

# Feasibility Study on Investment Environment of Tourism City Real Estate Projects Based on Data Model Visualization and PEST Model: A Case Study of Beihai City

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**Abstract:** Based on the feasibility of real estate projects in tourist cities in the post epidemic era, this paper analyzes the residential projects in Changsha Bay, Beihai City, Guangxi Province, China with PEST model. Through the key analysis of external environmental factors such as policy, economy, society and technology, the analysis process focuses on the current policy environment and social and economic conditions of Beihai City, as well as the current technical environment of the construction project computer, especially highlighting the importance of the current BIM technology innovation as the second information revolution. In this paper, the computer visualization model of dormitory project is cited to help with technical analysis. Finally, the conclusion is drawn that although the project has certain disadvantages and risks, within the controllable range, the research results have certain reference significance for the feasibility of tourism city real estate projects.

## 1 INTRODUCTION

The tourism industry plays an important role in stabilizing employment, promoting sales, building a new pattern of "double circulation" and helping common prosperity. At present, the tourism industry is changing quietly, showing a new trend of integration and development with other industries, and constantly spawning new models, new formats, and new industries. In particular, the tourism industry is a great boost to the real estate industry. A good city name card can promote the sales of local real estate projects, successfully promote the city's investment attraction, and greatly develop the city's economy. With the sudden attack of the COVID-19 in 2019, the global economic development has suffered a serious impact, and the tourism industry has suffered a heavy blow. As a result, the real estate industry in tourist cities has also suffered a blow. Investment failures and decision-making errors account for a large proportion of projects. Analysis of the reasons for these project failures, in addition to the lack of management and development project positioning, The most important thing is the lack of feasibility study on the investment environment of real estate projects in tourism cities in the post epidemic era. For

real estate projects in specific tourism cities in the post epidemic era, do they have the conditions for development? Can it be developed? Is there any development prospect? These issues need to be made scientifically based decisions. Therefore, it is very necessary to study the feasibility of investment environment for development projects.

BIM originates from a concept proposed by Dr. Chuck Eastman of Georgia Tech College: building information model contains all information, functional requirements and performance of different majors, and integrates all information of a project into a building model. As an integrated technology, BIM integrates design, construction, management and other aspects into one. Its emergence conforms to the current trends of industrialization, standardization, informatization and other aspects of the construction industry. BIM technology is quietly promoting the second information revolution in the construction industry.

The concept of "research" has been applied in the Tennessee River Basin Control Project (Emil Malizia 1992). The project has achieved great success and triggered a wave of research and application of feasibility theory. After years of development, the feasibility study has penetrated into many fields and

become an important part of the early stage of the world project investment decision-making. Jean Durby, a French engineer, published the Utility Evaluation of Public Works in 1844. Aiming at the problem that the financial analysis method cannot correctly evaluate the economic benefits of public utilities projects to the whole society, he proposed the concept of "consumer surplus" (Heralova 2017) In 1950, the United States published the Practical Method for Economic Analysis of Inland River Projects, which stipulated the principles and procedures for studying the relationship between benefits, cost ratio, project benefits and GDP .

## 2 PEST ANALYTICAMETHODS

PEST analysis method is a basic tool for strategic external environment analysis. It generally grasps the macro environment through the analysis of political, economic, social and technological factors or four aspects, and evaluates the impact of these factors on the investment environment of real estate development enterprises (Reddy Sai Sravanth and N. Sundaram and Desti Kannaiah 2019)

PEST Analysis was developed by Philip Kotler, a business scholar, marketing guru, and professor at Northwestern University's Kellogg School of Management. "Trying to enter a market without research is like trying to enter a market blindly," Kotler said in his book Kotler's Strategic Marketing. (Peng and Nunes, 2007). It explains the importance of environmental analysis.

To date, most successful businesses and products have been credited with taking advantage of changes and trends in the world. As the external environment changes, enterprises can keep pace with The Times by changing their business and products to survive (Murong Ren and Litian Wang 2020). PEST analysis is positioned as one of the frameworks to understand this external environment (especially the macro environment) and to have an impact on the company.

## 3 ANALYSIS OF PROJECT INVESTMENT ENVIRONMENT

### 3.1 Overview of Beihai Real Estate Project

Beihai City is a city famous for tourism. Taking the real estate project of Beihai City, Changsha Bay, as an example, it was carried out under the background

of the COVID-19, when the tourism industry was hit. Analyzing the residential project of Changsha Bay, a Chinese port city, will help us understand whether the real estate project of the tourist city in the post epidemic era is feasible. Beihai Zhong gang City is located on both sides of Shanghai Road and Chongqing Road, Henan Road, Haicheng District, Beihai City, connecting the old city, He pu County and Tie shan gang District. Surrounding banks, markets, schools, hospitals and other facilities, Beihai Zhong gang City will stand at the height of the city, interpret the legend of the city with an international vision and vision, and build a new profile and skyline of Beihai.

### 3.2 PEST Analysis on Investment Environment of Changsha Bay Project in Zhong gang City

#### 3.2.1 Policy Environment Analysis

2019 is a very special year. On December 29, COVID-19 began to break out. By 2020, the real estate market will be greatly affected by the spread of COVID-19. In the first half of 2020, the central government repeatedly stressed the need to strengthen counter cyclical regulation, maintain reasonable and sufficient liquidity in the real estate trading market, and ensure employment, livelihood, market, food security and supply chain stability in the "six stability" and "six guarantees"; Under the policy background of stabilizing employment, finance, foreign trade, investment and expectation, the overall financial environment pressure of the real estate industry is not large. At the same time, in order to fully release the domestic consumption potential, the government has increased the strength of the new urbanization and regional development strategy. At the same time, it has delegated some land approval rights, improved the market-oriented allocation of production factors, accelerated the transformation of old cities and dilapidated buildings, and promoted the long-term development of the real estate industry. In terms of real estate regulation, the central government still adheres to the orientation of "no speculation in housing, that is, no speculation in housing". Although under the macro background of reasonable and abundant liquidity, the financial supervision of the real estate industry is still strict, the local government's policies on cities are more flexible, and many places have introduced real estate support policies from both supply and demand. Although the overall regulation situation has improved slightly, the government still adheres to the determination of

regulation and the bottom line of the main body of regulation, and the demanders implement it more from the aspects of relaxing population placement, lowering the threshold for talent introduction, and

increasing housing subsidies. Beihai carried out an analysis forum on the real estate situation in view of the current national macroeconomic conditions, and analyzed the current real estate related policies.

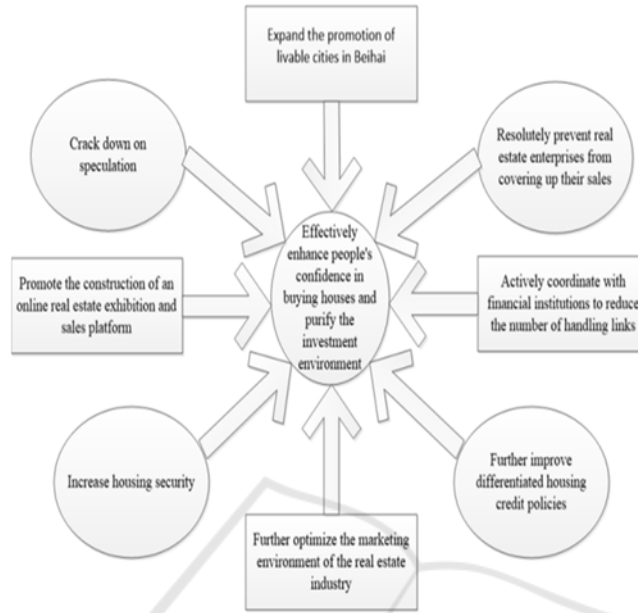


Figure 1: Content of Beihai Real Estate Situation Analysis Symposium in June 2020.

**3.2.2 Economic Environment Analysis**

Strive to speed up work and achieve real results, steadily accelerate agricultural production, accelerate the recovery of industrial operation, actively and steadily develop the service industry, and generally

maintain the economic operation within a reasonable range. GDP Development Status of Beihai City in Guangxi Province in Recent 10 Years (all data are from Guangxi Statistical Yearbook.

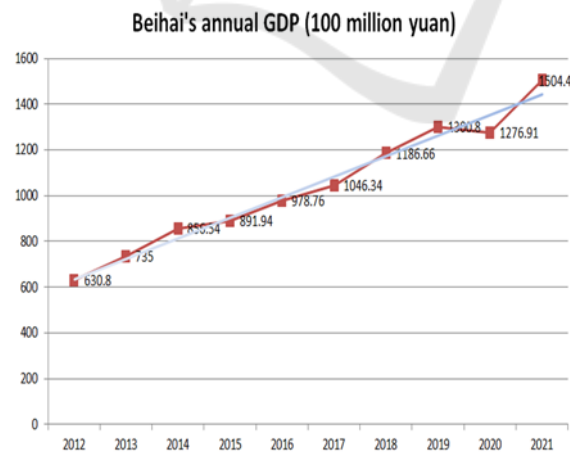


Figure 2: Change Trend of Beihai's GDP in Ten Years (100 million).

**3.2.3 Social Environment Analysis**

Analyze the employment, residents' consumption and construction industry of Beihai City, and analyze the

social environment of the project. In general, the number of new employees in Beihai is on a steady trend. In the 19th and 20th years, the decline was largely due to the epidemic. At the same time, the

number of new employees in Beihai is not large because Beihai is a foreign tourist city and the size of local urban residents is not large. But in recent years, as more and more people are willing to come to Beihai and take root in Beihai, the government has also made great efforts to develop Beihai so as to increase more and more employment opportunities, The economic development of Beihai has also been improving. At the same time, the demand for housing is also increasing.

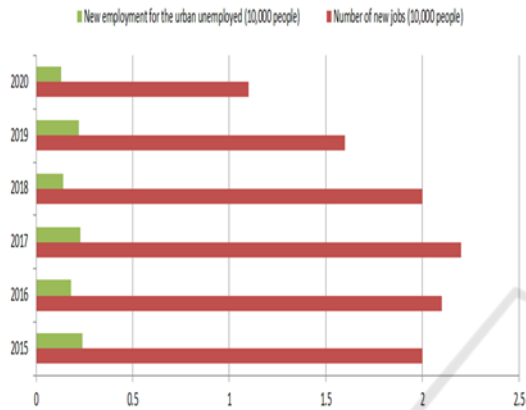


Figure 3: New employed population in Beihai from 2015 to 2020.

Since 2016, all walks of life, including the construction industry, have developed rapidly, with the real estate industry bearing the brunt. More and more real estate developers have taken a large amount of land for real estate development and construction. The following is the added value of the construction industry in Beihai from 2016 to 2020.

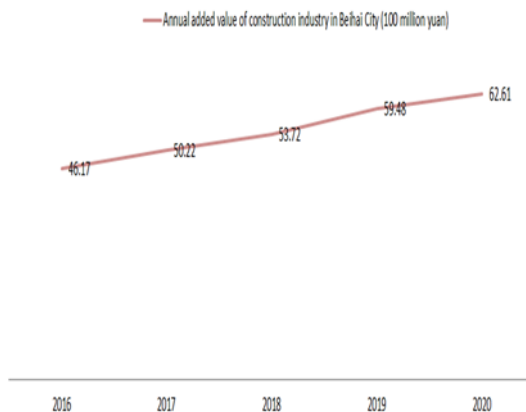


Figure 4: Change trend of added value of construction industry in Beihai from 2016 to 2020.

In 2020, the consumer price index of Beihai residents will generally show a stable trend. Although

it will show a downward trend in some seasons, it is because the epidemic still has a certain impact.

With the normalization of the prevention and control of the novel coronavirus epidemic, the consumer price index in Guangxi has been rising steadily from both the sequential and year-on-year perspectives, which fully demonstrates the strengthening of people's willingness to buy and the improvement of the surrounding consumption environment, which is conducive to further promoting the improvement of the real estate market.

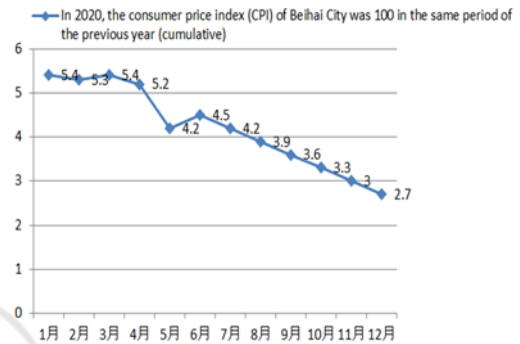


Figure 5: Consumer Price Index of Beihai City in 2020.

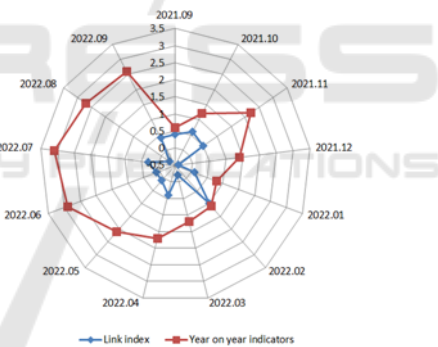


Figure 6: Growth of Consumer Prices in Guangxi Province.

Specifically, by the end of 2020, in the key year to comprehensively win the battle against poverty, all the poor people in 79 poverty-stricken villages, 13095 households and 55000 registered cards in the city will have been lifted out of poverty. They have firmly fulfilled the tasks assigned by the General Secretary, and improved the confidence of urban residents in yearning for a better life. Since 2015, the incidence of poverty has dropped from 3.6% in the year to 0% by the end of 2020. This is not a simple figure, but the joint efforts of all Beihai people, At the same time, the annual per capita income of poor households has increased from 3102 yuan at the end of 2015 to 12727 yuan in 2020, realizing the first century dream of Beihai people and the country to achieve a well-off

society in an all-round way. The living standard of the people has greatly improved. The following is the increase in consumer price expenditure of Beihai residents in 2020

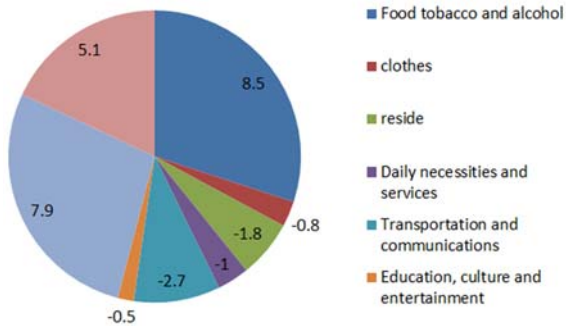


Figure 7: Consumer Prices of Beihai Residents.

### 3.2.4 Technical Environment Analysis

Since the reform and development, all walks of life have ushered in their own innovation and even revolutionary development, and the field of architecture is no exception. The most noticeable one is the development of BIM technology. The so-called BIM refers to building information modeling. Literally, it is not difficult to understand that it is the use of technical operations to reflect the building information on the model, that is, 2D information becomes 3D information, which is also called "visualization". The traditional architecture field cannot realize the visualization or detection of technology, but the birth of BIM can understand the project in the whole process and establish the building model. The role of BIM can be simply taken as an example: for example, Xiao Ming invited three friends to have dinner at home, and each friend is required to bring a cooking tool. A friend brought a spoon, B friend brought a spoon, and C friend also brought a spoon. As we all know, this meal was impossible. The reason is that when we were preparing this meal, we did not know about it, that is, we did not have control over it. Today, if Xiao Ming had a mobile phone and informed all his friends before going out, then there would be no problem with the division of tableware for this meal, and it would not happen unintentionally. The "meal" here can be understood as an engineering construction project, and the "mobile phone" can be understood as BIM technology. Now in the age of big data, there are many media software for building technology, such as Guanglianda, Luban, NW, Revit, etc. In a word, the current real estate construction industry is still developing rapidly, and the future technology is also growing rapidly. Perhaps today's BIM technology

will also become the foundation of the latecomers in the next 2-3 years. When new technologies come, the construction field will be more earth shaking changes.

Building engineering software is widely used. Taking a student dormitory building as an example, the 3D model of the project is built using the Guanglianda civil engineering calculation software GTJ2021, and then the project cost is compiled using the Guanglianda GCCP6.0 software. A simple technical and economic analysis of the data is conducted, and finally the feasibility of the project is judged. The whole process can be visualized through the model.

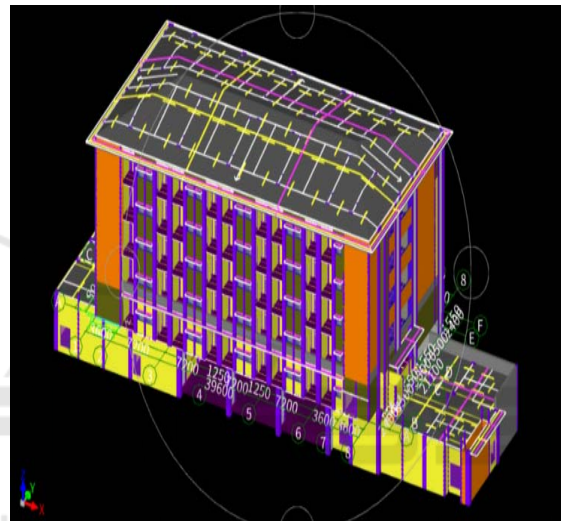


Figure 8: GTJ Computer Software to Construct 3D Model A of Student Apartment.

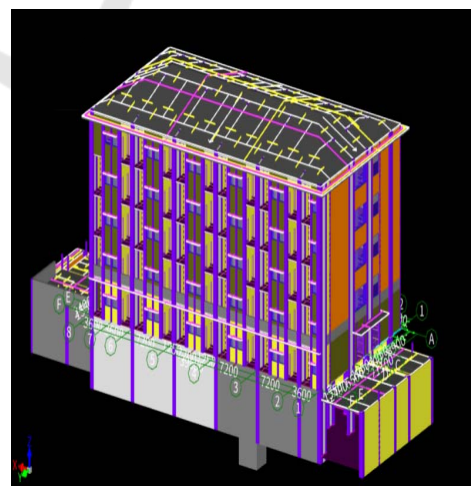


Figure 9: GTJ Computer Software to Construct 3D Model A of Student Apartment.

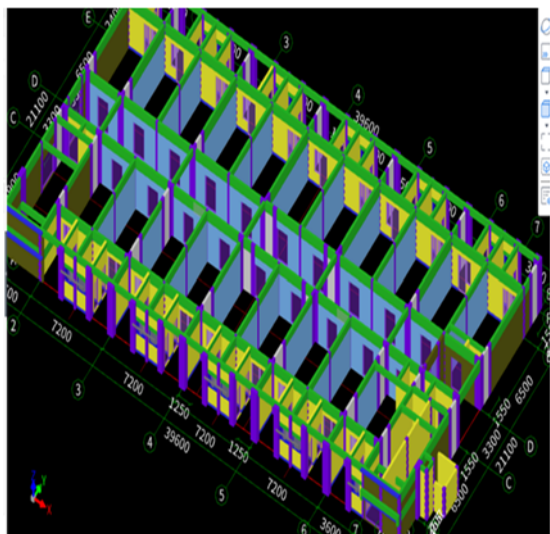


Figure 10: GTJ computer software construction of 3D model of student apartment - model of constructional column construction stage.

## 4 CONCLUSION

With the gradual standardization of COVID-19 prevention and control, as well as the strong support of the country for the cultural tourism industry integration to promote common prosperity and achieve high-quality development, and the rise of BIM technology in the current environment and the wide application of PEST model method, the feasibility analysis of the real estate project investment environment in tourism cities has become an urgent problem to be studied. Taking the Changsha Bay project in Beihai Zhonggang City as an example, this paper conducts a feasibility study on its investment environment through market research, data analysis and 3D model demonstration, and draws the following conclusions:

According to the PEST analysis of the investment environment in Zhonggang City, Beihai City, the current national policy is to emphasize "stability", and the country still supports the development of the real estate industry. While supporting the industry to promote social and economic development, it has also led to the transformation of new technologies, especially the rise of BIM technology and the generation of big data in recent years. The feasibility of the project's technical environment is further confirmed by the 3D model visualization of the dormitory project in the technical analysis. Therefore, from the perspective of policy, economy, society and technology, the real estate investment environment of

tourist cities still has a great prospect and development space. Therefore, the real estate projects of tourist cities still have a good investment environment.

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