CHAPTER 133

Study on the Parameters Affecting Housing Redevelopment Feasibility

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ABSTRACT

The rapid urbanization of Pune has underscored the growing need for housing redevelopment, particularly in areas with aging structures, rising population density, and a lack of essential amenities. As the city continues to expand, optimizing land use and modernizing the housing stock has become a critical requirement. Recent changes in regulations and government policies have significantly facilitated the progress of housing redevelopment projects. Over the last decade, redevelopment has gained momentum and is now considered a prominent and emerging sector in residential development, driven by increased land value and escalating property prices. However, the redevelopment process is complex, involving intricate negotiations between various stakeholders, careful financial planning, legal compliance, and other essential elements. Understanding the redevelopment process and identifying the key drivers influencing it is essential. For a redevelopment project to succeed, it must be feasible, making it crucial to analyze the parameters of feasibility and emphasize their role in minimizing risks while maximizing opportunities. This research leverages field observations and literature reviews to offer practical insights into the technical and financial aspects of the redevelopment process. The primary objective of this study is to examine an area undergoing redevelopment and analyse the factors that contribute to its feasibility.

Keywords: Redevelopment process; Residential market; Feasibility.

1.0 Introduction

1.1 Research problem

Rising housing demand in Pune's central zones—Sadashiv Peth, Kothrud, Shivaji Nagar, and Model Colony—has fuelled residential redevelopment. However, project feasibility remains uncertain due to technical, financial, and regulatory challenges. Developers face cost hikes, delays, and ROI risks, while residents worry about affordability and displacement. This study evaluates feasibility and constraints to redevelopment. It also proposes a decision matrix to guide developers toward optimized project outcomes.

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1.2 Aim and objectives

AIM: The project aims to study and analyse various technical and financial parameters influencing the feasibility of housing redevelopment projects.

1.3 Objectives:

- To understand redevelopment as an emerging business category by comparing and analysing synonyms such as revitalization, regeneration, and reconstruction.
- To study and understand the process of redevelopment and the technical and financial parameters associated with it
- Develop a structured decision matrix to help stakeholders evaluate the feasibility of the redevelopment project based on technical, financial, and regulatory aspects.

1.4 Scope and Limitations

Scope: This study analyses both developer-led and client-led redevelopment projects using a mix of qualitative and quantitative data from case studies, interviews, and secondary sources. It covers technical, financial, and regulatory aspects of feasibility while incorporating perspectives from developers, residents, and authorities. A structured decision matrix is developed to aid stakeholders in evaluating project feasibility.

Limitations: The study's findings are specific to Pune's urban context and may not be universally applicable. Changing market conditions and evolving policies could affect the long-term relevance of the decision matrix. Additionally, the research is limited by data availability and does not deeply explore social or environmental impact assessments.

2.0 Literature Review

Recent studies highlight how policy frameworks like UDCPR and dc rules facilitate vertical urban growth by increasing fsi and easing height restrictions. pune's 12-meter road rule supports optimized land use, encouraging self-redevelopment and affordable housing (Govt. of Maharashtra, 2021; Urunkar, 2025; Punekar News, 2022). Feasibility studies are vital, covering technical, financial, and legal parameters like fsi, tdr, cost, and compliance. tools like npv, irr, and bcr assess financial viability and support negotiation (Easton Associates, 2025; Airrises, 2024; Sable *et al.*, 2020; Maske & Gaikwad, 2021). Redevelopment enhances property value and demand by improving infrastructure. however, cost overruns and project delays remain challenges. bim is used to reduce these risks (Ki & Jayantha, 2010; Claassens *et al.*, 2019; Bader, 2011). key challenges include funding delays, legal issues, and displacement. transparent communication and credible developers reduce these risks (Vanvari & Mhaske, 2018; Ashar & Gohil; Pore & Wadalkar, 2017). Self-redevelopment case studies in Mumbai show better control, faster timelines, and higher satisfaction, driven by FSI incentives and state aid (IJSEDR, 2022; sample co-op society, 2015; Rishabh co-op, n.d.).

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3.0 Research Methodology

This study uses a mixed-methods approach combining qualitative and quantitative analysis. It includes descriptive, comparative, and case study methods to evaluate redevelopment trends and project feasibility. Model Colony, Pune, is selected for its active redevelopment and TOD influence, focusing on 12 out of 20 identified projects within 3 km of Shivaji Nagar Metro Station.

Data collection:

- Primary: Site visits, surveys, stakeholder interviews.
- Secondary: ULCR-2034, MahaRERA, developer data, online portals, prior research.

Evaluation Parameters:

- Technical: Road width, plot size, height, FSI, built-up area.
- Financial: NPV, IRR, sale prices, revenue, cost recovery.

Scoring & Weighting: A Weighted Scoring Model (WSM) scores each parameter (1–10), grouped under technical and financial themes with assigned weightages based on relevance. Feasibility Score = ∑ (Parameter Score × Weight). Higher scores imply higher feasibility.

Table 1: Example of Feasibility Score Matrix for Technical & Financial Parameters

Theme	Parameter	Assigned weight (%)	Parameter score (scale 1-10)
Technical Parameter-Location & Accessibility (20%)	Location	8	9
	Accessibility	6	10
	Road Width	6	8
Financial Parameter (15%)	NPV	10	9
	Profitability Index	5	8

4.0 Analysis and Ranking

Projects are ranked as Best, Moderate, or Least Feasible. Comparative analysis verifies results against market trends. Sensitivity analysis tests the impact of changing parameter weights, while scenario testing evaluates performance in varied market conditions.

5.0 Data Collection

5.1 Redevelopment as an emerging market in pune

Pune's property market is undergoing major redevelopment due to land scarcity and aging buildings. Key areas like Sadashiv Peth, Shivajinagar, and Kothrud drive this trend, supported by policies and housing demand. Developers gain from FSI incentives, low land costs, and high central returns. Government support, faster approvals, and guaranteed buyers' lower risks. Homeowners get safer, modern homes with better infrastructure and no added cost, though only 6 of 15 top developers focus on redevelopment. (See Figure 1)

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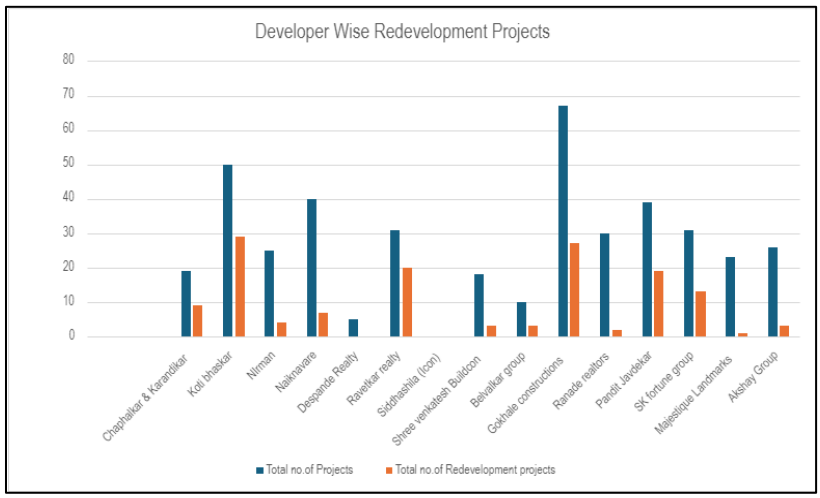
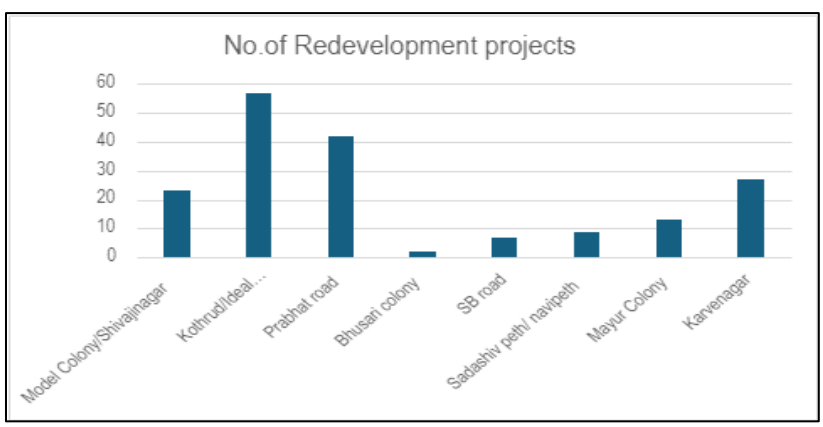
Figure 1: Developer Wise Redevelopment Projects



Central Pune areas like Kothrud, Prabhat Road, and Model Colony are undergoing major redevelopment due to their dense midrise settlements, many over 50 years old. These locations have high historical value, strong demand, robust infrastructure, and prime connectivity. Kothrud leads in redevelopment, followed by Prabhat Road and Model Colony, as developers aim to revamp these sought-after neighbourhoods. (See Figure 2)

Figure 2: Redevelopment Projects in Core Areas of Pune



5.2 Market review of model colony

Model Colony, near Shivaji Nagar and F.C. Road, is a prime Pune locality seeing rapid development due to strong infrastructure, job growth, and property demand. Despite old mid-rise buildings and underused FSI, it remains one of Pune's greenest and most desirable areas.

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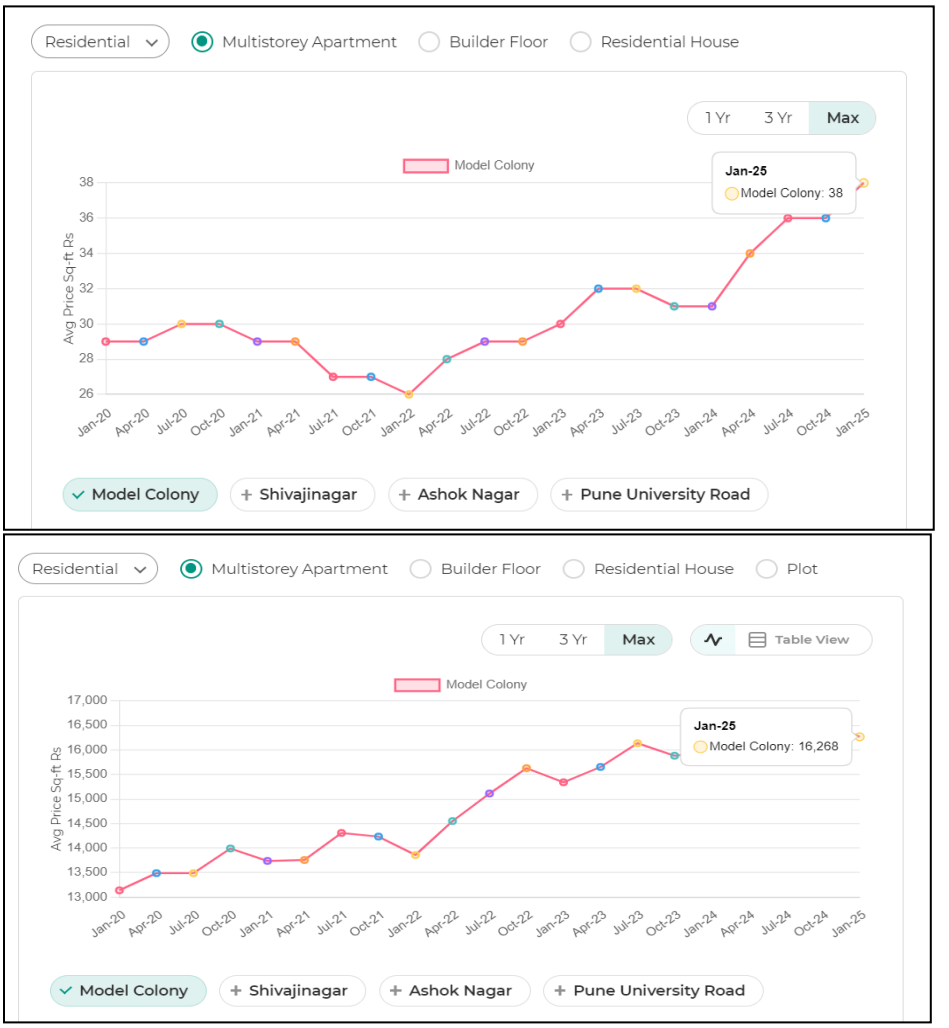
Property prices rose 17% since April 2022, averaging ₹16,268/sq. ft., with rates between ₹13,300–₹19,800. Rentals also jumped 46%, from ₹26 to ₹38/sq. ft., making it attractive for both residents and investors. (See Figure 3)

Figure 3: Sale Price & Rental Value Trends in Model Colony



Source: 1-Magicbricks Realty Services Limited, n.d.-b

5.3 Identification of sample size and gathering data based on redevelopment projects

Following below is the list of redevelopers, and their projects identified in Model colony, Pune. This comprehensive list of projects is used as sample size for further research.

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From the following list first 12 projects are taken as sample size. The sample size is a mix of projects which are either newly launched, under construction or completed. (See Table 2)

Table 2: List of Redevelopment Projects

Sr. No	Project name	Sr. No	Project name
1	Dinmanee	11	Garud House
2	Prakash	12	Tej-Ameet
3	Arati	13	Swojas Adwait
4	Shubhamkaroti	14	Shivatman
5	Ashokban	15	Nirman Shreyas
5	Siddhashila Madhusagar	16	Nirman Vishnubaug
6	Sheetalkunj	17	Amrutkunj
8	Pleasant apartment	18	Jeevan Pradeep
9	Nandvihar	19	Dharmesh
10	Kusum CHS	20	Madhvachhaya

5.4 Identification of technical & financial parameters

Successful housing redevelopment hinges on comprehensive technical and financial evaluation to ensure long-term viability. Key technical factors include location, road width, plot size, and FSI utilization, while unit types and amenities affect usability and market appeal. Financial tools like NPV, BCR, and PI are used to gauge profitability. In this study, 20 redevelopment projects are analysed using parameters from literature, with accessibility assessed by proximity to Shivaji Nagar metro and University Road. Key data—such as side margins, parking, height, FSI use, and carpet area—are sourced from approval drawings to support informed and sustainable decision-making. (Refer Sheet- Identification of Feasibility Parameters and Technical Data Collection, Financial Data Collection https://docs.google.com /spreadsheets/d/1mqLbq_VfWEzrnx3e0H7bY04SZHCMXkg/edit?usp=sharing&ouid=101527505924198501463&rtpof=true&sd=true)

6.0 Data Analysis

This section presents the analysis of 12 redevelopment projects, studied under various technical and financial parameters. Each project is analysed and judged based on feasibility score.
TOTAL FEASIBILITY SCORE= ∑ (FEASIBILITY SCORE * WEIGHTAGE)

6.1 Technical feasibility

Redevelopment schemes are scored on 17 technical parameters under three themes, using a 10-point scale. In Model Colony, the system analyses site potential, design efficiency,

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and market impact. Key factors like FSI, carpet area, and unit layout drive feasibility. Market trends, policy, and construction stages shape viability. A weighted model—technical (45%), market (35%), location (20%)—ensures balanced, industry-aligned evaluation.

Refer Sheet Scoring Matrix and Weightage https://docs.google.com/spreadsheets/d/1mqLbq_VfWEzrnx3e0H7bY04SZHCMXkg/edit?usp=sharing&ouid=101527505924198501463&rtpof=true&sd=true) Each parameter is scored out of 10 based on relevance, then multiplied by its assigned weight. The total weighted score ranks the projects, identifying the most technically feasible one. This helps in objective project evaluation..(Refer Sheet- Technical Data Collection, https://docs.google.com/spreadsheets/d/1mqLbq_VfWEzrnx3e0H7bY04SZHCMXkg/edit?usp=sharing&ouid=101527505924198501463&rtpof=true&sd=true)

According to the feasibility scores derived, the projects are categorized since highly feasible, moderate feasible and least feasible. (Refer Table 3 and Sheet Technical Feasibility Scoring, https://docs.google.com/spreadsheets/d/1mqLbq_VfWEzrnx3e0H7bY04SZHCMXkg/edit?usp=sharing&ouid=101527505924198501463&rtpof=true&sd=true)

Technical feasibility score matrix: Redevelopment project viability is grouped into three levels based on technical, structural, and market performance. Highly feasible projects (Rank 1–4) feature optimal FSI (0.54–0.60), efficient design, and high demand, ensuring quick, cost-effective completion. Moderately feasible ones (Rank 5–7) have average FSI (0.48–0.54), decent demand, but slower timelines and possible regulatory delays. Least feasible projects (Rank 8–11) struggle with low FSI (0.18–0.36), limited plots, weak demand, and moderate zoning compliance (0.42–0.63). These challenges reduce their investment appeal. (Refer Sheet- Tech & Fin Scoring *https://docs.google.com/spreadsheets/d/1mqLbq_V-fWEzrnx3e0H7bY04SZHCMXkg/edit?gid=426802062#gid=426802062*)

6.2 Financial feasbility

Projects are financially assessed using six parameters, each scored out of 10 and weighted by significance. Construction cost and revenue have the highest weight (22% each) for their direct link to profitability. Sales price is next at 18%, followed by NPV (14%) for long-term value, Profitability Index (13%) for capital efficiency, and BCR (11%) as a relative metric. This approach ensures a practical, efficiency-focused evaluation of economic feasibility. (Refer Sheet- Scoring Matrix Financial Parameters, Weightage Allocation, https://docs.google.com/spreadsheets/d/1mqLbq_VfWEzrnx3e0H7bY04SZHCMXkg/edit?usp=sharing&ouid=101527505924198501463&rtpof=true&sd=true)

6.3 Final feasibility score matrix

Feasibility rankings highlight cost recovery and revenue as key profitability drivers. Low-cost, high-sale projects show better NPV and viability; even high-cost ones like Pleasant Apartments perform due to demand. BCR is critical in rehab-heavy projects (e.g., Nandvihar, Siddhashila). Poor FSI use and sales weaken projects like Dinmanee. NPV, BCR >1, and PI >0

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confirm feasibility, seen in Nandvihar, Ashokban, and Pleasant Apartments. (Refer Sheet- Financial Feasibility Scoring, Weightage Allocation for financial feasibility https://docs.google.com/spreadsheets/d/1mqLbq_VfWEzrnx3e0H7bY04SZHCMXkg/edit?usp=sharing&ouid=101527505924198501463&rtpof=true&sd=true)

Projects ranked 1–4 (Nandvihar, Pleasant Apartment, Ashokban, Siddhashila Madhusagar) score high across all six financial criteria, making them the most financially feasible. Projects ranked 5–8 show moderate feasibility, with revenue, BCR, and PI scores between 5–7, indicating they are competitive but not top-performing. Projects ranked 9–12 have lower overall scores, with NPV, BCR, PI, and sale prices ranging from 1–4, highlighting weak financial viability. High construction costs and low revenue lead to negative NPV, making these the least feasible investments. (Refer Sheet- Tech & Fin Scoring *https://docs.google.com/spreadsheets/d/1mqLbq_V-fWEzrnx3e0H7bY04SZHCMXkg/edit?gid=426802062#gid=426802062*)

7.0 Conclusion

The viability of housing redevelopment depends on a balanced integration of technical and financial factors. projects with optimal FSI use, strong sale prices, and regulatory compliance are most sustainable and low risk. some technically sound projects may still face viability issues due to low prices and high costs, needing cost-cutting to remain feasible. Conversely, financially strong projects with technical limitations like zoning or infrastructure issues may face execution risks. key technical elements include fsi use, design, zoning adherence, accessibility, and infrastructure. Financial success hinges on a good cost-to-income ratio, positive NPV, and BCR. A holistic, balanced approach ensures redevelopment success.

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