

Evaluation and Assessment of Social Cost-Benefit Analysis of the Real Estate Sector in Pune by Quantitative Analysis

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Abstract: A Social cost benefit analysis, also known as economic analysis, is a decision-making strategy which helps in assessing the impact of investment business projects on the society as a complete. Pune, known as the Oxford of the East and considered a pensioner's paradise is rapidly transforming to a bustling economic center of India. Pune is the ninth-most populous city in India and the second largest in the state of Maharashtra after the state capital city of Mumbai. It is also the 101st largest city in the world, by population and is considered one of the fastest growing cities in the Asia-Pacific region. Pune aspires to create a model neighborhood of livability and sustainability matching global standards in the selected local area by fully deploying all smart city features in a "future ready" manner. Future ready is critical because as the area develops, it will undergo a 4x population growth by 2030 (from 40,000 to 160,000). This will further impact the current scenario of real estate and the local Purities too. As a result of all this, retail companies and shops are finding it a potential market for high end lifestyle products resulting into better and quality shopping complexes. But on the other hand, the local shop owners and vegetable - grocery sellers and other such small enterprise holders have suffered a major loss. The impact of social cost-benefit analysis can be positive or negative. The positive impact is called as a social benefit and the negative impact is termed as a social cost. SCBA is different from CBA in the sense that it has an extensive view because it tries to study the social values of the entire society rather than taking into account the profitability of individuals who are a section of the society. Hence, this study is undertaken to evaluate the impact of this growing real estate business on the social - cost aspects of the society.

The aim of this study will be achieved through quantitative analysis by performing survey and conducting interviews with the small scale enterprise holders, the real estate business professionals and the staff at construction sites. The questionnaire will be analyzed with Relative importance index method. The results of this survey will be presented through a SWOT framework and recommendations will be made to overcome the negative impacts obtained from the findings.

Keywords: Cost-Benefit Analysis, Real Estate sector, Economic benefits, Social Benefits.

I. INTRODUCTION

The Construction industry has a great influence on the economy of all countries. It is one of the parts that provide vital factors for the development of any economy. According to World Bank, the share of construction industry in developing countries is approximately between 6-9% of the Gross Domestic Product (GDP). (Unit, South Asia Sustainable Development, 2007) The construction industry is an important part of the economy and has a considerable impact on the efficiency and output of other industries. It is not possible having extensive investment in manufacturing, agriculture, or service sectors without construction of infrastructure facilities in place.

Residential projects make up 85% of the Indian real estate market. Between 2015 and 2020, we expect demand to grow from approximately 880 million square feet to 1.35 billion square feet. While we also expect demand for hospitality, retail and commercial real estate to increase, residential real estate will continue to represent the bulk of the demand. The Reasons for high demand for residential real estate in Pune, include a continuing urbanization trend and reduced household sizes due to the rise of nuclear families

A. Relative Important Index and Mean Score

Method Calculate Mean Score and the Relative Importance Index (RII)

Evaluate the mean score and relative importance of the identified factors by collecting the group perspectives of three Phase, viz. clients, contractors, nashik .Second, the opinions of the were sought to quantify "qualitative" variables. These were recorded, using a scale of 1 to 5, where 1 is the lowest perceived factor, and 5 is the highest perceived factor.

- Strongly agree S.=5
- Agree A.=4
- Undecided UD.=3
- Disagree DA. =2
- Strongly Disagree SD.=1

Based upon the data from the PIPs, the rankings of factors were generated by evaluating their relative importance across each group of respond.

Evaluating Factors Using the Mean Score and the Relative Importance Index

The MS for each factor is computed by the following formula

$$\frac{\sum F \times S}{N}$$

Where *S*=score given to each factor by the respondents, ranging from 1 to 5 where “1” is “Strongly Disagree” and “5” is “Strongly agree;” *F*=frequency of responses to each rating 1to5 for each factor; and *N* is total number of client respondents for that factor. In addition to the MS, the five-point scale was transformed to Relative importance indices RII using the relative index ranking technique to determine the rankings of the factors and verify the evaluation by the MS. The RII were calculated using the following formula:

1). Introduction.

Questionnaire Purpose

The questionnaire was prepared to analyze the level of CBA implementation in medium scale residential projects. A list of suppliers, contractors, client and consultants was searched from the internet. The persons were contacted through email, phone and mobile. The questions from the questionnaire were asked face to face and relevant questions were studied.

Medium scale residential projects industry is flooded with number of project organizations playing a smaller to bigger role in mega project completion. For the sake of convenience, we divided these players from the point of view of their role in the supply chain. From this point we divided them into:

- Subcontractor
- Main Contractor
- Client
- Consultant
- Equipment or Material Supplier

Questionnaire was prepared considering their role in the project supply chain, and attempt was made to address the issues related to each of the value chain partner. The questionnaire was sent to more than 25 different organizations in the medium scale residential projects and four responses were received from them. The companies those selected were combination of client, contractor, consultant, equipment and material supplier and subcontractor. The persons those were contacted were from lower management level to higher management level in the organizations.

$$RII = \frac{\text{Total point score}}{5}$$

Criteria	Ranking
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

Questionnaire Interview Sample

Interview Purpose:

For dissertation work selected “Construction approach of supply chain management in medium scale residential projects” topic for the successful completion of dissertation work. I need to conduct interview of different leading company contractors, sub-contractors, clients, and consultant. To find the factors this effects on supply chain management. For this reason I have prepared a

questionnaire so, please allow me to conduct interview of your company. The questionnaire based on rating system. This information will be strictly use for academic purpose only.

1) **Satisfaction Level of your Business is much satisfied due to this criteria?**

Response	1	2	3	4	5	RII
Financial Condition	0	4	3	4	8	0.73
Government Services	1	5	4	8	1	0.60
Fulfillment of Objectives	0	0	5	9	5	0.76
Means of Marketing/Advertising	0	1	6	7	5	0.73
Entrepreneurial Problems	1	4	5	8	8	0.71
Provided Space	0	1	6	9	3	0.71

This question was asked to know the preferred choice of criteria that affects on business level for a project. We wanted to know that whether the client/contractor likes to go for known Financial Condition, Government Services, Fulfillment of Objectives, Means of Marketing/Advertising, Entrepreneurial Problems, and Provided Space.

The RII of all the options shows that the **Fulfillment of Objectives** criteria that affects on business level for a project.

2) **How you rate the overall success of your Business on following Rating?**

Response	1	2	3	4	5	RII
Extremely Unsuccessful	3	4	3	1	8	0.64
Unsuccessful	3	5	4	6	1	0.54
Moderately Unsuccessful	2	2	5	5	5	0.66
Neither Successful or Unsuccessful	2	3	6	3	5	0.63
Moderately Successful	5	4	4	3	2	0.78
Successful	2	3	6	5	3	0.61
Extremely Successful	3	2	2	5	6	0.60

This question was asked to know the overall success of your Business on given Rating. We wanted to know that whether the client/contractor likes to go for given criteria's.

The RII of all the options shows that the business is **Moderately Successful**.

3) **Please indicate to what extent following factors affect the growth of Real estate sector in Pune (Human Resources)**

Response	1	2	3	4	5	RII
Lack of experience	1	5	2	6	5	0.69
Confusion	1	3	5	7	3	0.68
Misunderstanding among laborers	3	2	5	5	4	0.62
Lack of competition between the Laborers	0	2	6	6	5	0.75
Age.	1	2	7	5	3	0.68
Personal problems.	2	1	6	7	3	0.68
No training	2	2	6	4	5	0.68
Lack of Education	2	2	7	5	3	0.75

This question was asked to know the extent following factors affect the growth of Real estate sector. We wanted to know that whether the client/contractor likes to go for given criteria's.

The RII of all the options shows that the factors affect the growth of Real estate sector are **Laborers & Lack of Education**

4) Please indicate to what extent following factors affect the growth of Real estate sector in Pune (**External**)

Response	1	2	3	4	5	RII
Implementation of government laws.	2	3	4	7	3	0.66
Rework	2	3	6	3	5	0.66
Supervision delays	2	2	7	5	2	0.63
Inspection delays from The authorities.	2	2	6	6	3	0.83
Variations in the drawings.	2	4	2	5	5	0.76
Complex designs in the provided	2	3	6	5	3	0.83
Incomplete drawings	2	2	5	6	4	0.76
Payment delays	1	3	7	5	3	0.72
Training sessions.	3	2	6	5	3	0.69
Design Changes.	3	5	2	4	5	0.71

what extent following of Real estate sector in

This question was asked to know the extent following factors affect the growth of Real estate sector. We wanted to know that whether the client/contractor likes to go for given criteria's.

The RII of all the options shows that the factors affect the growth of Real estate sector are **Complex designs in the provided & Complex designs in the provided.**

5) Please indicate to what extent following factors affect the growth of Real estate sector in Pune (**Communication**)

Response	1	2	3	4	5	RII
Insufficient means of communication.	1	3	4	7	4	0.71
Remote site places.	2	1	6	5	5	0.71
Disputes with owner.	1	1	5	10	2	0.72
Disputes with designer.	3	3	7	4	2	0.85
Misunderstanding between the owners, the contractor.	1	4	2	6	5	0.81

This question was asked to know the extent following factors affect the growth of Real estate sector. We wanted to know that whether the client/contractor likes to go for given criteria's.

The RII of all the options shows that the factors affect the growth of Real estate sector are **Disputes with designer.**

6) Please indicate to what extent following factors affect the growth of Real estate sector in Pune (**Resources**)

Response	1	2	3	4	5	RII
Lack of required construction materials.	3	3	4	6	3	0.63
Increase in the price of materials.	3	2	6	3	5	0.65
Lack of required tools and/or equipment's.	2	3	7	4	2	0.61
Poor site conditions	2	3	6	5	3	0.82
Differing site conditions from the plan	3	4	2	4	5	0.73
Poor access within construction job site	2	3	6	5	3	0.82
Violations of safety laws.	2	2	5	6	4	0.72
Insufficient lighting.	3	3	7	3	3	0.65
Inadequate construction method	3	2	6	5	3	0.68
Inadequate transportation facilities for workers.	3	5	2	4	5	0.68
Material storage location	2	1	6	7	3	0.95
Quality of required work.	3	5	2	4	5	0.83

This question was asked to know the extent following factors affect the growth of Real estate sector. We wanted to know that whether the client/contractor likes to go for given criteria's.

The RII of all the options shows that the factors affect the growth of Real estate sector are **Material storage location**

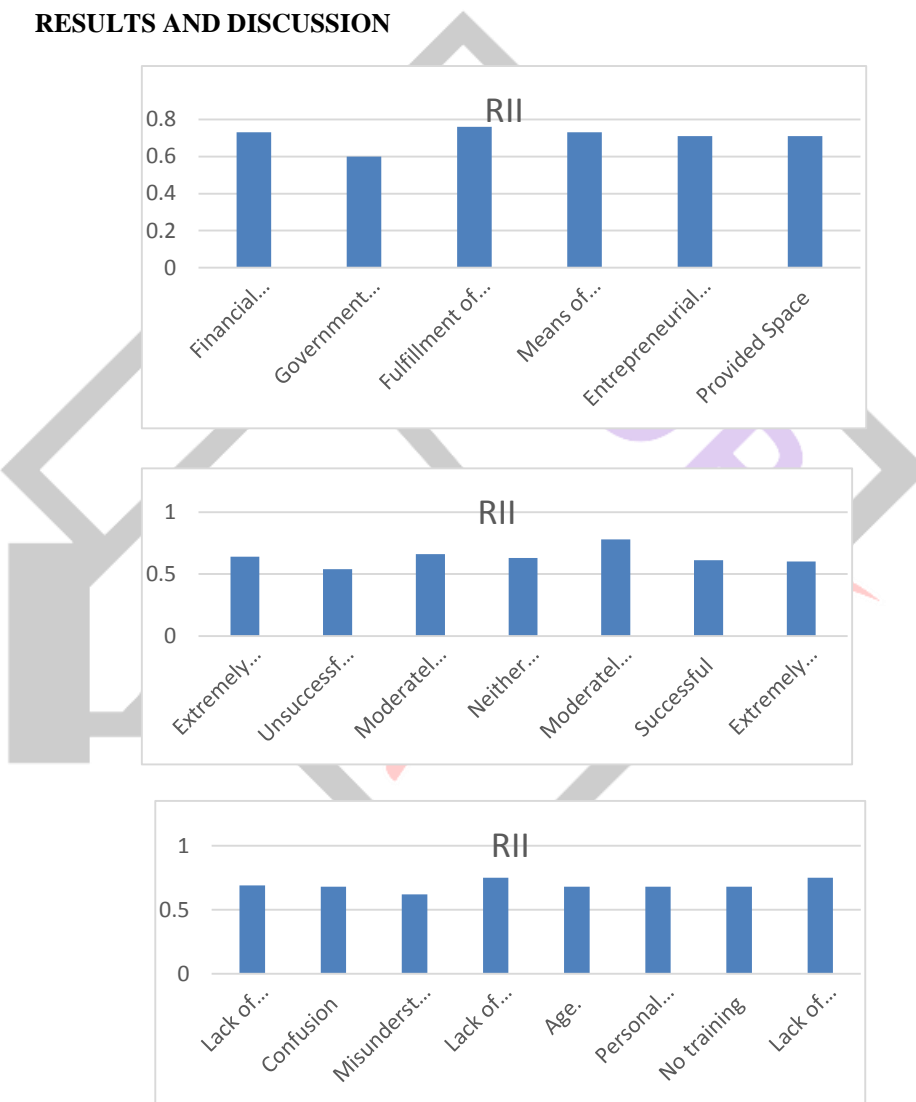
7) Please indicate to what extent following factors affect the growth of Real estate sector in Pune (Miscellaneous)

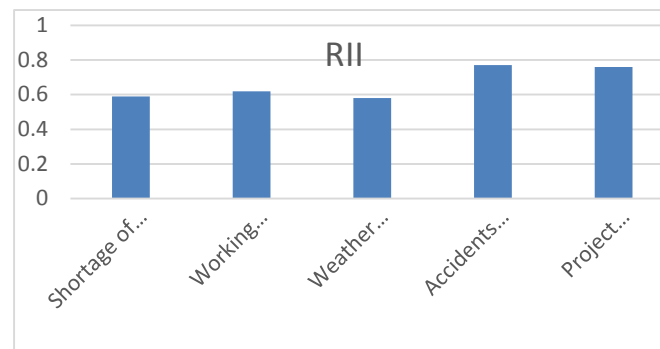
Response	1	2	3	4	5	RII
Shortage of water and/or power supply.	4	3	5	4	3	0.59
Working overtime.	3	4	5	2	5	0.62
Weather conditions	2	4	7	4	1	0.58
Accidents during construction	2	3	6	4	3	0.77
Project objective is not well defined	3	4	2	4	5	0.76

This question was asked to know the extent following factors affect the growth of Real estate sector. We wanted to know that whether the client/contractor likes to go for given criteria's.

The RII of all the options shows that the factors affect the growth of Real estate sector are **Accidents during construction**

II. RESULTS AND DISCUSSION





CONCLUSION

In this study it will be find that the CBA analysis that costs of accident prevention are positively and significantly related to benefits of accident prevention. The result of the Model shows that benefit of accident prevention is positively influenced by costs of accident prevention. This finding further reinforced the notion that costs of accident prevention are related to benefits of accident prevention as indicated above. This notion which was encapsulated in the hypothesis, which stated that the more contractors spend on accident prevention the greater the benefits they will derive is, however, supported by the results of the CBA model analysis of costs of accident prevention to benefits of accident prevention. The analysis shows that the more contractors spend on accident prevention the greater benefits they derived. These results imply that further expenditure on costs of accident prevention will produce greater benefits of accident prevention.

The creation of the preliminary planning model and the development of the associated RII added considerable value and insight into the decision making process by

1. Developing a formalized structure for the decision making process
2. Requiring a systematic approach to the cost benefit analysis
3. Selecting a mathematical procedure (RII) that provides a measure of consistency in judgments and preferences

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