”, and “In what aspects do you think real - estate enterprises' running of schools impacts the real - estate market?” we can explore the relationships among multiple questions or variables, analyze and discuss the connections between the results, and reveal the mutual influence of various factors on real - estate investment, the interactions between different risks and high - end international education investment, and

the mutual influence of real - estate enterprises' running of schools on housing prices, rents, transaction volumes, and demand.

3.2 Industry Data Analysis Method

In this study, we also conducted data analysis using industry data. The basic sources of these data are the financial reports of major companies and information retrieved from public websites. On one hand, by reviewing the financial reports of real - estate enterprises such as Country Garden, Vanke, CIFI Holdings, Zhongrui Group, and Evergrande Group, we collected the revenue of each company in specific years. On the other hand, we used the public websites of real - estate enterprises' school - running initiatives to gather data such as the number of schools (number_of_schools) and school types. After obtaining the preliminary data, we further derived and transformed the data. For example, we created virtual variables based on whether schools offer kindergarten, primary school, middle school, and high school (Kindergarder_to_primary, Middle_schoo, High_school), calculated and obtained the total number of school types (total_schools_presence), and transformed the existing variables. We adjusted and corrected the revenue (competition_adjusted_revenue) based on the level of school competition in the cities where the real - estate enterprises' schools are located. Also, we took the logarithms of the real - estate enterprises' earnings and the number of schools to account for potential non - linear relationships (log_revenue, log_number_of_schools).

Regarding the analysis of regression results, we made multiple attempts at model - building, including simple linear regression, multiple regression, and regression analysis with interaction terms. The specific model methods are as follows:

1. Simple linear regression:

$$\log(income) = \beta_0 + \beta_1 The\ number\ of\ schools + \epsilon \quad (1)$$

2. Multiple linear regression:

$$\log(income) = \beta_0 + \beta_1 \log(The\ number\ of\ schools) + \beta_2 Degree\ of\ competition + \beta_3 The\ total\ number\ of\ school\ types + \epsilon \quad (2)$$

3. Regression with interaction terms:

$$\log(income) = \beta_0 + \beta_1 \log(The\ number\ of\ schools) + \beta_2 Degree\ of\ competition + \beta_3 The\ total\ number\ of\ school\ types + \beta_4 (\log(The\ number\ of\ schools) \times Degree\ of\ competition) + \epsilon \quad (3)$$

Each of these regression methods has its own advantages and disadvantages. Specifically, the simple linear regression method is the simplest and most straightforward, and it can reveal the direct impact of the number of schools on revenue. However, its drawback is that the model does not consider other factors that may affect the revenue of real - estate enterprises in school - running, such as the local education competition level and the coverage of school types established by real - estate enterprises. Multiple regression incorporates multiple variables, which can address the shortcomings of simple linear regression. However, a potential issue is that there may be too many variables, making it impossible to achieve significant results in the end. Also, it assumes that the variables are independent of each other and cannot capture the interaction effects between variables. Interaction regression can reflect the relationships between variables, but the problem of result significance is more obvious, and it may ultimately fail to yield valid research results. Therefore, after multiple model comparisons (table 1), we finally selected the multiple regression model and used the non - linear variables after taking logarithms as the objects of discussion. The aim is to more comprehensively capture the impact of the number of schools, competition level, and the interactions between various variables on the returns of real - estate enterprises in high - end education school - running.

4. Research Analysis

4.1 Analysis of Questionnaire Results

4.1.1 Highly - informed respondents recognize the positive impact of high - end international education on real - estate investment

Our team conducted statistical data analysis based on the results of 129 questionnaires collected. Respondents in the age groups of under 18 years old, 31 - 40 years old, and 41 -

50 years old accounted for a relatively significant proportion, covering the target groups planned for interview before the questionnaire distribution. Moreover, most of the respondents were from first - tier cities in China (Beijing, Shanghai, Guangzhou, Shenzhen). Among them, most respondents had substantial expenditure on education. More than 51% of the respondents clearly indicated that they spent over 3000 yuan per month on education, demonstrating the respondents' concern about educational issues. According to the statistics on the respondents' understanding of real - estate enterprises' school - running cases, all respondents had some exposure to the international education programs established by well - known real - estate enterprises.(As shown in Figure 1).

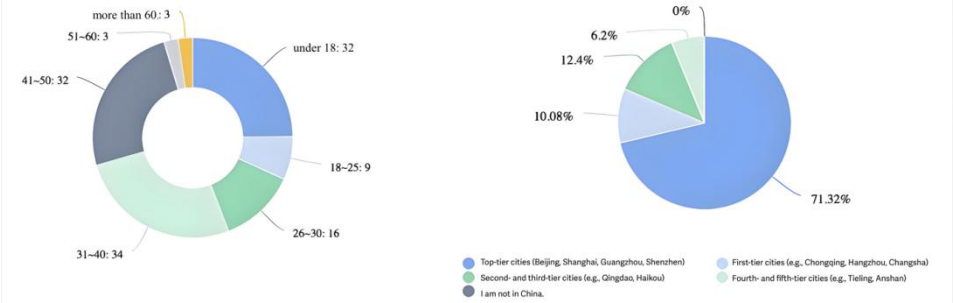

Figure 1. Distribution of Respondents

Regarding the respondents' willingness to spend extra on the quality of educational facilities around the real estate they invest in, the proportion of those who are unwilling to spend extra is relatively low, indicating that most respondents attach great importance to educational facilities. Overall, more than 53% of the respondents are willing to spend an additional 3% or more of their budget, highlighting the importance of the quality of educational facilities in real - estate investment decisions. (As shown in Figure 2).

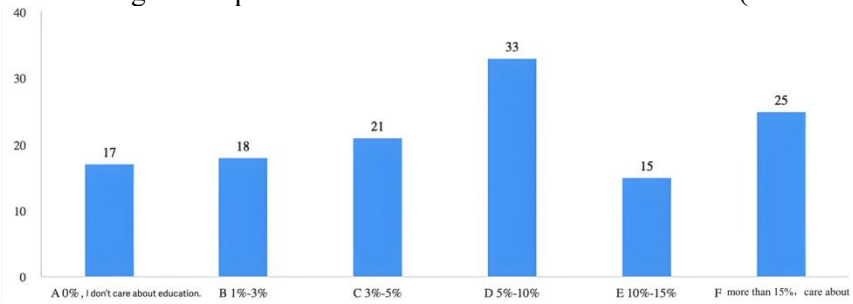

Figure 2. Respondents' Willingness to Make Additional Expenditures on High - quality Educational Resources around the Invested Real Estate

In terms of the respondents' perception of the impact of education investment on the economy, more than half (52.34%) of the respondents have strong confidence in the growth of high - end international education investment. Among them, the vast majority of respondents (78.13%) believe that the increase and prosperity of high - end international education have a positive impact on the local economy. (As shown in Figure 3).

Figure 3. Respondents' Expectations for the Future Trends of International Education Investment and Their Perception of the Impact of International Education on the Economy

Regarding the impact of real - estate enterprises' school - running on the real - estate market, the 129 respondents of the questionnaire believe that real - estate enterprises' school - running has led to significant growth in housing prices, rents, real - estate transaction volumes, and real - estate demand. More than 70% of the

respondents think that real - estate enterprises' school - running will cause housing prices and rents to rise. According to the survey results, the main factors that respondents believe affect real - estate investment include existing funds and future loan situations, the economic environment and expectations, supporting facilities around the real estate (such as educational quality), policy support, and family asset allocation needs. (As shown in Figure 4).

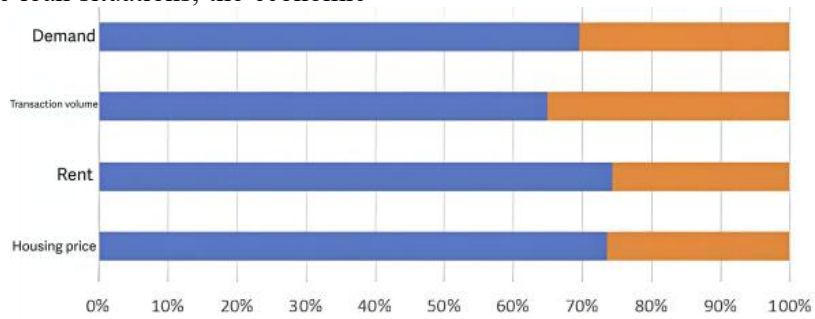

Figure 4. Statistics on the Impact of Real - Estate Enterprises' School - running on Four Aspects of the Real Estate

4.1.2 Practitioners adopt a cautious attitude towards international education investment

We also collected the opinions of 9 respondents who have invested in international education through the questionnaire. In the sample, more than half of the respondents believe that policies and the reputation of cooperative educational institutions pose significant risks to international education investment, and that the returns from investing in international education are not as high as expected. Although the sample size of these investors is small, it still provides us with some directional insights into the returns of high - end education investment. (As shown in Figure 5).

Figure 5. Comparative Statistics of the Investment Return Rate of International Education and Other Investments

4.2 Analysis of Regression Results

By analyzing the three regression models, we examined the impacts of the number of schools, the competition level, and the total number of school types on the school - running revenues of real - estate companies. The results show that the outcomes explained by different variables in the models vary.

Table 1. Analysis of Regression Results

	Model1: Simple Linear Regression	Model2: Multiple Regression	Model3: Interaction Regression
(Intercept)	21.7633**	19.55644*	29.891
	(1.35)	(6.28)	(17.88)
log_number_of_schools	0.8847	0.9795*	17.0015**
	(0.43)	(0.44)	(5.53)
level_of_competition		-0.4127	6.7456
		(0.83)	(2.55)
total_schools_presence		1.647	2.1233
		(1.27)	(1.02)

log_number_of_school:level_of_competition			2.3855
			(0.82)
N	17	17	17
R2	0.2211	0.326	0.6041
All continuous predictor variables have been mean-centered and standardized by one standard deviation. The dependent variable remains in its original units. *** indicates $p < 0.001$; ** indicates $p < 0.01$; * indicates $p < 0.05$.			

Firstly, the simple regression model includes only the logarithm of the number of schools as a variable. It shows that the impact of the number of schools on the school - running revenues of real - estate enterprises is positive and significant (estimated value is 0.8847, $p = 0.0568$). However, the limitation of this model lies in the fact that the R - squared value is only 0.2211, indicating that the model can only explain about 22% of the differences in the revenues of real - estate enterprises. Therefore, although the simple regression model confirms our judgment on the direction, further analysis of the impacts of other factors on revenues is still needed.

Secondly, the multiple regression model adds some variables based on the simple regression model, and the results show that the number of schools still has a positive impact on the revenues of real - estate enterprises. Specifically, a 1% increase in the number of schools will lead to an approximately 0.9757% increase in the revenues of real - estate enterprises, and this result is significant. This indicates that even when the competition level and the types of school coverage are controlled, the number of schools remains one of the core factors affecting the revenues of real - estate enterprises. Moreover, more investment in the construction and establishment of international schools will have an impact on the revenues of real - estate enterprises in a nearly proportional manner.

Finally, the interaction regression model further introduces the interaction term between the number of schools and the competition level to explore the relationships among variables. The impact of the interaction term is relatively significant (estimated value is 2.3855, $p < 0.05$), suggesting that in a highly competitive environment for local international schools, the marginal effect of the number of schools on the revenues of real - estate enterprises is more significant. However, although the explanatory power of the interaction model is relatively strong, its complexity also increases significantly. Considering the limitations of the original data and the variable collection process (such as the subjective evaluation of the competition level and different statistical caliber), we do not consider the results of this model as the top - priority. Therefore, the multiple regression model is the main model used by our team for conclusion analysis.

5. Discussion and Conclusion

5.1 The Number of Schools Is Proportional to Real - Estate Returns

Through the analysis of variables such as the number of schools, the competition level, and school types, the results obtained by our team show that the number of schools is a crucial driving factor for the revenues of real - estate enterprises. Regardless of which of the three regression models is used, an increase in the number of schools significantly boosts the revenues of real - estate enterprises, reflecting the importance of educational resources in real - estate development.

In addition, the interaction between the competition level and school types also has an impact on school revenues, indicating that when evaluating real - estate projects, apart from the number of schools, the intensity of competition in the educational environment and the types of schools are also factors that cannot be ignored. In the model, the number of schools in areas with more intense competition has a more significant marginal impact on revenues. This suggests that when real - estate enterprises expand their school layouts, they should pay attention to the local competition level and formulate more targeted strategies in combination with external factors to increase revenues. This also implies that future research should further explore the complex relationships among these factors to provide more comprehensive strategic

recommendations.

5.2 High Awareness of Real - Estate Enterprises' School - running Cases Brings a Limited but Positive Revenue Prospect

The level of awareness that respondents have of real - estate enterprises' school - running cases not only indicates that these school - running initiatives have a certain degree of brand influence and market reach but also shows that the respondents have the cognitive basis to answer the questionnaire. The former implies that real - estate enterprises already have a market foundation and can subsequently leverage their brand advantages for in - depth development and strengthen their synergy with the real - estate sector. However, the respondents' attitudes towards the school - running of nearby real - estate enterprises and their investment intentions in international education suggest that although the public is aware of the phenomenon of real - estate enterprises' school - running, they lack in - depth understanding. This requires real - estate enterprises to enhance information dissemination in aspects such as school - running promotion in the future.

In addition, the data on respondents' perception of the risks and returns of international education investment shows that currently, in the perception of investors, the risks of international education investment are relatively concentrated, and the returns from international education investment have not reached the desired level. The data on respondents' perception of the impact of real - estate enterprises' school - running on the Chinese real - estate market directly demonstrates the influence of real - estate enterprises' school - running as a value - added feature of real - estate in the public's perception. The school - running initiative has the potential to become a powerful lever for differentiated competition in the Chinese real - estate market and for increasing long - term returns.

In summary, the results of the questionnaire and data analysis jointly reveal the close connection between real - estate enterprises' school - running and the profits of the Chinese real - estate market. Our team conducted investigations from multiple dimensions, including current affairs consultation, public perception, investment willingness, and market impact. However, limited by factors such as the sample size, some conclusions need to be further deepened and improved. It is necessary to further collect data to accurately assess the impact of real - estate enterprises' school - running investment on the long - term returns of the Chinese real - estate market and provide optimization paths.

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