The Structural Profile Of The Socio Economic And Housing Problems Of The Slum Areas In Enugu City, Nigeria; An Insider's Perception

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---**Abstract**---
This study aims at the identification of the structural profile of the socio-economic and housing problems of the slum areas. Five slum areas in Enugu City were chosen for the study consisting of three core and two peripheral spontaneous slum areas, namely Coal Camp, Obiagu, and Ogui Urban (core slum areas), Ngenevu and Jamboree (peripheral slum areas). 412 slum dwellers randomly selected from the chosen areas participated in the study. Principal Component Analysis (PCA) version of Factor Analysis (FA) statistical technique was employed for the data analysis. The technique reduced the 17 variables used for the study to 7 components or factors. The PCA also produced the structural profile of the variables with lack of housing amenities being the paramount. This is followed in descending order by household size, lack of job and low income, accommodation, tenancy and lastly security problems. It is therefore recommended that programme for the improvement of the slum areas in Nigeria should be phased in accordance with this structure.

Key Words: Problem structure, housing, upgrading, phased programme and problem severity.

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I. INTRODUCTION

A common feature of almost all Nigerian cities is slum conditions which occur either as central or peripheral slum. Housing problems in these slum areas are now a matter of crucial concern to the residents, the governments and the environmental practitioners. The problem is not just the need to ensure an adequate supply of houses in the right quantity and quality to match an ever growing demand so as to produce rents bearable by the slum dwellers but to guarantee the survival of such dwellers.According to Acqunye (1985), housing situation in slum areas is characterized by an inadequacy for which a combination of social, economic, demographic and technological factors are responsible. In Nigeria, statistics show quite clearly that urban dwellers are, in general, over crowded and lacking in most elementary amenities and surrounded by a deplorable urban landscape situation (Onibokun, 1985). Studies carried by the Nigerian Institute of Social and Economic Research (NISER) indicate that as large as 35 to 40 percent of urban residents in Nigeria live under slum conditions and these are mainly the low income households. These classes of households live under sub-human condition and appear forgotten. Part of the philosophical innovation to improve the conditions of man in an uncertain future will involve the initiative to alleviate the sufferings of the low income households inhabiting the slum areas. Not only that they constitute a glaring example of a society with an uncertain future, they equally lack both the will and wherewithal to improve their lives unaided.

The unequivocal position of this study is that nothing realistic and meaningful can be achieved in the alleviation of slum problems without first making a concerted effort to indentify the multi dimensional problems of the slum areas as perceived by the slum residents.Most studies available such as NISER (1985), Mitchel (1980), Omole (2000) and Agbola (2000) confined their studies on general description of the ugly slum environment, to historical emergence of slums and to geographical and sociological analysis of slum areas. Some of these studies have even advanced new approaches to slum elimination but nothing about indept identification of the ramification and the manifestations of the profile of the problems confronting the slum dwellers. It is very important that the structural profile of the socio-economic and housing problems of the slum areas are clearly identified and arranged hierarchically in order of severity as perceived by the slum dwellers. The emerged problem structure will assist in the articulation of adequate renewal programmes for the slum areas. The main aim of this study is to provide the structural profile of the existing socio-economic and housing problems plaguing the slum residents for the purpose of providing needed data base for the articulation of renewal programmes for the slum areas in Nigerian cities.

II.   AREA OF STUDY

Three (3) core slum areas namely; Coal Camp, Obiagu and Ogui Urban and two (2) peripheral slum areas namely; Jamboree and Ngenevu in Enugu City were used for this study. They contain a total of 2,040 housing units distributed as follows; 1,020 at Coal Camp, 342 at Obiagu, 283 at Ogui urban, 172 at Jamboree and 223 at Ngenevu.Coal Camp was established in 1915 for the settlement of pioneer colliery staff and their colonial management staff for the mining of coal at the foot of Udi hills. As a result of increasing demand for residential land, Ngenevu, was formed as an informal settlement for service providers to coal mining activities. Due to topographical constraints, spatial expansion of Ngenevu was constrained and this compelled the later migrants to found another informal settlement, Jamboree, South of Coal Camp. Therefore both Ngenevu and Jamboree are spontaneous settlement which developed around Coal Camp.Obiagu and Ogui urban are traditional settlements inhabited initially by the "sons of the soil". They are the initial nuclei around which the Enugu city developed in the 1920s. Right now, the two areas exhibit all the characteristics of slum environment.

III.   METHODOLOGY

Four hundred and twelve (412) copies of pre-coded questionnaire were distributed and collected as follows; 142 at Coal Camp, 90 at Obiagu, 90 at Ogui urban, 45 at Jamboree and Ngenevu respectively. A copy of the questionnaire was administered to each of the 412 households that participated in the study. A hypothesis was articulated to guide the study. The hypothesis reads thus;

H$_o$: The socio-economic and housing problems do not present any significant structure or pattern in slum areas.

Principal Components Analysis technique was used in testing this hypothesis. The technique was used to reduce or transform the set of variables into a new set of composite variables or principal components that are orthogonal to each other. Thus the 17 variables used for this test were reduced to 7 components or factors. These factors were given descriptive names on the basis of the most basic variables. Where a variable loaded highly on more than a factor, it was grouped into the factor with which it shared the greatest commonality and this invariably was where it has its highest loading. Table 1 shows details of the factor loadings of the 17 variables (Rotated component Matrix) while Table 2 shows the variable loadings and the component groupings.

Insert table 1 here.

TABLE 2: Factor groupings and Variable Loadings for Coal Camp Community

Factor	Factor Description	Variable grouping	Factor Loading
1	Housing Amenities	Toilet type	0.879
		Bathroom type	0.835
		Kitchen type	0.795
		Level of education	-0.506
2	Household size	Household size	0.854
		Occupancy ratio	0.825
3	Socio-economic Characteristics	Major occupation	-0.800
		Income per month	0.633
4	Community facilities	Source of water	0.767
5	Accommodation	Accommodation type	0.836
		Number of rooms occupied	0.640
		Accommodation status	0.560
6	Tenancy	Tenancy status	0.901
		Rent per month	0.428
7	Security	Frequency of crime	0.677
		Security arrangement	0.674

Source: Extracted from Table 1

The 7 components are Housing Amenities, Household Size, Socio-economic characteristics, Community Facilities, Accommodation, Tenancy and Security problems.

3.1 THE STRUCTURE OF THE SOCIO-ECONOMIC AND HOUSING PROBLEMS OF COAL CAMP

Identification of the structure of the socio-economic and housing problems of Coal Camp Community was based on the total variance explained by each of the factors. Table 3 shows the total variance explained by each factor before and after rotation. The 7 factors were determined at a point where the value of the initial eigen values of the 17 variables is 1 or > 1. The 7 factors account for approximately 66% of the total variation in the data input with the first factor; housing amenities, accounting for about 19%. The other 6 factors account for progressively lower proportions.

TABLE 3: Total Variance Explained for Coal Camp Community

Component	Extraction of Squared Loadings and variance Explained (unrotated)			Rotated Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.660	21.530	21.530	3.258	19.165	19.165
2	1.688	9.928	31.457	1.678	9.871	29.035
3	1.467	8.631	40.089	1.633	9.603	38.638
4	1.248	7.340	47.429	1.309	7.702	46.340
5	1.083	6.371	53.800	1.150	6.766	53.106
6	1.061	6.240	60.039	1.127	6.630	59.735
7	1.033	6.079	66.119	1.085	6.384	66.119

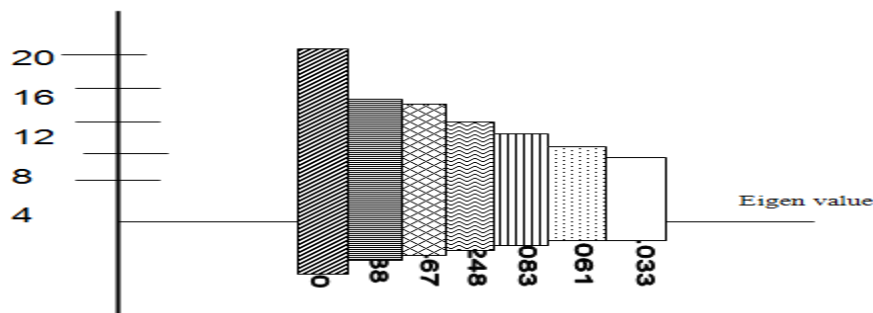**Extraction Method: Principal Component Analysis**

Decision: Ho is therefore rejected indicating that the socio-economic and housing problems of Coal Camp exhibit identifiable structure as shown on Table 4.

Table 4: Structure of Socio-Economic and Housing Problems for the Coal Camp

Factor	Description	Total Variance Explained	% of Variance	Cumulative %
1	Housing Amenities	3.258	19.165	19.165
2	Household size	1.678	9.871	29.035
3	Socio-economic characteristics	1.633	9.603	38.638
4	Community facilities	1.309	7.702	46.340
5	Accommodation	1.150	6.766	53.106
6	Tenancy	1.127	6.630	59.735
7	Security	1.085	6.384	66.119

Source: Extracted from Table 3

This structure is also presented graphically in Fig. 1 with the problems associated with inadequate housing amenities being more acute than others on the strength of the percentage of variance explained by each factor. Note that component loadings with negative signs indicate problems which the residents perceive as very severe.
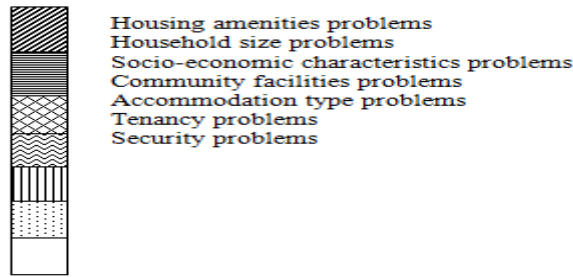
Housing amenities problems
Household size problems
Socio-economic characteristics problems
Community facilities problems
Accommodation type problems
Tenancy problems
Security problems

Fig 1: Structure of Socio-economic and Housing Problems in Coal Camp

It is interesting to note that the structure of the socio-economic and housing problems vary between the other slum areas. These are discussed as follows;

Caol Camp: At Obiagu the 17 variables were reduced to 5 components. Table 5 shows the total variance explained by each variable before and after rotation, as well as the identified structure of the socio-economic and housing problems at Obiagu.

Table 5: Total Variance Explained and the structure of the problems at Obiagu

Componen t	Description	Extraction of Squared Loadings and variance Explained (unrotated)			Rotated Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	Housing Amenities	4.361	25.653	25.653	4.079	23.993	23.993
2	Socio-economic	2.629	15.465	41.118	1.928	11.340	35.334
3	Community facilities	1.516	8.915	50.033	1.779	10.464	45.797
4	Accommodation type	1.286	7.563	57.596	1.556	9.154	54.952
5	Security	1.090	6.410	64.006	1.539	9.054	64.006

Extracted Method: Principal Component Analysis

These 5 factors explain about 64% of the total variation in the 17 variable considered. The problems of housing amenities account for about 24% of the total variations. This has to be so because at the time Obiagu was developed, it was designed as a high density layout in which housing amenities were meant to be shared by many households. With the current increase in population, which induced structural additions in form of living rooms and shop attachments to the main buildings without corresponding increases in available housing amenities, made the dearth of housing amenities an excruciating problem.

Ogui Urban: At Ogui Urban, the 17 variables considered were reduced to 6 factors. Table 6 shows the total variance explained by each factor as well as the structure exhibited by the socio-economic and housing problems at Ogui Urban.

Table 6: Total Variance Explained by each component and the structure of the problems at Ogui Urban

Component	Description	Extraction of Squared Loadings and variance Explained (unrotated)			Rotated Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	Housing Amenities	3.705	21.793	21.793	3.130	18.414	18.414
2	Socio-economic characteristics	2.021	11.889	33.682	2.067	12.157	30.571
3	Household size	1.736	10.211	43.894	1.815	10.675	41.247
4	Accommodation type	1.556	9.152	53.045	1.715	10.090	51.337
5	Security	1.395	8.205	61.250	1.404	8.257	59.593
6	Community facilities	1.045	6.136	67.386	1.025	7.793	67.386

Extraction Method: Principal Component Analysis

The 6 factors explain about 67% of the total variation in the data set. The problem of dearth of housing amenities is not as severe as it is at Coal Camp. One of the reasons is that Ogui Urban being one of the traditional cores of Enugu City was under the surveillance of sanitary inspectors from the municipal council. Because of this the area was fitted with moderately acceptable housing amenities. Worthy of note is that about 33% of their problems emanate from socio-economic, household size and accommodation issues.

Ngenevu: At Ngenevu, the 17 variables were reduced to 7 components. These loadings were used in grouping the variables into the components where they share greatest commonality. Table 7 shows the variance explained by the 6 factors before and after rotation as well as the structure of the socio-economic and accommodation problems which emerged at Ngenevu.

Table 7: Total Variance Explained by each component and the Structure of the Problems at Ngenevu

Component	Description	Extraction of Squared Loadings and variance Explained (unrotated)			Rotated Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	Housing Amenities	3.287	19.336	19.336	2.944	17.316	17.316
2	House size	1.831	10.770	30.106	1.649	9.700	27.016
3	Accommodation type	1.631	9.593	39.700	1.560	9.174	36.189
4	Tenancy	1.286	7.565	47.265	1.525	8.969	45.158
5	Crime frequency	1.223	7.193	54.457	1.263	7.428	52.586
6	Security	1.107	6.515	60.972	1.221	7.182	59.768
7	Community facilities	1.014	5.967	66.938	1.219	1.170	66.938

Extraction Method: Principal Component Analysis

About 17% of the total variation in the data input is accounted for by the problems of housing amenities. Note the low rating of crime and security problems. Ngenevu is a spontaneous settlement that has succeeded in the use of vigilante organization to reduce the incidence of crime and security problems. They as well depend on spring and river water for their water supply and therefore do not experience water problems severely.

Jamboree: Like at Ngenevu, the 17 variables were reduced to 7 components. These loadings were used in grouping the variables into components. Table 8 shows the total variance explained by each factor as well as the structure of socio-economic and accommodation problems at Jamboree.

Table 8: Total Variance Explained by each Component and the Structure of the problems at Jamboree

Component	Description	Extraction of Squared Loadings and variance Explained (unrotated)			Rotated Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	Housing Amenities	2.829	16.642	16.642	2.461	14.474	14.474
2	House size	2.243	13.192	29.834	1.930	11.352	25.827
3	Accommodation type	1.811	10.655	40.489	1.763	10.369	36.196
4	Tenancy	1.491	8.771	49.260	1.607	9.450	45.646
5	Crime frequency	1.186	6.975	56.235	1.331	7.831	53.477
6	Security	1.062	6.245	62.479	1.286	7.567	61.043
7	Community facilities	1.039	6.113	68.592	1.283	7.549	68.592

Extraction Method: Principal Component Analysis

The 7 factors account for approximately 69% of the total variation in the data input with problems of housing amenities accounting for 14.4%. As in the case of Ngenevu, crime frequency, security and community facilities problems are perceived to be lower than others by the residents. Founded as agricultural settlement, it is located close to springs and rivers that originate from Udi scarps thus ensuring regular supply of water. It has reliable vigilante organization that maintain law and order.

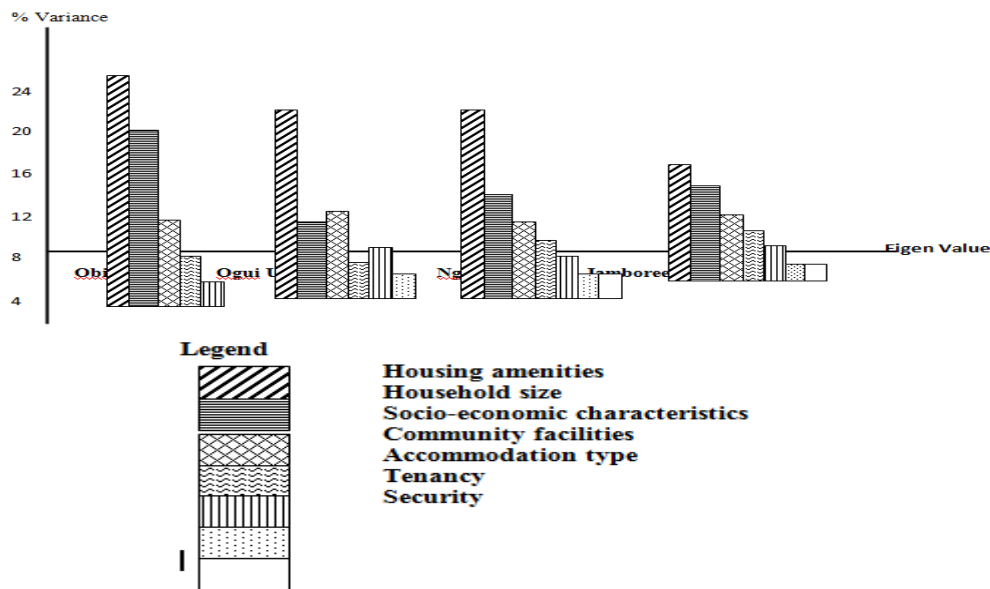These variations are graphically presented in Fig. 2.

Fig 2: Summary of the structure of Socio-economic and housing problems in the study area.

IV.   FINDINGS

Hypothesis testing shows that the socio-economic and housing problems in slum communities exhibit a structural profile. Among all the problems, the dearth of housing amenities problems such as modern toilets, bathrooms, kitchens and sewers stand out prominently. This is followed by problems created by large household sizes. Next in importance is the problems associated with socio-economic characteristics such as illiteracy or low level of formal education, poor income, menial and petty jobs. This is followed by lack of community facilities particularly hospitals, markets, electricity and water. Next is the problems associated with accommodation types. Tenement or multi-family accommodations are predominant in these slum areas. This type of accommodation creates a host of physical and social problems. Almost all the dwellers are tenants and pay rent which they feel is quite affordable in view of the current rental costs in other parts of the city. Most of them similarly appear not to be worried because they are not landlords probably because they believe nothing will make them become landlords in life. The least in the structure are tenancy and security problems. Security has to come last because the slum areas have been able to form strong vigilante group who keep watch particularly at night.   For the fact that vigilante groups have jungle justice disposition, most men of the underworld are scared of them. The structure varies slightly from one slum area to another.

V.   POLICY IMPLICATIONS AND RECOMMENDATIONS

The findings of this study portray a host of tangible housing departures from what can be considered to be normal for healthy urban living. With the type of housing deficiencies and socio-economic inadequacies identified as well as the emerged structure, demand that governments should consider the upgrading of slum areas a task that must be pursed urgently. The upgrading programme should aim at the provision of modern sanitary facilities such as adequate sewers and drainages, and other lacking housing amenities such as good toilets, latrines, kitchen and bathrooms. Accesses should be widened and tarred with all necessary furniture like street lights and bus stops well provided.Dilapidated houses should be rehabilitated by correcting all offending defects to up grade the houses to provide comfortable accommodation to the inhabitants.As well, the upgrading of the socio-economic characteristics of the inhabitants should become part of urban development programmes. Efforts should be geared towards provision of adult education opportunities for the inhabitants at subsidized rates. The existing primary schools can be used for this purpose. There is also the need for the slum dwellers to avail themselves the opportunities provided by Nigerian Directorate of Employment (NDE) to acquire vocational skills and improve their income earning capacities.   The inhabitants should also be made to understand the family benefits of family planning so as to keep their family sizes to small manageable numbers.

VI. CONCLUSION

The socio-economic and housing problems of the slum areas present identifiable structural pattern which can be of interest to the policy makers for the purpose of enhancing the lives and welfare of the slum dwellers. In a situation where there is inadequate resources to tackle all the problems at once, upgrading programme can be phased sequentially with priorities arranged in consonance with the identified structure – the most sever problems to be taken first. With such sequential adjustments over time, the lives of the slum dwellers will become drastically improved.

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