

Critical Success factors for the implementation of PPP model in the A.H. segment in India

Divya Sharma

DCRUST, Murthal, Haryana, India
divusharma5@gmail.com

DOI: 10.29322/IJSRP.10.04.2020.p100102
<http://dx.doi.org/10.29322/IJSRP.10.04.2020.p100102>

Abstract: This research work aims to find out the critical success factors (CSFs) with implementing PPP in affordable housing segment in India. Housing can be a way to define the living standard of a country. As India is a developing country and moving towards the urbanisation with a very faster pace, it results the increased cost of land, development of slums, shortage of affordable housing for low or medium income groups. It becomes difficult for the low or medium income people to purchase a house in the urban areas.

The government of India takes number of initiatives to tackle the problem of affordable housing. The involvement of private sector has playing a major role in the success of Affordable housing projects. The provision of housing for all cannot be the only responsibility of public sector. The burden on government can be reduced by investment from private sector. Affordable housing in Partnership, plays major role for promoting, the affordable housing. The community and private sector are the prominent resources, which have to be incentivized and channelized in the process. There are also various important factors which affect the success of Public private partnership in affordable housing.

The main objective of this research is to investigate these factors. To ascertain the importance of these factors, the study includes three bodies of knowledge. The first body is centered towards thorough literature study for finding important critical success factors for PPP success in affordable housing. The second body prepared the checklist for questionnaire further third body consists of survey on Likert scale and analyzing the result. The study includes a total of 92 Critical success factors (CSFs) categories under twelve critical success criteria. The highest Weightage CSFs (total of 41) critical success factors are shortlisted for questionnaire and are assessed by 19 respondents. The combination of these five bodies of knowledge into one literature developed the final conclusion.

Keyword: Affordable Housing, Public- Private Partnership, Critical Success Factors, Government Policies

I. INTRODUCTION

Housing can define quality of life, economic growth and wellbeing of a country. The Cities across the world has becomes more economically powerful and essential than ever in terms of the education, employment or better living of standard. This escalated demand of urban land which increase the cost and shortage of A.H. for low and medium housing groups. This migration of people for the education, employment or better living of standard towards the developed cities has increased the burden on the urban areas. This growing concentration leads to congested transit, land shortages, slum development and also stressed out the primary needs of human being such as shortfall of houses, open spaces in towns & cities. The urban population of India increased from 27.81 % to 31.16 % during 2001-2011(census of India, 2011). Urban population is expected to reach about 600 million by 2031(taskforce report, MHUPA 2012). The housing shortage in the beginning of 12th five year plan (2012) is estimated 18.78 million, a number which was later revised to 100 million in 2017. The goals of A.H. are quite obvious ones but on close analysis, we find some less obvious reason which is equally important. The obvious reasons are providing shelter and the potential creation of wealth. The other reasons could be more participation of economically weaker sections in society, better living standards, facilities, educational and employment opportunities.

Due to this high pace of rapid urbanization, the demand for A.H. enhanced tremendously. This demand could be fulfilled if both the government and the private sector come together. India is finding the ways to implement public- private partnership (PPP) model in A.H., which helps to integrate the private sector funding in A.H. It would definitely shoulder the burden of land prices and the cost of construction, which represents there are vast opportunities in housing for the private sector, then just lucrative investment options. The

success of public- private partnership in A.H. is controlled by a number of factors which could be demonstrated as Critical Success Factors (CSFs). So, this study based on the CSFs for Implementation of PPP model in A.H. segment in India.

Aim and Objective

The aim is to find out Critical Success factors for the implementation of PPP model in the A.H. segment in India.

Objectives are as discussed below:-

- a) To determine the critical success factors for implementation of public private partnership in A.H.
- b) To do the ranking of critical success factors for implementation of public private partnership in A.H.

Methodology

The research concentrates on Critical Success factors for the implementation of PPP model in the A.H. segment in India. The research involves a combined questionnaire survey of professionals who have experience in handling PPP model in the A.H. The case studies are based on A.H. projects of Delhi and Gurgaon. The research starts with a comprehensive literature review of the identification of the success factors in PPP model in the A.H. Most of studied literature includes published literature, unpublished papers, books and internet resources relevant to area of investigation. Literature review provides a major support to make decisions on selecting success factors which affect the success of project. Brainstorming session provided a framework for making questionnaire for research work. This includes the case study of actual ongoing A.H. project on PPP mode. By literature review it is analysed that there are various factors which are responsible for the projects where construction of A.H. is going on with PPP mode.

Significance of Project

The A.H. is a project which will reduce the difference between various income groups in terms of their living standards. The need of A.H. arises with increment of the slum areas. When communities take a moment to consider their most important assets, the aspects that are often mentioned include high-quality schools, employment and living standard. Instead, they may travel long distances from more reasonably-priced suburbs. Due to limited income source the middle income group people are unable to afford a house in a high quality environment. The partnership with private sector would lead to faster completion and use of technology in the project.

II. LITERATURE REVIEW

This chapter presents literature review on the subject of Critical success factors for the implementation of PPP model in A.H. The literature review is collated from various published and unpublished sources, which include international & national journals, conferences, books, reports, thesis and other reference. The next section deals with the integrative research papers. The third section presents methodological research papers and the fourth section narrates theoretical literature. The fifth section reviews the books on the subject. The chapter concludes with reviews of critical success factors and for the implementation of PPP model in A.H.

List of Critical Success factors from Literature Review

Based on literature review and by holding discussions with experts who are working actually in field, 92 CSFs were identified. After analyzing, these factors were grouped under 12 principal criteria. These numerous factors are Categorised under different Criteria such as political, social and financial, Legislation, Partnership, Land, Project Management, Feasibility study, Risk, Profit and Environmental affect the success of Public private partnership in A.H. Ashwin Mahalingam, M.ASCE1(2009) Concluded Political Willingness, Transparent political situation, Social support, Project economic viability, Access to finance and Favourable legal framework etc. as the Enablers in the PPP Experiences in Indian Cities. Similarly Yahaya Ahmed and Ibrahim Atan Bin Sipan (2019) concluded Project economic viability, efficient legal framework most critical for PPP model in A.H. segment in affordable housing in nigeria using critical success factors of public private partnership. Affordable housing development in india: current models and their replication by Ramakrishna Nallathiga*\$, S P Lele** and J V V Prasad(2018) states that Government guarantee, Political support, Effective land use planning, consistent monitoring are critical. An examination of the critical success factors for public private partnership in Housing projects in Nigeria written by Paschal Onyemaechi, Martin Samy and David Pollard(2015) states a number of factors for A.H.

S.NO.	I. POLITICAL CRITERIA
CF1	Political Willingness
CF2	Well-organized and committed public agency
CF3	Government guarantee
CF4	Efficient approval process
CF5	Public sector negotiating skills
CF6	Good and favourable governance
CF7	Political influence
CF8	Stable political situation
CF9	Transparent political situation
CF10	Political support
CF11	Statutory and political Environment
CF12	Public sector adequate negotiation staff
S.NO.	II. SOCIAL CRITERIA
CF13	Developer's social accountability
CF14	Slum Rehabilitisation
CF15	Stable and effective social support
CF16	Transparent social situation
CF17	Accessibility
CF18	Social support
S.NO.	III. FINANCIAL CRITERIA
CF19	Stable micro and macro-economic system
CF20	Expected debt paying ability of the project
CF21	Available strong and resilient financial market/ Favourable investment environment
CF22	Project economic viability
CF23	Sound financial package
CF24	Financial Framework/structure
CF25	Access to finance
CF26	Cross Subsidy
CF27	Adequate Funding and its provisions
CF28	Public guarantee's for loan
CF29	Available financial market or availability of suitable financial market
S.NO.	IV. LEGISLATION CRITERIA
CF30	Efficient legal framework
CF31	Favourable legal framework
CF32	Action against errant developers
S.NO.	V. PARTNERSHIP CRITERIA
CF33	Business diversification
CF34	Ample time to evaluate proposal
CF35	Robust and clear agreement
CF36	Competition
CF37	Shared authority, openness and communication between public and private sectors
CF38	Selecting the right partner
CF39	Removal of Wide gap between public and private sector expectations
CF40	Public guarantee's for loan
CF41	Management transfer from public to private sector
CF42	Independent authority for conflict resolution
CF43	Assistance in PPP
CF44	Strong and good private consortium/capable private partner
CF45	Experience in partnering
CF46	Indecisiveness, compatibility, and strong partners relationship
CF47	Consultation with end-user
S.NO.	VI. LAND CRITERIA
CF48	Availability of marketable land parcels
CF49	land acquisition
CF50	Availability of Land

CF51	Land Finance
CF52	Effective land use planning
S.NO.	VII. PROJECT MANAGEMENT CRITERIA
CF53	Project management success/Support
CF54	Client Involvement
CF55	Consistent monitoring
CF56	Realistic projection
CF57	Refutable developer
CF58	Quality Work
CF59	Rental cost in relation to income
CF60	Reduce life cycle cost of housing facility
CF61	Realistic Cost and Time Estimates
CF62	(Detailed) thorough and realistic assessment of the cost and benefits
CF63	Commuting cost from the location of housing to public facilities
CF64	Operational cost over-run
S.NO.	VIII. FEASIBILITY STUDY CRITERIA
CF65	Right project identification
CF66	Demand of project
CF67	Favourable locations/Connectivity
CF68	Appropriate project identification Design
CF69	project design and structuring
CF70	Planning and design with fast legal approvals
CF71	Duration
CF72	House buyers' demand
CF73	Pre-Analytical study of project
S.NO.	IX. RISK CRITERIA
CF74	Equitable risk allocation and sharing
CF75	Detailed risk analysis
CF76	Delaying Project approvals and permits
CF77	Appropriate risk allocation and risk sharing
S.NO.	X. TECHNICAL CRITERIA
CF78	Adequate Latest Technology and construction
CF79	Technical competence
CF80	Geotechnical Conditions
CF81	Workmanship
CF82	Availability of Resources
CF83	Transparent Procurement
CF84	Technical specification of housing
CF85	Project technical feasibility
S.NO.	XI. PROFIT CRITERIA
CF86	Multi benefit objectives
CF87	Developer's profit sharing accountability
CF88	Project profitability
CF89	Profit assurance for private sector
S.NO.	XII. ENVIRONMENTAL CRITERIA
CF90	Environmental protection
CF91	Environmental performance of housing facility (Eco-friendly)
CF92	Use of environmental friendly materials

ii. Conclusion

This research work is centred towards detailed study of Critical Success Factors with through literature study. After finding critical success factors for PPP success in affordable housing which includes a total of 92 Critical success factors (CSFs) identified. These are categorized by twelve critical success criteria. The highest Weightage CSFs (total of 42) critical success factors are shortlisted for questionnaire and are assessed by 20 respondents.

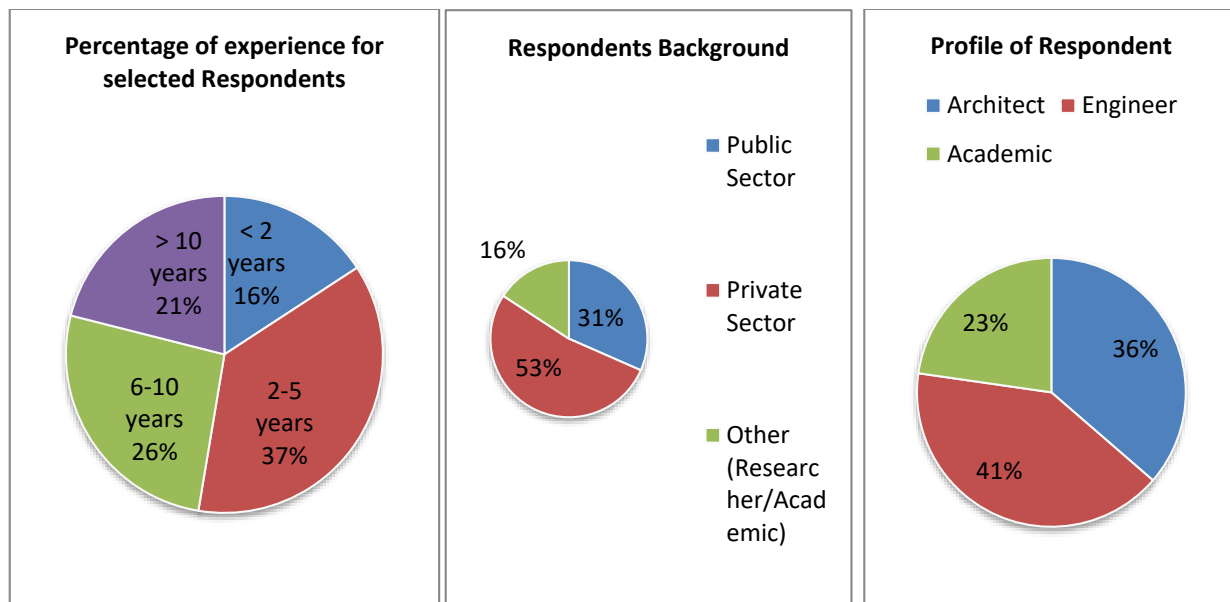
III. QUESTIONNAIRE SURVEY

This section deals with the questionnaire survey related to study critical success factors for the implementation of PPP model in A.H. In this survey the respondents are client, contractor/professionals and researcher. The questionnaire consists of two parts, part A shows the respondent personal Info. Such that whether he is a contractor, engineer, architect or project manager etc., their work experience and designation in their company. Part B consists of success factors identified from literature review. The respondents were asked to rate the factors on an interval scale 1-5. Value of 1 is given to the factor having relatively least importance and value 5 given to factor which is extremely important for the Public private partnership implementation in affordable housing segment in India. A total of 92 factors were identified from literature study and sub grouped in 12 criteria. Depending upon highest Weightage, 41 factors were shortlisted for the questionnaire. Total 19 responses were obtained for the questionnaire survey. The demographic of respondents about their experience are given below. Experience of the respondents was asked during the questionnaire survey, 21 % of the respondents had an experience greater than 10 years and 26 % were in the range of 6-10 years experience in Construction.

i Demographics of Respondents

Category	Total Experience	No. of Respondents	%
1	< 2 years	3	16
2	2-5 years	7	37
3	6-10 years	5	26
4	> 10 years	4	21

S.No.	BACKGROUND	NO. OF RESPONDENTS	S.No.	PROFILE OF RESPONDENTS	NO. OF RESPONDENTS
1	PUBLIC SECTOR	6	1	ARCHITECT	8
2	PRIVATE SECTOR	10	2	ENGINEER	9
3	OTHER (RESEARCHER/ACADEMIC)	3	3	ACADEMIC	5



IV DATA ANALYSIS AND RESULT

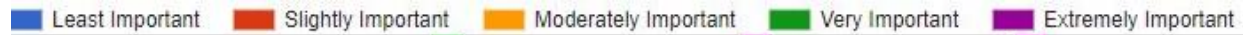
This section includes the analysis and results for the data collected in Phase I of the study. This chapter is divided into three main sections, section one deals with result analysis of Critical Success factors , section two comprises of descriptive analysis and in section three the view of respondents on the critical success factors for the affordable housing segment in India. Data Collection is done by using Likert scale method for the analysis importance of Critical Success factors for the implementation of PPP model in the A.H. segment in India.

Based on score, the importance gained by overall respondents the factors were ranked.

Sample size=13

Total respondents=19

In rating scale 1 indicates least important and 5 indicate extremely important.



The relative importance Index of all factors are then found by calculating RII based on which ranking is done. After that Ranking of Critical Factor for Success as per RII (Relative Importance Index) are sequenced; in ascending order.

The formula of RII as given below:

$$\text{Relative Importance Index (RII)} = \frac{\sum W}{A * N}$$

$$= \frac{(5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1)}{5n}$$

Where w is the weighting given to each factor by the respondent, ranging from 1 to 5, (n1= number of respondent give least important 1, n2= number of respondent give slightly important, n3= number of respondent give moderately important, n4= number of respondent give very important. N5= number of respondent give extremely important. A is the highest weight (i.e. 5 in the study) and N is the total number of samples.

Factors	1	2	3	4	5	RII	Ranking
Effective land use planning	0	1	2	6	10	0.863158	1
Quality Work	0	1	3	7	8	0.831579	2
Availability of Land	1	1	2	7	8	0.810526	3
Planning and design with fast legal approvals	1	1	2	7	8	0.810526	3
Adequate Funding and its provisions	0	3	3	4	9	0.8	4
Favourable locations/Connectivity	0	2	3	7	7	0.8	4
Transparent Procurement	0	3	1	8	7	0.8	4
Access to finance	0	2	2	10	5	0.789474	5
Land Finance	1	2	1	8	7	0.789474	5
Government guarantee	1	2	2	7	7	0.778947	6
Consistent monitoring	1	3	1	6	8	0.778947	6
(Detailed) thorough and realistic assessment of the cost and benefits	1	1	4	6	7	0.778947	6
House buyers' demand	0	2	3	9	5	0.778947	6
Environmental performance of housing facility (Eco-friendly)	1	3	4	5	7	0.778947	6
Well-organized and committed public agency	1	2	2	8	6	0.768421	7
Project economic viability	0	3	2	9	5	0.768421	7
Adequate Latest Technology and construction	1	2	3	7	6	0.757895	8
Technical competence	1	1	4	8	5	0.757895	8
Project management success/Support	0	3	2	11	3	0.7474	9
Detailed risk analysis	1	2	5	5	6	0.736842	10
Use of environmental friendly materials	1	3	3	6	6	0.736842	10
Transparent political situation	2	1	6	3	7	0.726316	11
Available financial market or availability of suitable financial market	1	3	3	7	5	0.726316	11
Efficient legal framework	0	5	3	6	5	0.715789	12
Action against errant developers	0	3	4	5	6	0.715789	12
Strong and good private consortium	1	4	2	7	5	0.715789	12
Stable and effective social support	0	5	3	8	3	0.694737	13
Equitable risk allocation and sharing	0	4	5	7	3	0.694737	13

V.	Multi benefit objectives	1	3	5	6	4	0.694737	13
	Shared authority, openness and communication between public and private sectors	1	4	3	8	3	0.684211	14
	Project profitability	1	2	4	7	4	0.684211	14
	Appropriate risk allocation and risk sharing	2	1	5	10	1	0.673684	15
	Indecisiveness, compatibility, and strong partners relationship	1	3	7	4	4	0.673684	15
	Environmental protection	3	3	2	6	5	0.673684	15
	Profit assurance for private sector	2	3	3	9	2	0.663158	16
	Favourable legal framework	1	5	4	6	3	0.652632	17
	Delaying Project approvals and permits	2	1	7	8	1	0.652632	17
	Political Willingness	3	3	4	5	4	0.642105	18
	Transparent social situation	1	3	6	5	3	0.631579	19
	Political support	4	4	3	4	4	0.6	20
	Social support	2	6	5	4	2	0.578947	21

CONCLUSION

Based on the overall respondent result the critical success factors are arranged in ascending order of their ranks; attribute with highest rank 1 indicates that it has max. Impact on the success of A.H. in partnership, attribute with lowest rank indicates that it has relatively less impact then other.

Ranking	Critical Success factors				
1	Effective land use planning				
2	Quality Work				
3	Availability of Land	Planning and design with fast legal approvals			
4	Adequate Funding and its provisions	Favourable locations/Connectivity		Planning and design with fast legal approvals	
5	Access to finance	Land Finance			
6	Government guarantee	Consistent monitoring	(Detailed) thorough and realistic assessment of the cost and benefits	House buyers' demand	Environmental performance of housing facility (Eco-friendly)
7	Well-organized and committed public agency		Project economic viability		
8	Adequate Latest Technology and construction		Technical competence		
9	Project management success/Support				
10	Detailed risk analysis		Use of environmental friendly materials		
11	Transparent political situation		Available financial market or availability of suitable financial market		
12	Efficient legal framework		Action against errant developers		Strong and good private consortium
13	Stable and effective social support		Equitable risk allocation and sharing		Multi benefit objectives
14	Project profitability		Shared authority, openness and communication between public and private sectors		
15	Appropriate risk allocation and risk sharing		Indecisiveness, compatibility, and strong partners relationship		Environmental protection

16	Profit assurance for private sector	
17	Delaying Project approvals and permits	Favourable legal framework
18	Political Willingness	
19	Transparent social situation	
20	Political support	
21	Social support	

In future research, further work is needed to explore in more detail and to understand how the factors interact with each other in Affordable housing project. 42 critical success factors are selected on the basis of in depth literature review and case study. Ranking of Factors are calculated using the Relative Importance index. Ranking of CSFs are as follows;

- i. Effective Land use Planning
- ii. Quality Work
- iii. Planning and design with fast legal approvals
- iv. Favorable locations/Connectivity
- v. Access to finance
- vi. House buyers' demand

REFERENCES

- [1] Mahalingam, A. Construction Engineering and Management (April, 2009) pp 419-429
- [2] Abdul, A.-R. and Kassim, J. Habitat International Vol. 35, Issue 1, January 2011, Pages 150-157
- [3] Ramlan, H. and Zahari, E. 7th International Economics & Business Management Conference, 5th & 6th October 2015, Volume 35, (2016) Pages 216-223
- [4] Kwofie, T., Afram, S. and Botchway, E. (2016), Built Environment Project and Asset Management, Vol. 6 No. 1, pp. 58-73.
- [5] Oyebanji, A. O., Liyanage, C. and Akintoye A. Gulf Organisation for Research and Development International Journal of Sustainable Built Environment (31 March 2017) pp. 1-12.
- [6] Liu, T., Chan, A. and Wang, S. Construction Engineering and Management (August 14, 2017) pp 573-581
- [7] Singh, J. P. 2018 Construction Engineering and Management Vol. 144, Issue 12 (December 2018) pp 388-394.
- [8] Chan, P. A. C. and Adabre, M. A. 2019 Building and Environment Volume 156, June 2019, Pages 203-214
- [9] Bakar A.H.A., Cheen K. S. and Rahmawaty 2011 International Journal of Technology (January 2011) PP 83-92
- [10] Zou, W; Kumaraswamy, MM; Chung, KHJ and Wong, JMW International Journal of Project Management, 2014, v. 32 n. 2, p. 265–274
- [11] Dhavale T.B. and Aher R.R., 2016 International Journal of Modern Trends in Engineering and Research Volume 2, Issue 7, [April 2016] Special Issue of ICRTET'2016
- [12] Muhammad, Z. and Johar, F. INTERNATIONAL JOURNAL OF CONSTRUCTION MANAGEMENT, Vol. 35, Issue 1, January 2011, Pages 150-157
- [13] Kavishe, N., and Chileshe, N. Journal of Facilities Management, Vol. 17 No. 2, August 2018, pp. 188-207.
- [14] Ahmed, Y. and Sipan, I.A.B. Asia Proceedings of Social Sciences April 2019 yahmednas1@gmail.com
- [15] Alteneiji, K., Alkass, S. and Abu Dabous, S. , *International Journal of Housing Markets and Analysis*, August 2019 Vol. ahead-of-print No. ahead-of-print.
- [16] Nallathiga, R. Lele, S.P. Prasad, J.V Shelter, Volume 19, No. 1, pp 43-57
- [17] Kamal, M. and Roy, J. *Journal of Economics and Sustainable Development*, April 2016, Vol. 7, No. 6
- [18] Sengupta, U. Habitat International 30 (2006) 448–461
- [19] Zhang, X. *Journal of Construction Engineering and Management*, Vol. 131, No. 1, January 1, 2005.
- [20] Neogi (2016) Affordable Urban Housing in India
- [21] Viswanathan (2014) Increasing the Supply of Affordable Housing in Urban India – Mumbai
- [22] Chan, A.P.C., Lam, P.T.I., Chan, D.W.M., Cheung, E. and Ke, Y. (2010), “Critical success factors for PPPs in infrastructure developments: Chinese perspective”, *Journal of Construction Engineering and Management*, Vol. 136 No. 5, pp. 484-494.
- [23] Affairs, U. (2017). Public Private Partnerships for Affordable Housing in India. *MoHUA*, 70.
- [24] ‘Bawana is not my Delhi’ - The Hindu. (n.d.). Retrieved December 1, 2019, from <https://www.thehindu.com/news/cities/Delhi/'Bawana-is-not-my-Delhi'/article14024510.ece>

- [25] Government of Haryana. (2013). *Haryana Affordable Housing Policy 2013*. (i).
- [26] GRIHA. (2017). *Griha for Affordable Housing*. Retrieved from <https://affordablehousingonline.com/>
- [27] Herda, G., Rani, S., Caleb, R., Gupta, R., Behal, M., Gregg, M., & Hazra, S. (2017). *Sustainable Social Housing in India: definition, challenges and opportunities -Technical Report*. (May). Retrieved from http://docs.wixstatic.com/ugd/caf2de_829d1d976a8c42f989c8b03b7de9d0e0.pdf%0Ahttp://lcbgroup.wixsite.com/mas-ship
- [28] Indian Green Building Council. (2015). *IGBC Green Residential Societies Rating System*. (November).
- [29] Limaye, A. (Jones L. L. S. (2013). Affordable Housing in India Urbanisation and Housing Shortage in India. *On.Point*, 2.
- [30] Teotia, M. K. (2016). *Housing for the Urban Poor in Chandigarh Including the Excluded*. (October 2015).