

Risk Assessment and Management for Real Estate Enterprise Startup

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Abstract - *In this paper, we studied that Real estate industry is crumble, very sensitive to economic cycles & political Environment. It has a significantly high rate of business failure. More than 50% of all real estate business have failed with in last five years as risk associated with their startup are not being considered. Business failure is an extremely disruptive force especially in case of construction industry. Real estate industry is having project which are very intricate in nature, where uncertainties & risk rise from different sources. In construction project risk management have focused on the project level rather than the enterprise level. The objective of this study was to identify and assess the risk associated with the residential real estate business startup.*

Key Words: Real Estate, Risk Management, Risk Assessment, Residential Real Estate, Risk management model

1.INTRODUCTION

Real estate industry contributes to in economic growth of a nation. It is occupying an essential place in nations development plan. India have a vast work force of nearly 0.035 billion in real estate sector. Real estate market size is worth about INR 6, 70, 778 crores. Agricultural sector plays a vital role in GDP but real estate sector plays a second largest contributor in GDP. Real estate industry is likely to create additional employment of 0.0047 billion. According to with total number of persons employed in the real estate sector reaching 0.083 billion persons by 2022.

Real estate industry is patchy, very responsive to the economic cycles and political environment. Then, it has a significantly extreme rate of business Failure. Business failures, collapse, bank solvency, loan is common term in real estate industry due to many risks occurs in this sector. All over the world, the ease of entry gives a rise large number construction company

completing in the market, exposing many of them business failures.

Every business startup involves some degree of risk for entire business or organization. It is impossible to avoid all types of risk which may affect of an organization. So proper planning and proper management can help the business grow up and reduces the risk to an enterprise. Risk assessment and management is very important for real estate industry to be successful. There is different method for assessing and managing of risk. When the risk identification of negative events occurs, their likelihood and impact of such events and also focuses on reducing the probability that negative events that these negative events will occur. Then when increasing the probability that positive outcome will be realized.

It is important that for any types of business to become a successful. According to, in India and out of country more than 50% of all real estate business failed within the last five years due to risk associated with their startup are being not considered. When the business failure is a very disruptive force especially in construction industry. It is due to unfamiliar characteristics of natures, high ambiguity, low access barrier that increase the rate of failure. When you start up your business, it is necessary to have proper planning and management that suit the industry best. A proper business plan should include a brief discussion of risk associate with their business. It will be impractical to identify all possible all types of risk in a business plan. Then it should be considered a highly critical risk associated with business and how management will mitigate their potential impact on business. Risk assessment process if done since the inception, forms the foundation for an efficient enterprise risk management program. The importance of risk assessment has not been realized to a great extent before starting up the business.

1.1 Objective

1. To identify and assess the risks associated with the housing business and propose risk mitigation measures for the same.
2. To formulate an enterprise risk management model for the business.

1.2 Scope

1. Scope of study is restricted to housing business for Ahmedabad city, Gujarat, India only

2. LITERATURE REVIEW

2.1 Risk Management and Real Estate

Industry

Real estate industry is fragmented, very sensitive to the economic cycles and political environment, and has a significantly high rate of business failure. There is various decision-making model which helps decision maker to identify the various risks and project the potential results but none of them can solely and perfectly do so. Similarly, every business startup involves some degree of risk and it is impossible to avoid all risk when starting a business, careful planning can help get businesses up and running with a minimal amount of risk. Risk management not only prevents organizations from entering a dangerous and uncertain territory, which could lead to a catastrophic failure, but also ensure the development and growth of the business. The depth and clarity with which a risk is defined is critical for risk management. The process of assessing and managing these risks involves identification of negative events, their likelihood & potential impact of such events and also focuses on reducing the likelihood that these negative events will occur and increasing the likelihood that positive outcomes will be realized.

2.2 Enterprise Risk Management

ERM is a process, affected by an entity's board of directors, management, and other personnel, applied in a strategy setting and across the enterprise. It is designed to identify potential events that may affect the entity, to manage risk within its risk appetite, and to provide reasonable assurance regarding the achievement of entity objectives (Committee of

Sponsoring Organizations of the Tread way Commission). Academics and industry commentators argue that ERM benefits firms by decreasing earnings and stock price volatility, reducing external capital costs, increasing capital efficiency, and creating synergies between different risk management activities. In simple terms, ERM is said to promote increased risk awareness that facilitates better operational and strategic decision making.

2.3 Risk Category and Risk Identified

The identification of events that could go wrong results in losses or not achieving the organization's goals. This process depends on the experiences and imagination of the participants in the risk identification process.

| RISK CATEGORY | RISK DESCRIPTION |
|--|---|
| Strategic Risk | Competition risk |
| | Corporate Governance risk |
| | Reputational Risk |
| | Innovation risk |
| | Partnership risk |
| | Property Management |
| | Risk of uncertainty regarding information for decision making |
| | Information Technology Risk |
| | Records management Risk |
| | Demand Risk |
| | Supply Risk |
| | Communication risk |
| Technical Capabilities of Stakeholders | |
| Financial Risk | Availability of funds |
| | Capital budgeting risk |
| | Capital structure Risk |
| | Interest rate risk |
| | Inflation risk |
| | Valuation Risk |
| | Supplier Credit Period |
| Human resource management risk | Availability of manpower for administration |

| | |
|---|---|
| | Retaining the employees |
| | Dedication of employees |
| | Performance risk |
| Market risk | Spatial Market Risk |
| | Capital Market Risk |
| Operational Risk | Availability of labour, materials, machinery. |
| | Technological Risk |
| | Design Risk |
| | Timely completion risk |
| | Production Risk |
| | Hazard Risk |
| | Functional Obsolescence |
| Political Risk | Exit Risk |
| | Contractual Risk |
| | Legislation Compliance |
| | Building Code Changes |
| | Changes in Zoning code/designations |
| | Environmental Regulations |
| | Tax code revisions |
| | Accounting Changes |
| Entering an Unregulated Business Sector | |
| Marketing risk | Pricing Risk |
| | Process Risk |
| | Product Risk |
| | Distribution Risk |
| | Efficiency Risk |
| | Product Differentiation Risk |
| | Aggressive Pricing by Exiting Players to Kill Startup |

Table 1 Risk Categories and Risk

3. DATA COLLECTION

3.1 INTRODUCTION

The primary objective of this study was to identify and assess the various risks associated with the housing business in Ahmedabad city. This questionnaire survey was done based on the risk identified through literature review. After identifying the various risks, two suitable Likert scale was decided to give a score to the likelihood of occurrence and impact of each risk of housing business. Data collected was analyzed through the

expected monetary value method to prioritize the risk and relative ranking was concluded.

3.2 METHODOLOGY

The primary purpose of data collection is to focus on the risk and to conclude the relative ranking. For this purpose, a questionnaire survey was carried out to collect the data. Questionnaire consists of 7 different risk categories and 49 types of risk associated with the housing business. Data collection, rating about the likelihood of occurrence and impact of each risk was collected. To rate the likelihood of occurrence and impact of each risk two types of Likert scale was selected. Two different rating scales are shown below:

| LIKELIHOOD OF OCCURRENCE | |
|--------------------------|---|
| Very Low | 1 |
| Low | 2 |
| Moderate | 3 |
| High | 4 |
| Very High | 5 |

Table 2 scale of likelihood of occurrence

| IMPACT | |
|-----------------------|---|
| Not Significant | 1 |
| Fairly Significant | 2 |
| Significant | 3 |
| Very Significant | 4 |
| Extremely Significant | 5 |

Table 3 scale of Impact

- Once the questionnaire was developed, Pilot study has been carried out to validate the questionnaire.
- Based on the validated questionnaire, survey was carried out to collect the data.
- Based on 95% confidence level, 10% confidence interval and population size 130, Sample size of 50 respondents were selected.

4. DATA ANALYSIS

4.1 RELIABILITY TEST

Reliability is defined as the consistency of results from a test. The method is a split-half reliability method. Then after calculation is $R_{sb} = 1 > 0.91$, hence it has good reliability.

4.2 EXPECTED MONETARY VALUE METHOD

The data collected was assessed through expected monetary value method to quantitatively prioritize a risk. Expected monetary value method is used to prioritize the risks with the highest probability of occurrence or the risks with the greatest monetary impact. During data collection, Likelihood of occurrence and Impact for each factor was rated in the scale of 1 (Very Low) to 5 (Very High) and 1 (Not Significant) to 5 (Extremely Significant) respectively.

| Risk category | Risk description | Emv likelihood | Emv impact | Severity | Rank | Significance level |
|--------------------------------|-------------------------|----------------|------------|----------|------|--------------------|
| Strategic risk | Competition risk | 3.408 | 3.449 | 11.75 | 1 | Very high |
| | Demand risk | 3.347 | 3.327 | 11.14 | 2 | Very high |
| Financial risk | Interest rate risk | 3.286 | 3.408 | 11.2 | 1 | Very high |
| | Availability of funds | 3.224 | 3.347 | 10.79 | 2 | Very high |
| Human resource management risk | Performance risk | 3 | 3 | 9 | 1 | Very high |
| | Dedication of employees | 2.959 | 2.939 | 8.7 | 2 | Very high |
| Market risk | Capital market risk | 3.286 | 3.122 | 10.26 | 1 | Very high |
| | Spatial market risk | 2.857 | 3.02 | 8.63 | 2 | Very high |
| Operational risk | Timely completion risk | 3.102 | 3.265 | 10.13 | 1 | Very high |

| | | | | | | |
|----------------|---|-------|-------|-------|---|-----------|
| | Availability of labour, materials, machinery. | 3 | 3.122 | 9.37 | 2 | Very high |
| Political risk | Entering an unregulated business sector | 2.98 | 3.163 | 9.43 | 1 | Very high |
| | Accounting changes | 2.673 | 3.041 | 8.13 | 2 | Very high |
| Marketing risk | Aggressive pricing by exiting players to kill startup | 3.388 | 3.388 | 11.48 | 1 | Very high |
| | Pricing risk | 3.224 | 3.286 | 10.59 | 2 | Very high |

Table 4 result of data analysis

4.3 MONTE CARLO SIMULATION METHOD

From the ranking provided, most severe risks in each category was selected to identify the contingency that should be included so that the budget level will be achieved with a certain degree of confidence. For that expert survey of 5 experts was carried out. In expert survey, Data regarding the base cost associated with the most severe risk that company should have kept as a risk cost in total project cost as well as the data regarding the minimum value and maximum value for most severe risk was collected. Assumed probable cost of the project is 100 crore and based on this assumption the above data was collected

4.4 OUTPUT OF MONTE CARLO SIMULATION

The output of monte Carlo simulation shows that when simulation is done 95% of confidence, total risk cost changes shown below:

- Total Risk cost of 100 Crore Project 1130
- Total Risk Cost at 99% Confidence 1472.05 lacs

- Total Risk Cost at 95% Confidence 1400.39 lacs
- Total Risk Cost at 90% Confidence 1350.01 lacs
- Contingency @ 95% Confidence 270.39 lacs
- % Contingency 23.92%

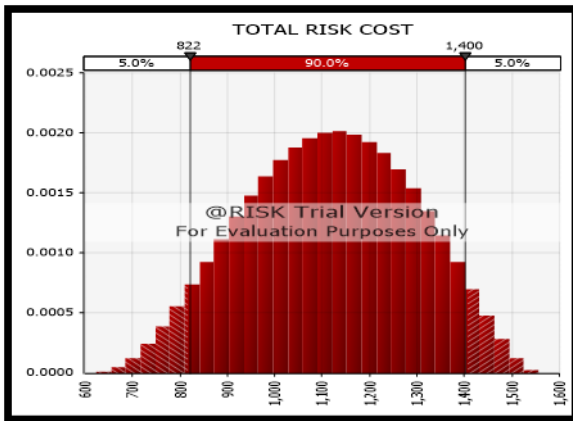


Fig 1 Total Risk Cost graph

4.5 ENTERPRISE RISK MANAGEMENT MODEL

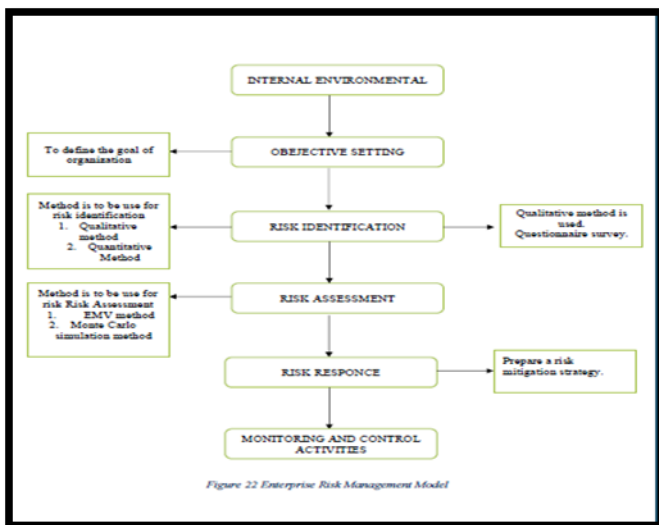


Fig 2 Model for risk management

5. CONCLUSION

- The Major risk category that any organization residential real estate must consider during their conceptualization stage are given in table 1: Risk category and risk Factor.
- The result of EMV of Likelihood of Occurrence & impact, Risk Severity of each risk was calculated. From the risk severity and risk assessment matrix

most sever risk in each category was found show in table 4: Ranking and Significance Level in data analysis.

- From the expert survey it was found that in a residential project of 100 crore, approx. 11.30 % of cost is kept for total risk assessment and management for the most severe risks.
- From the data analysis it was found that at 95 % confidence cost for risk assessment and management may rise up to 14 % and at 99 % confidence it may rise up to 14.72 %. Monte Carlo simulation model for each risk was produced which shows the contingency required for each risk. Simulation result are shown in “Fig no 1.: simulation result graph of Total risk cost”.
- Then, the 95 % confidence total Risk Cost it may rise up to 14 % and contingency of total risk cost is 23.92%. Then total risk assessment and management for the most severe risk is considered for when start up real estate business.
- Form this data analysis, it was found that 95 % confidence the total Risk Cost associated with business, it may rise up to 14 %. So, when you start up a business, it should be necessary to consider that risk associated with a business. So, it may be helpful for grow up a business.

5.1 FUTURE SCOPE

This research mainly focuses on the housing business in real estate sector of Ahmedabad city. Further research can be carried out in other aspects of real estate sector viz. Commercial, Institutional, Industrial. Also, research can be carried out to assess and manage the risks so as to sustain in the market after the completion of conceptualization stage.

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