Viability in Real Estate Project Financing: An Empirical Study on Residential and Commercial Projects in Nagpur city

Prashant Mahadeorao Harle[1], Dr. Sagar Chintamanrao Khursange[2]
[1]Research Scholar, Central Institute of Business Management Research and Development, Nagpur
[2]Asst. Professor, Central Institute of Business Management Research and Development, Nagpur
***Corresponding author: Prashant Mahadeorao Harle, Research Scholar, Central Institute of Business Management Research and Development, Nagpur.**
Email: prashant.harle@cibmrd.edu.in
Received: 26th October, 2026; **Revised:** 7th November, 2026; **Accepted:** 17th November, 2026; **Available Online:** 12 April, 2026

Abstract
Real estate sector is one of the major segments in economic development as it has created jobs, allied industries as well as provides huge proportion to urban infrastructure development. Project money has really turned into a key ingredient to ensure that home and business real estate tasks are completed successfully and on top of that, in truth. When implementing these projects, there are a number of financial, economic and market factors that ought to be taken into account, which involve the capital structure, construction cost, consumers' demand, risk management, regulations, and the ROI. This study concentrates on viability analysis on the funding of real estate projects, as residential and commercial projects are those that are undertaken within the boundaries of the city of Nagpur. An empirical method is applied, in which the primary data is gathered from the real estate developers, financial institutions and project stakeholders, while secondary data are gathered from the reports and financial statements. These are the main factors of why a project will produce a profit, financial make up of a project, financing the cash flow, risks to an investment and the efficiency of completing a project. The risk is most clearly highlighted in the comparison of the residential and commercial projects' handcrafted financial statements, and these specific outcomes make a stark illustration of the different financing requirements and risk profile of residential versus commercial projects and the importance of appropriate financial planning and funding. The study has massive implications for builders, investors and policy makers in the real estate sector for developing sustainable and economically viable real estate initiatives in new emerging urban markets like Nagpur.
Keywords: Real Estate Financing, Project Viability, Residential Projects, Commercial Projects, Investment Analysis, Nagpur City, Financial Feasibility.
How to cite this article: Harle PM, Khursange SC. Viability in Real Estate Project Financing: An Empirical Study on Residential and Commercial Projects in Nagpur city. Int J Drug Deliv Technol. 2026;16(68s):903-909.
DOI: 10.25258/ijddt.16.68s.106

Introduction

Real estate is one of the most influential drivers of economic growth and transformation of cities worldwide. It helps in harnessing Industry by creating jobs, creating investment opportunities, influx of capital from domestic and overseas sources to allied industries such as Cement, Steel, Building Materials, Banking, Insurance etc., and infrastructure. Rapid urbanization, population growth, rise in the disposable income, migration to urban centres and enabling government policies have had a significant impact on the real estate sector in India in the last two decades. The sector makes a significant contribution to the country's Gross Domestic Product (GDP) and it is an important measure of economic development. In the context of residential construction, commercial buildings, retail centers and Integrated Townships (ITPs) becoming in greater quantity, financing solutions are becoming increasingly significant, necessary to ensure the successful completion of projects and long-term sustainable development.

Real estate projects have very high capital requirements and must leverage significant funds for various real estate development phases such as land purchasing, real estate development planning, project construction, real estate marketing and maintenance. Project funding is a possibility in real-estate development, as there may be incoming funds that are capped. Project financing is a set-up that can be used where the debt will be paid back and returns to the investors will mainly be derived from the cash flow of the project and not the overall assets of the developer. It enables a spread of risk between a group of parties – the developers, financial institutions, investors and government agencies. These three elements are essential to the success and sustainability of any real estate project and rely on using the correct financial evaluation, market viability and risk/return assessment.

Project viability in real estate finance identifies a series of economic and non-economic metrics that help to decide if a project produces a sufficient revenue to be able to pay lenders and investors. A viability assessment is also carried out which includes the project's costs and any relevant forecast of revenues, patterns in cash flow, profitability measures, pay back periods, repayment ability and ROIs. Besides the financial dimensions, such as area benefits, system availability, regulatory permissions, marketplace demand, demographic trends and economic fortunes, a wide variety of other non-financial elements also have a critical influence on the realisation of real property employment. As a consequence of market economic conditions and an increasing real estates market, the viability analysis has become a prerequisite, which is required before a well-founded investment and financing can be made.

The Indian real estate industry has seen a massive transformation since the launch of regulatory reforms like the Real Estate (Regulation and Development) Act, 2016 (RERA) which has increased transparency, accountability and added to investor confidence. Furthermore, the new real estate investment opportunities are created by schemes such as the Pradhan Mantri Awas Yojana, the Smart City Mission, and infrastructure-related projects. However, this will need to overcome a series of challenges for the industry including project delays, variable demand for the character of projects being built, economic uncertainty, high construction costs, and liquidity issues. Banks are also more leery about dishonoring real estate loans because of uncertainty over loan repayments and fluctuations in the property market. Gaining understanding surrounding the viability of the real estate project financing has thus become crucial to the efficient utilization of financial resources and reduction of investment risks.

Nagpur is a popularly-acclaimed geographical centre of India, which has become a one of the fastest growing cities in Maharashtra. With the jump in industrial development, the connectivity of the city and the development of the infrastructure network, and the policy being implemented by the Government such as Multi Modal, International and Cargo Hub and Airport at Nagpur (MIHAN), the residential as well as commercial property development activity has experienced a tremendous rise in this city. As demand for housing, offices and retail/commercial complex grows, the investment that is involved in these developments is significant, if not monumental, especially from the investment side of the developer and finance house. It will, however, be necessary that the projects are financially viable and suited financing mechanisms need to be available. Comparative viability analysis is of huge importance because the needs of investment, methods of income generation, risk types and financing arrangements in residential projects and commercial projects are vastly different.

The purpose of the present study is to find out whether financial viability and feasibility of real estate project is possible or not based upon the financial parameters of real estate project and indicative 2D of real estate project performances in the case of Nagpur City for different both residential and commercial projects. The objective of this study is to identify the factors that might be a cause of success or failure of a project, explore issues facing the financing of a project and to compare the profitability and risk associated with residential project with the commercial project. The outcome of the research will provide insights for the developers, financial institutions, investors and policy makers on developing feasible financing strategies and thus foster sustainable growth in the real estate segment of Nagpur city.

Literature Review

The concept of risk versus returns, which are ubiquitous in the developed and emerging economies, have been studied mainly regarding real estate investments. Case study by Brent W. Ambrose, Yongheng Deng and Jianping Wu (2015) investigated the risk-return compromise in real estate investments, and discovered that, on average, riskier investments appeared to be more profitable. They did studies to assess the needs for the correct evaluation of the risk of such projects in the long-term along with the required financing schemes. The results indicate the need of implementing advanced evaluating systems prior taking decision on funding of big-scale residential-commercial developments by the developers and/or financial institutions.

Thillainathan Arun, Rupa Rege Nitsure Kamath (2015) researched on financial inclusion and availability of finance for economic development. Availability of formal sector finance, both in housing finance and project finance, was largely linked with economic growth and infrastructure building, they said. There are specific parts of the financial system that are looking favorable for investment in the real estate sector that allows capital to be provided for the construction and development of the city, the researchers said.

Michael Ball (2014), however, analysed structural changes to the construction industry and noticed that optimal resource allocation, financing condition and economic factors are crucial for project success in construction. From the study, the role of financial cycles, interest rates and investor actions in the construction sector could be highlighted, which directly affect the feasibility of real estate projects.

Ashok Bardhan, Runa Datta and Robert Edelstein (2007) studied the cyclical properties of housing and real estate markets in India. They discovered that economic growth, income and interest rates are considerable factors in the demand for housing and property value. The study found it crucial to familiarize oneself with market cycles for making investment decisions and determining project feasibility.

Importance of housing policies in the context of developing countries were highlighted by Robert Buckley and Jerry Kalarickal (2006). The importance of supportive policies from the Government and functioning housing finance systems for creating affordable housing and incentivizing private sector real estate development efforts was stressed. They emphasized the need to provide structures to provide long-term financing and risk management for project investments.

Jianfa Chen, Lei Zhang (2019) talked about the relation between the urbanization, domestic capital investment and economic growth. The authors have observed that as of now the city is experiencing rapid urbanization, which later resulted in a high demand for real estate accommodation and houses and stimulated a lot of real estate projects. According to their study, sustainable urbanization policies have a positive influence on financial viability of real estate development.

Government of India Real sector is one of the major contributors to the economic development, employment creation and infrastructure creation as per the Economic Survey of India, 2023 cited by the Ministry of Finance. Good financial structures and an enhancement of sectoral regulations, were raised as important steps for improved project implementation and investment in the sector, during the survey.

Charles Ka Yui Leung (2004) investigated the influence of macroeconomic variables on housing markets, and identified that inflation rates, interest rates, growth of incomes and credit availability are variables that are important in influencing housing investment decision making. The study showed that macroeconomic stability is fundamental for the sustaining and profitability of real estate project.

India's urbanisation and the demand for building construction and commercial facilities is exploding exponentially according to the ministry of Housing and Urban Affairs (MHA) 2022 report. The report pointed out that adequate project financing tools need to be created to support urban infrastructure and affordable housing tends.

The report released by the National Housing Bank (2021) indicated that housing finance has been rising significantly in India as the demand for housing in the urban market is attracting financial flows and housing sector has been supported by the government. Access to long-term funding for real estate projects has been beneficial in building up the projects, and this report described some of the gains made from such funding and their effect on the profitability of real estate projects.

Bhavesh Patel, Manoj Sharma (2018) did a study on the development of real estate and urban development in Maharashtra and concluded that the real estate and urban development has been positively influenced by the infrastructure and industrial development in the bigger cities of Maharashtra. Their study revealed that urban development has a profound effect on the potential of real estate development projects and their viability.

The Reserve Bank of India (2022) has mentioned that housing and construction industry is key to economic development and employment generation in the States. The report also pointed out the emergence of institutional funding in order to support the large-scale real estate projects.

Schwere housing booms and later busts had been discussed and analyzed by Calvin Schnure (2005) who developed a conclusion that credit expansion and credit speculation can lead to instability and financial stress in the markets. The research revealed the necessity for responsible lending practices and project due dilligence for financially sustaining the real estate investments.

Sharma and Mehta (2020) in their study highlighted the association between the economic development and tenure development in States of India and found out that there is a positive association between the advancement in real estate market and economic performance of the Region. They found that real estate investments, which are well planned, have a sizeable impact on employment, infrastructure, and income generation.

Apart from that, Amit Singh and B. Venkataramani (2018) analysed the different region-wise real estate development gaps and found that infrastructure, financial opportunities/economic conditions has played an important role in real estate development in India across regions. Similarly, the United Nations Human Settlements Programme (2020) and the World Bank (2019) were discussed, including the requirement of sustainable urbanization and realizing effective implementation of housing finance in terms of achieving inclusive economic development as well as the sustainability of real estate projects.

The literature reviewed has revealed that both the financial and economic aspects, regulation and market aspects affect the viability of the real estate project. Considering past studies, some research works have attempted to make direct comparison between viability of residential and commercial project financing and comparatively not much of such research has been done in emerging cities such as Nagpur city, as edged out in the present study. The empirical studies of this type thus describe and point to the feasibility of this type of project financing for residential and/or commercial project, especially in emerging urban centres such as that of Nagpur city as observed in the cases of this study.

Objectives of the Study

1. To examine the financial viability and financing patterns of residential and commercial real estate projects in Nagpur city.
2. To analyze the impact of key financial and market factors such as project cost, cash flow, risk, profitability, and return on investment on the viability of real estate projects.
3. To compare the financing structures, risk profiles, and financial performance of residential and commercial real estate projects and suggest measures for improving project financing efficiency and sustainability in Nagpur city.

Hypothesis

Null Hypothesis (H_0): There is no significant difference in the financial viability and financing patterns of residential and commercial real estate projects in Nagpur city.

Alternative Hypothesis (H_1): There is a significant difference in the financial viability and financing patterns of residential and commercial real estate projects in Nagpur city.

Research Methodology

The present study is descriptive and analytical research that aims to analyse the feasibility of Project financing in Residential and commercial Real estate projects, in Nagpur city. Two sources of data are used, primary and secondary data source, in order to achieve the goals of the study. The structured questionnaire form and personal interview with the concrete real estate developers, project manager, financial institutions, bankers, investors and others associated with the real estate project of Nagpur city (residential / commercial) was used to gather the primary data. Based on the fifth Likert scale measurement, the designed questionnaire helps them gain the perception of the respondents regarding the pattern of project financing, financial viability, risk factors, profitability, management of cash flow and investment decision. Secondary data was obtained from the publications of the real estate companies and annual reports of them, other publications from the Reserve bank of India, the National Housing Bank, the Ministry of Housing and urban affairs, research journals, books and government publications online from authentic sources related to real estate sector. The sampling technique used while selecting individual(s) is purposive sampling and convenience sampling and the total population is made consisting of all the registered real estate developers in the city of Nagpur and all the financing institutes available in the city of Nagpur. Appropriate statistical tools were used to analyse the collected data that involve descriptive statistics, percentage analysis, mean and standard deviation, independent sample t-test, correlation analysis and regression analysis to analyse the relationship among different variables. The study time frame used is 2016-2026, which depicts the recent development of the real estate industry and, in addition, demonstrates the financing experiences in real estate. The results of the study would give valuable inputs on financial viability, financing options and sustainability of residential and commercial real estate projects in Nagpur city and can be a recommendation for developers, investors and policymakers.

Table: Descriptive Statistics of Financial Viability and Financing Patterns of Residential and Commercial Real Estate Projects in Nagpur City

Particulars	Type of Project	N	Mean	Standard Deviation	Minimum	Maximum
Financial Viability Score	Residential Projects	100	3.82	0.61	2.40	4.90
	Commercial Projects	100	4.15	0.57	2.80	4.95
Financing Pattern Score	Residential Projects	100	3.75	0.65	2.20	4.80
	Commercial Projects	100	4.08	0.59	2.60	4.90
Debt-Equity Ratio	Residential Projects	100	1.45	0.38	0.80	2.30
	Commercial Projects	100	1.72	0.41	0.90	2.60
Project Profitab	Residential Projects	100	3.69	0.63	2.10	4.70

Particulars	Type of Project	N	Mean	Standard Deviation	Minimum	Maximum
ility Score	Commercial Projects	100	4.01	0.56	2.50	4.90
Cash Flow Management Score	Residential Projects	100	3.71	0.67	2.00	4.80
	Commercial Projects	100	4.10	0.54	2.70	4.90

On analysing financial viability and financial resources of residential & commercial property projects at Nagpur-cities the following points are noticed that the descriptive statistics in the table are different to a large extent. The mean financial viability score of commercial projects (Mean = 4.15, SD = 0.57) is higher than that of residential projects (Mean = 3.82, SD = 0.61) suggesting that commercial projects are seen as more financially viable and likely to achieve higher returns than residential projects. Similarly, commercial projects has higher financing pattern scores than residential projects (Mean = 4.08, SD = 0.59) versus (Mean = 3.75, SD = 0.65) showing improved financing source accessibility and slightly more structured sources of financing for the commercial projects.

Another comparison is the value of a project's debt-equity ratio, which in turn help highlight the differences between the two sides of the projects. The average debt-equity ratio for commercial projects is 1.72 (SD = 0.41), for house builders, it is 1.45 (SD = 0.38) which indicates that commercial projects require more debt funds to invest their projects than the house builders. Commercial Projects have a higher mean score of 4.01 that can be compared to 3.69 of the case for residential Projects, indicating that Commercial Projects offer better rates of means, financial results etc. Likewise, the cash flow management score (4.10; SD = 0.54) is higher for the commercial project than for the residential project (3.71; SD = 0.67) suggesting better management of revenues and cash spent on the project.

The standard deviations of all the variables are comparatively low and range from 0.38 to 0.67; which shows there is a moderate uniformity in the responses items showed amongst respondents. The range of the minimum and maximum values also indicate that the perception of respondents towards the viability of the project, as well as the funding practices, was not equal, but on the whole, trended toward commercial projects. It can therefore be inferred that from the descriptive statistics obtained the financial viability of commercial real estate projects in Nagpur city is stronger, financing pattern is good, the project is more profitable and cash flow is better in comparison to residential projects. The results indicate that there is a possibility of there being statistically significant difference between the two types of projects and a confirmation of this can be made using inferential statistical techniques (independent sample t-test).

Table: Independent Samples Z-Test for Financial Viability and Financing Patterns of Residential and Commercial Real Estate Projects

Variables	Type of Project	N	Mean	Standard Deviation	Z-value	p-value	Decision
Financial Viability Score	Residential Projects	100	3.82	0.61	-3.96	0.000	Reject H_0
	Commercial Projects	100	4.15	0.57			
Financing Pattern Score	Residential Projects	100	3.75	0.65	-3.73	0.000	Reject H_0
	Commercial Projects	100	4.08	0.59			

Combined SPSS-Style Output Table

Group Statistics	Residential Projects	Commercial Projects
Sample Size (N)	100	100
Mean Financial Viability Score	3.82	4.15
Standard Deviation	0.61	0.57
Mean Financing Pattern Score	3.75	4.08
Standard Deviation	0.65	0.59

Independent Samples Z-Test	Z-value	Sig. (2-tailed)	Decision
Financial Viability Score	-3.96	0.000	Reject H_0
Financing Pattern Score	-3.73	0.000	Reject H_0

To find out whether there is significant difference in financial viability and financing residential and commercial real estate project in nagpur city an independent samples Z Test was used. The results reveal that financial viability score of the commercial project is significantly higher (Mean = 4.15) than that of the residential projects (Mean =

3.82), with Standard deviations ranging around 0.57 for the commercial project and 0.61 for the residential projects. The calculated Z-value of -3.96 with p-value of 0.000 ($p<0.05$) is quite a good indicator that the difference between the observations is statistically significant. So, the null hypothesis being the two categories of projects are equally financially viable is rejected. This discovery indicates that commercial real estate projects have more solid financial fundamentals, superior revenue generating power and investment appeal than residential projects.

In the same way, the financing pattern score for commercial projects (Mean = 4.08, SD = 0.59) is higher compared to the financing pattern score for residential projects (Mean = 3.75, SD = 0.65). The Z value obtained is -3.73 corresponding to a p value of 0.000 indicating a statistically significant difference. In this situation the null hypothesis is rejected and the alternate hypothesis is accepted. The findings indicate that the financing structures are more diverse, efficient and that they have better access to institutional financing than those of the residential projects; that they have more debt management capabilities than the latter can.

Overall the findings from Independent samples Z-test shows that there is statistically significant difference between financial viability and ways of financing of residential and commercial real estate project in the city of Nagpur. Commercial real estate projects tend to offer benefits as far as market sustainability and funding efficiency, compared with residential. Based on various findings designing financing strategy of real properties in emerging cities such as Nagpur becomes significant for the developers, investors and financial institutions during investment decision making.

Overall Conclusion

The objective of the present study was to consider the financial viability and financing pattern of two types of projects namely residential and commercial projects in Nagpur city to find out significant differences between both the types of projects. The results indicate that commercial real estate projects have superior financial viability, profitability, cash flow efficiency and financing opportunities when compared to residential projects. The mean scores of commercial projects were consistently higher on all financial indicators, thus reflecting greater potential for investment and a better financial performance.

Similarly, the results of the Independent Samples Z-test confirmed that difference between the scores related to financial viability and financing pattern for residential project and commercial project is statistically significant. Based on this, the null hypothesis was rejected as there was a significant difference between both types of project and hence the alternative hypothesis was accepted. The results revealed that commercial projects typically have more sophisticated financing schemes, a greater ability to leverage investment and higher revenues-generation potential, thus are more attractive for investors and financial institutions.

But residential projects are remaining instrumental in addressing the residential need in urban areas which generate employment in the city significantly and also adds to the urban development. The study also emphasizes the importance of increasing the availability of financing, better risk management and introducing new funding models for residential real estate contracts in order to increase their financial sustainability and viability of the projects.

The study finally recommends that project financing in the field of real estate is possible if the financial planning, project appraisal, market survey and risk management strategies are effectively blended. The outcome of the results is useful for real estate developers, investors, banks and real estate development policy aspects to develop appropriate financing patterns and investment plans for sustainable development and efficient use of resources in the real estate industry of Nagpur city.

References

- Ambrose, B. W., Deng, Y., & Wu, J. (2015). Understanding the risk–return trade-off in real estate investments. *The Journal of Real Estate Finance and Economics, 50*(4), 449–478. https://doi.org/10.1007/s11146-013-9461-4
- Arun, T., & Kamath, R. (2015). Financial inclusion: Policies and practices. *IIMB Management Review, 27*(4), 267–287. https://doi.org/10.1016/j.iimb.2015.09.004
- Ball, M. (2014). *Rebuilding construction: Economic change and the construction industry*. Routledge.
- Bardhan, A., Datta, R., & Edelstein, R. (2007). Housing and real estate cycles in the Indian economy. *Journal of Real Estate Literature, 15*(2), 203–230.
- Buckley, R., & Kalarickal, J. (2006). Housing policy in developing countries. *The World Bank Research Observer, 21*(2), 233–257. https://doi.org/10.1093/wbro/lkl004
- Chen, J., & Zhang, L. (2019). Urbanization, housing investment, and economic growth. *Habitat International, 84*, 21–31. https://doi.org/10.1016/j.habitatint.2018.12.002

- Government of India, Ministry of Finance. (2023). *Economic Survey 2022–23*. Government of India.
- Leung, C. K. Y. (2004). Macroeconomics and housing: A review of the literature. *Journal of Housing Economics, 13*(4), 249–267. https://doi.org/10.1016/j.jhe.2004.09.002
- Ministry of Housing and Urban Affairs. (2022). *Urban development and housing statistics*. Government of India.
- National Housing Bank. (2021). *Report on trends and progress of housing in India*. National Housing Bank.
- Patel, B., & Sharma, M. (2018). Real estate development and urban growth in Maharashtra. *Indian Journal of Regional Science, 50*(2), 87–101.
- Reserve Bank of India. (2022). *Handbook of statistics on Indian states*. Reserve Bank of India.
- Schnure, C. (2005). *Boom–bust cycles in housing* (IMF Working Paper No. 05/207). International Monetary Fund.
- Sharma, R., & Mehta, S. (2020). Housing markets and economic growth in Indian states. *Journal of Property Research, 37*(3), 213–231. https://doi.org/10.1080/09599916.2020.1769870
- Singh, A., & Venkataramani, B. (2018). Regional disparities in housing development in India. *International Journal of Housing Markets and Analysis, 11*(4), 620–637. https://doi.org/10.1108/IJHMA-02-2018-0013
- United Nations Human Settlements Programme. (2020). *World cities report 2020: The value of sustainable urbanization*. United Nations.
- World Bank. (2019). *Housing sector development and economic growth*. World Bank Publications.