JNNURM Scheme in Surat City: Views of the Beneficiaries

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ABSTRACT

There are three basic need of human being like food, clothing, and house. Housing is considered as one of the basic need of the human being. As per the statistics of the housing of government of India, the total housing requirement during 11th five year plan period would be 26.53 million dwelling units. Among this, 99% housing shortage pertains to Economically Weaker Sections and Lower Income Group of people. After 1951, the deficit trend has started and is continuing with an escalating magnitude, in spite of necessary steps taken by central, state and local government. If suitable measures are not taken, this gap will again increase and further the housing problem. Providing low cost housing is a serious challenge to the central and state government, builders, contractors, micro housing financial institutions, housing banks etc. the government is taking various steps to reduce this problem by implementing various low cost housing scheme like the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Rajiv Awas Yojana (RAY), Mukhya mantri Amrutam Awas Yojana, Two Million Housing Program (2MHP) etc. This paper mainly focuses on study of JNNURM housing scheme to measure the satisfaction level of the beneficiaries/buyers by using factor analysis method.

Keywords: JNNURM, Beneficiaries, Factor analysis

I. INTRODUCTION

The demand for housing increases due to rapid growth of population. Like other developing country, India too is presently passing through a phase of acute housing shortage. About 15.2% of India's urban population lives in slums. The census records of India exhibits that there was no deficit-housing problem in India till the first half of the century. In 1901, there were 55.8 million houses for 54 million households showing a surplus of 1.8 million houses. This surplus situation continued till 1941. It was only after 1951; the deficit trend has started and is continuing with an escalating magnitude. In 1971, total number of households was 100.4 million and the number of houses was 90.7 million. Showing a deficit of 9.7 million. The housing shortage in 1991 was about 31 million units. The housing shortage during 2001 was 41 million. The estimated housing stock requirement in the country by 2021 is about 77 million in urban areas and 63 million in rural areas. Housing shortage is mainly due to the exponential growth of population, rapid urbanization and inadequate addition to the existing housing stock. A majority of the urban cities of India have seen urban poverty and slum expansion which exist even with all development efforts. A typical characteristic of our urban cities is that fashionable bungalows exist on one side of the city and slums on other side. At present India needs to build many million homes at the right location with affordable prices and adequate quality, especially for EWS and LIG class of people.

A major scheme is Jawaharlal Nehru National Urban Renewable Mission (JNNURM) that is being implemented by the local urban government in Surat city. It is now seven year and a review of its implementation becomes imperatives their views of the beneficiaries related to its implementation. A factor analysis method has been used for the data analytical purpose.

II. RESEARCH REVIEW

Bangladesh Bureau of Statistics (1999) describes, some of the criteria used by the Bureau to identify slums include predominantly poor housing, poor quality or no sewerage and drainage, inadequate drinking water supplies, insufficient or no street lighting, and few or no paved streets or paths.

Das (2012) emphasizes on Provision of basic amenities is an important factor for assessing the household quality of living. There are various kinds of basic amenities in a community. Most scholars emphasize three elements, among them—drinking water, sanitation and electricity.

Sabir Ali (1990) reveals that not only the basic services like drinking water, electricity, toilets, roads and health are lacking in resettlement colonies in Delhi but the maintenance of these services and facilities are also poor.

III. METHODOLOGY

The research approach adopted was quantitative and the research design was descriptive. Under the quantitative approach survey was conducted to measure the satisfaction level of the beneficiaries/buyers of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) affordable housing scheme. The sampling procedure adopted for the beneficiaries under the JNNURM was non probability convenience sampling. The major tool for analysis was factor analysis.

IV. DATA PRESENTATION AND ANALYSIS

The output of the factor analysis is presented below:

Factor Analysis

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.612
Bartlett's Test of Sphericity	Approx. Chi-Square	2.723E4
	df	1326
	Sig.	.000

The KMO and Barletts Test table displays the results for interpreting the adequacy of data for factor analysis. Kaiser-Meyer-Olkin is a measure of sampling adequacy and its value should be greater than 0.6 for our sample to be adequate for undertaking factor analysis. And, p-value of Bartlett's test of sphericity should be less than 0.05. Since, in our analysis the value of KMO test is 0.612 (greater than 0.6) and the p-value of Bartlett test is 0.000 (less than 0.05).

Table 2: Communalities		
Factor	**Initial**	**Extraction**
AP_1	1.000	.363
AP_2	1.000	.548
AP_2a	1.000	.494
AP_2b	1.000	.924
AP_3	1.000	.461
AP_4	1.000	.789
AP_5	1.000	.543
AP_5a	1.000	.659
AP_5b	1.000	.764
AP_5c	1.000	.513
AP_6	1.000	.624
AP_6a	1.000	.963
AP_6b	1.000	.470
AP_7	1.000	.795
AP_8	1.000	.783
AP_9	1.000	.927
AP_10	1.000	.907
AP_11	1.000	.958
AP_12	1.000	.919
AP_14	1.000	.887
AP_15	1.000	.482
AP_16	1.000	.758
AP_17	1.000	.793
AP_18	1.000	.865
AP_19	1.000	.807
AP_20	1.000	.805
AP_21	1.000	.889
AP_22	1.000	.922
AP_24	1.000	.729
AP_25	1.000	.850
AP_27	1.000	.280
AP_28	1.000	.873
AP_29	1.000	.601
AP_30	1.000	.911
AP_31	1.000	.886
AP_32	1.000	.632
AP_33	1.000	.910
AP_34	1.000	.747
AP_35	1.000	.822
AP_36	1.000	.854
AP_37	1.000	.821
AP_38	1.000	.901

AP_39	1.000	.783
AP_40	1.000	.757
AP_41	1.000	.895
AP_42	1.000	.893
AP_43	1.000	.873
AP_44	1.000	.605
AP_45	1.000	.963
AP_46	1.000	.835
AP_47	1.000	.865
AP_48	1.000	.897
Extraction Method: Principal Component Analysis		

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.568	12.631	12.631	6.568	12.631	12.631	4.088	7.861	7.861
2	4.866	9.357	21.988	4.866	9.357	21.988	3.960	7.615	15.476
3	4.049	7.787	29.776	4.049	7.787	29.776	3.318	6.380	21.856
4	3.460	6.655	36.430	3.460	6.655	36.430	3.291	6.329	28.185
5	3.131	6.021	42.451	3.131	6.021	42.451	3.227	6.206	34.391
6	2.690	5.174	47.625	2.690	5.174	47.625	3.139	6.037	40.428
7	2.453	4.718	52.343	2.453	4.718	52.343	2.886	5.550	45.978
8	2.154	4.142	56.484	2.154	4.142	56.484	2.665	5.125	51.103
9	1.798	3.458	59.942	1.798	3.458	59.942	2.476	4.761	55.864
10	1.648	3.170	63.112	1.648	3.170	63.112	2.456	4.722	60.586
11	1.335	2.567	65.679	1.335	2.567	65.679	2.333	4.486	65.072
12	1.195	2.297	67.976	1.195	2.297	67.976	1.225	2.356	67.428
13	1.170	2.249	70.225	1.170	2.249	70.225	1.214	2.335	69.762
14	1.117	2.149	72.374	1.117	2.149	72.374	1.200	2.308	72.070
15	1.099	2.113	74.487	1.099	2.113	74.487	1.171	2.252	74.322
16	1.060	2.038	76.525	1.060	2.038	76.525	1.145	2.203	76.525
17	.987	1.898	78.423						
18	.959	1.845	80.268						
19	.918	1.766	82.034						
20	.894	1.719	83.753						
21	.860	1.653	85.406						
22	.822	1.580	86.986						
23	.778	1.496	88.482						
24	.758	1.457	89.939						
25	.678	1.303	91.243						
26	.622	1.197	92.440						

27	.589	1.133	93.573							
28	.530	1.019	94.592							
29	.428	.823	95.415							
30	.356	.685	96.100							
31	.309	.595	96.695							
32	.270	.519	97.214							
33	.239	.459	97.674							
34	.205	.394	98.068							
35	.183	.352	98.420							
36	.129	.249	98.668							
37	.115	.222	98.890							
38	.107	.206	99.096							
39	.092	.177	99.273							
40	.075	.145	99.419							
41	.053	.102	99.521							
42	.043	.083	99.603							
43	.041	.079	99.683							
44	.032	.062	99.744							
45	.028	.054	99.798							
46	.027	.052	99.851							
47	.023	.045	99.895							
48	.018	.034	99.929							
49	.013	.025	99.954							
50	.011	.021	99.975							
51	.008	.016	99.991							
52	.005	.009	100.000							
Extraction Method: Principal Component Analysis.										

The table no.2 displays communalities. Communalities mean the proportion of variance due to common factors and shared by several items. Communalities are used to estimate the variance that is unique to each other. This variance which is unique to each variable is calculated by total variance explained by that variable minus the communality of that variable.

Table no. 3 the total variance explained table displays the total variance, percentage variance and cumulative percentage variance for both-unrotated and rotated components. The first half of the table shows details of unrotated components and second half shows the details of rotated components. But, the cumulative percentage of variance of unrotated as well as rotated components is always same.

Table 4: Rotated Component Matrix[a]

	Component															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AP_6a	.889															
AP_11	.869															
AP_25	.763															
AP_4	-.590				.417											
AP_24		.791														
AP_36		.735														

AP_34		.691														
AP_37		.633				-.440										
AP_35		.525						.522								
AP_40		-.513	-.508													
AP_10			.872													
AP_19			-.614	.400												
AP_16			.600													
AP_12				.921												
AP_33		.453		.627												
AP_45	-.457			.613												
AP_9				.534					.511							
AP_7				-.455						.409						
AP_38					-.901											
AP_22					.733		.446									
AP_41	-.516				.677											
AP_14					.517											
AP_5b						.728										
AP_30					-.416	.709										
AP_20				.481		.658										
AP_17							.745									
AP_48							.716									
AP_39							.523									
AP_8								.738								
AP_31								.677								
AP_46								-.614								
AP_21									.843							
AP_2b			.446						.603							
AP_3									.544							
AP_18			.432						.478							
AP_28										.754						
AP_5a										.709						
AP_47			-.420				.445			.473						
AP_43											.666					
AP_42								-.493			.652					
AP_1											.526					
AP_5											.519	.451				
AP_27											.457					
AP_32												.777				
AP_44													-.747			
AP_5c													.579			
AP_15													.461			.418
AP_2														-.713		
AP_6b														.459		
AP_29															.746	

AP_6																.748
AP_2a																-.474
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.																
a. Rotation converged in 24 iterations.																

In the Table No.4 about rotated components matrix, each number represents the partial correlation coefficient between variable and the rotated component. These coefficients help in identifying the component.

Table 5: Dimensions Identified

Component	Code	Item	Score	Dimension
1	AP_6a	Glazed tiles flooring 2 dado in toilet facility	.889	Core Amenities
	AP_11	Adequate number of streetlight	.869	
	AP_25	Nearness shop (For purchasing stuff, shopping etc.)	.763	
	AP_4	Adequate drainage facilities	-.590	
2	AP_24	Adequate storm drains facilities	.791	Flat Area Sufficiency and Civic Supply
	AP_36	Adequate size of carpet area of house	.735	
	AP_34	Easily access to loan facilities	.691	
	AP_37	Adequate size of built-up area of house	.633	
	AP_35	Solid waste collection & disposal system	.525	
	AP_40	Good atmosphere and adequate number of books in library	-.513	
3	AP_10	Compound wall with entry gate facilities for feeling safety	.872	Social Securities and Safety Facilities
	AP_19	Multi utility centre with all social facilities	-.614	
	AP_16	Tree plantation for green atmosphere and feeling of happiness	.600	
4	AP_12	Pleasant environment & facilities at garden	.921	Social Linking Facilities
	AP_33	Easily access to credit-linked subsidy scheme	.627	
	AP_45	Sufficient hawkers space	.613	
	AP_9	Surrounding pucca road facilities	.534	
	AP_7	24 hours water supply network	-.455	
5	AP_38	Solar system facilities to improve living standard	-.901	Social Benefit and Maintenance Cost
	AP_22	Adequate balwadis facilities	.733	

	AP_41	Affordable maintenance cost	.677	
	AP_14	Easily accessible location of house	.517	
6	AP_5b	Good quality wash basin facility	.728	Housing Structure and Market Facilities
	AP_30	Reasonable earth quake proof R.C.C. frame structure	.709	
	AP_20	Nearness to vegetable Market	.658	
7	AP_17	Sufficient space available for all games within the play ground	.745	Social Infrastructure Facilities
	AP_48	Well-connected transport facilities	.716	
	AP_39	Ghodiya Ghar facilities for social benefit	.523	
8	AP_8	Underground & Overhead tank with pump	.738	Outer Facilities
	AP_31	Adequate water proofing on terrace	.677	
	AP_46	Adequate security facility	-.614	
9	AP_21	Adequate anganwadis facilities	.843	Life Up gradation Facilities
	AP_2b	Reasonable quality material used for cabling	.603	
	AP_3	Adequate Pucca Surrounding Pavement	.544	
	AP_18	Bath-room with separate balcony (Wash facility)	.478	
10	AP_28	Other medium school (Imparting education in Marathi, Urdu, Telugu, Hindi, and Udiya etc.	.754	Storage and Education Facilities
	AP_5a	Adequate loft in Kitchen	.709	
	AP_47	Adequate entry gate security	.473	
11	AP_43	Elevator facilities to improve living standard	.666	Internal and Better Living Standard Facilities
	AP_42	Gym facilities with adequate instruments	.652	
	AP_1	Adequate plumbing facilities	.526	
	AP_5	Kitchen facilities	.519	
	AP_27	Gujarati medium primary school	.457	
12	AP_32	Ceramic tiles flooring with reasonable quality of material	.777	Material Use for Tiles
13	AP_44	Water purifiers with clean drinking water	-.747	Better Drinking of Water and Kitchen Facilities
	AP_5c	Kota stone platform in kitchen with glazed tile dado	.579	
	AP_15	Accommodation and sufficient	.461	

		space in community hall		
14	AP_2	Continuous electrification facilities	-.713	Good Quality Material and Electrification Facilities
	AP_6b	Reasonable good material of commode (Tub of the toilet)	.459	
15	AP_29	Secondary school	.746	Education Facilities
16	AP_6	Toilet facilities	.748	Sanitation and Electric Point Facilities
	AP_2a	Adequate number of electric point	-.474	

In the table no. 5 the Facilities criteria based upon actual facilities (perception) delivered to beneficiaries were factorized into 16 dimensions namely Core Amenities, Flat Area Sufficiency and Civic Supply, Social Securities and Safety Facilities, Social Linking Facilities, Social Benefit and Maintenance Cost, Housing Structure and Market Facilities, Social Infrastructure Facilities, Outer Facilities, Life Up gradation Facilities, Storage and Education Facilities, Internal and Better Living Standard Facilities, Material Use for Tiles, Better Drinking of Water and Kitchen Facilities, Good Quality Material and Electrification Facilities, Education Facilities, and Sanitation and Electric Point Facilities.

V. CONCLUSION

A factor analysis was run for reduction of data and to identify the emerging dimensions related to measuring satisfaction level of the respondents. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.612 and the Significance (Bartlett's Test of Sphericity) was 0.000. Hence we continued with the analysis using the Extraction method Principal Component Analysis and the Rotation method Varimax with Kaiser Normalization. The total variance explained was 76.525. Total sixteen dimensions were identified namely Core Amenities, Flat Area Sufficiency and Civic Supply, Social Securities and Safety Facilities, Social Linking Facilities, Social Benefit and Maintenance Cost, Housing Structure and Market Facilities, Social Infrastructure Facilities, Outer Facilities, Life Up gradation Facilities, Storage and Education Facilities, Internal and Better Living Standard Facilities, Material Use for Tiles, Better Drinking of Water and Kitchen Facilities, Good Quality Material and Electrification Facilities, Education Facilities, and Sanitation and Electric Point Facilities.

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