

Adopting the Cooperative Approach and Low Cost Housing Construction Technique in Ameliorating the Housing Deficit in Enugu

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Abstract

This study sought to examine the cooperative approach and low cost housing construction technique in ameliorating the housing deficit in Enugu State. The descriptive survey design was adopted for the study, which sought to collect data both primary and secondary. The population of this study is 74 registered workers cooperatives (institutional based) with membership strength of 9,109 and registered architects of 231 within the area of study as at 31st May 2017. To determine the sample size Taro Yamani (1964) formula was applied to the population size and theses sample sizes were gotten; 62 workers' cooperatives and 146 architects respectively. The reliability of the questionnaire items showed a score of 0.923. Descriptive and inferential statistical tools were employed. Results revealed that workers' cooperatives basically were involved in provision of affordable loan facilities to members for private and land purchase. Also the study showed that low cost building materials were not adopted, rather the strategy adopted by cooperatives in housing construction was rather conventional and expensive. Using collective interest of the members to access loans from mortgage banks, acquiring building materials directly from the manufacturers thereby subsidized financing costs for members and accessing funds from the state government through the collective interest of the members, were some measures implemented by cooperative societies to ameliorate barriers to housing provision. The issues of access to finance for end user and developers as well as government policy on housing were major constraints. Therefore, the study recommended that cooperative societies should explore cheaper innovative construction materials for building as well as sort a public private partnership in provision of housing for their members so as to make housing affordable/low cost.

Keywords: *Cooperative societies, low cost housing, construction techniques, housing deficits, Enugu State*

Introduction

Generally, cooperative societies are considered an advanced form of “Isusu” or “esusu” as referring to the traditional contributory mutual help association predominantly found in the villages and among people who are closely connected. Where members of such association periodically contribute a specific amount of money and the entire contribution is handed over to one person; this is done in turns until every member has collected. These traditional groups also contribute their skilled labour just as they contribute money, and offer to each other in turns. However, cooperative societies are involved in all that the traditional contributory mutual help associations have and more. Cooperatives have been viewed from various backgrounds, perspectives and stand points based on the purpose they serve and perform in a particular country. According to Odetola, Awoyemi and Ajjjola (2015) and Ezekiel (2014). Cooperatives are established by like-minded persons to pursue mutually beneficial economic interest. According to Awotide, Aihonsu and Adekoya (2012), cooperative societies in Nigeria perform multipurpose functions.

The Ohio Co-operative Development Center (OCDC) (2007) stated that Co-operative is a group-based and member-owned business that can be formed for economic and social development in any Sector. According to DFID (2005) as cited by Fapojuwo, Alarima and Abiona (2012) cooperatives have four main characteristics: first, they are formed by groups of people, who have a specified need or problem. Secondly, the organization is formed freely by members after contributing to its assets. Thirdly, the organization formed, is governed democratically in order to achieve desired objectives on equitable norms, and fourthly, it is an independent enterprise promoted, owned and controlled by people to meet their needs.

Scholars generally agree that cooperative societies have played a lot of beneficial roles in improving the welfare of its members compared to when they transacted without the cooperative. This is referred to by Ogbodo (2012) as the cooperative effect; which is the degree of extra satisfaction which a cooperative member gets by joining and transacting through the cooperative society compared to when they had not joined cooperative. One such cooperative effect is the price effect, which is when members of cooperative buys things cheaper compared to non-members due to economic of scale and bypassing of middlemen. The price effect also applies when it come to housing, hence cooperative is assumed to help in making housing affordable both in purchase and construction.

Consequently, Fadairo and Olotuah (2013) while citing Fadairo and Ganiyu, (2010) asserts that in Nigeria and by extension Enugu metropolis, over 7 out of every 10 people live below the minimum poverty level and 9 of every 10 are in the low income group. As a result are faced with a lot of difficulties and barriers as concerning housing namely; low purchasing power, supply of inadequate products (shortages), lack of related goods and services and lack of access to housing finance. Hence the broad objective of the study is adopting the cooperative approach and low cost housing construction technique in ameliorating the housing deficit in Enugu.

The specific objectives of the study are;

1. To determine activities of workers’ cooperatives in provision of housing in Enugu metropolis.
2. To determine the various low cost housing construction strategies available to workers’ cooperatives in Enugu metropolis.

3. To determine measures implemented by co-operative societies to ameliorate barriers to housing provision.
4. To assess constraints to affordable housing.

Review of related literature

The need for low cost housing

Salau (1990) describes housing as total residential environment including physical structure, all necessary services, facilities and apparatus for the general health and social well-being of man. As such, it is of utmost importance that housing needs of worker be met for their general stability to be established. There is a huge housing deficit in Nigeria and indeed Enugu metropolis. According to World Bank (2013) as cited by Iwedi and Onuegbu (2014) Nigeria housing deficit is estimated around 16 million units and it requires more than ₦56 trillion to provide the 16 million housing units to bridge the housing deficit at a conservation cost of ₦3.5 million per unit in the country. At this cost the average household cannot afford a decent abode, Hence, the need for low cost housing.

Oladapo (2001) while citing Miles et al (2000) describes affordable housing as one which can be acquired for an amount up to 30% of the household income. They further submitted that in developing countries, of which Nigeria is one, only 20% of so called higher income earners are able to afford such housing, which therefore highlights the need for a means to provide for the remaining 80%. In the same light, Inclusive Business Action Network (2016) submits that it is not easy to narrow down what affordability means in the Nigerian context. Over 50% of Nigeria's population lives on less than one US dollar a day. At the same time unemployment is continuing to rise. Approximately 20 million Nigerians are without a job and, despite the minimum wage of NGN 18,000 (USD 90) per month, income is not guaranteed for the major part of the population.

To reduce the cost of housing in Enugu metropolis, improved and low cost construction techniques should be adopted as well as embracing the cooperative approach so as to ensure ease of repayment and take advantage of economies of scale.

The need to use improved low cost building construction techniques

In order to reduce cost of housing to its barest levels, adopting improved yet low cost construction techniques is apparent.

According to Inclusive Business Action Network (2016) there are different approaches for tackling the affordable housing problem, which can be grouped under two basic categories:

- (1) The provision of new buildings and
- (2) The improvement of existing buildings including incremental upgrades.

This can be further implemented through four approaches;

- **ON-SITE/INFORMAL SETTLEMENT UPGRADING:** Meaning the Improvement of the physical, social and economic infrastructure of an existing informal settlement, without people's displacement.
- **GOVERNMENT-LED NEW PUBLIC HOUSING:** meaning Governments design, build and deliver low-income housing (for sale or rent).
- **SITES-AND-SERVICES:** meaning provision of vacant land along with basic infrastructure/ services for households to construct their own houses.
- **INCREMENTAL BUILDING:** Making land available to low-income households, who then are responsible for constructing their houses and purchasing infrastructure services. IBAN (2016).

Based on the low cost Indigenous Building Materials (IBM) techniques, Fadairo and Olotuah (2013) asserts that application of applied building research and general acceptance of locally available materials and building construction techniques for; foundation construction, walling, roofing, flooring, finishing and decoration, the problem of high cost of building materials that make it difficult for the urban poor to have their own housing would be greatly resolved in Nigeria urban centres.

Table 1: Imported Building Material for Building Construction in Nigeria and the alternative Local Building Materials

S/N	BUILDING COMPONENTS	AVAILABLE IMPORTED MATERIALS	ALTERNATIVE LOCAL MATERIALS
1	A- SUBSTRUCTURE Foundation	1. Cement – Sandcrete Blocks 2. Mild steel and high tensile steel	1. Stones and rocks 2. Stonescrete block unit
2	B- SUPER STRUCTURE Floor	1. Ceramic Tiles 2. Steel reinforcement and structural steel 3. Concrete	1. Tiber 2. Bamboo floor and foist 3. Stones and rocks
3	Structural Frames and Walls	1. Cement sandcrete blocks 2. Lime 3. Steel beams and column 4. Hardboard 5. Fibre glass 6. Bricks 7. Fibre glass 8. Plywood 9. Steel reinforcement 10. Particle Board	1. Plywood 2. Partial Board 3. Unstabilized Earth 4. Fired/unfired clay bricks 5. Hardwood 6. Bamboo walls and trusses 7. Stones and rocks 8. Stabilized laterite earth bricks
4	Roofing	1. Steel reinforcement 2. Aluminum sheets 3. Cement concrete roof 4. Fibre glass 5. Galvanized zinc sheets 6. Steel nails structural 7. Steel section	1. Bamboo roof tiles 2. Timber 3. Aluminium sheets 4. Zinc sheet 5. Asbestos sheet 6. Steel nails
5	Ceiling	1. Steel flat sheet 2. Plaster of Paris (P.O.P) 3. Fibre Boards 4. Timber 5. Plastic sheets 6. Aluminium extrusion sections	1. Plywood 2. Hardwood 3. Fibre matrix ceiling Boards 4. Asbestos sheet
6	Doors and Windows	1. Aluminium extrusion Section 2. Steel sections 3. Glass	1. Steel nails 2. Plywood 3. Hardwood 4. Wooden shutters

		<ol style="list-style-type: none"> 4. Fibre board and louvres 5. Particle board 6. Ironmongery 7. Steel nails 8. Plywood 9. Hardwood 	
7	Electrical Fitting	<ol style="list-style-type: none"> 1. Lift and other electrical Appliance 2. Copper wire 3. PVC pipes 4. Electrical lamps 5. Copper pipes 6. Aluminium wire 	<ol style="list-style-type: none"> 1. Moulded wooden lamp holders 2. Aluminium wire 3. Timber poles 4. Copper wire 5. Electrical lamps
8	Plumbing	<ol style="list-style-type: none"> 1. Water heater 2. PVC pipes and fittings 3. Wash hand basin 4. Water closet 5. Ceramics fittings 6. Steel bath 7. Steel pipes and fitting 	<ol style="list-style-type: none"> 1. Paint 2. Hardwood paneling 3. Marble 4. Terrazzo 5. Earth plastering 6. Sawdust/cement floor and wall tiles 7. Bricks tiles for floor
9	Finishing	<ol style="list-style-type: none"> 1. Paints 2. Marble 3. Wall paper 4. Terrazzo 5. Fibre Board 6. Plaster 7. Brick tiles 8. Mosaic tiles mineral 9. Plastic sheets 10. Ceramic tiles 	<ol style="list-style-type: none"> 1. Ceramic tiles 2. Paints 3. Hardwood paneling 4. Marble 5. Terrazzo 6. Stucco plastering 7. Core and bamboo as partition and wall paneling 8. Sawdust/Cement floor and wall tiles 9. Earth plastering

Source: Kayode and Olusegun (2013).

The Cooperative Society: The Cooperative Advantage

The International Cooperative Alliance (1995) defines cooperative society as an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspiration through a jointly owned and democratically controlled enterprise.

According to Sapovadia and Patel (2013), workers cooperative society is a firm owned and controlled by its workers. The right of ownership is derived inherently by being workers of the firm. Workers cooperative is a form of organization for the employment of a group of workers who are associated with one another for working together and joint reward by doing business activities. The cooperative society brings a lot of benefits otherwise referred to as the cooperative advantages; they include producing goods, providing services like managing funds, providing technical knowledge to increase bargaining powers and earn livelihood of members.

The workers cooperative has unique advantages to take the opportunities stated in Table 2 below;

Firstly, workers cooperative societies has a very stable savings structure, based on ‘deduction at source’, which means that every member has his monthly deductions taken before his/her salary is paid as such making it possible for the society to service that part of the population whose earnings are less than ₦1.57 million and can’t afford housing mortgage. Also mitigate housing construction and self-build Investments in housing micro-finance and other aspects of the incremental housing delivery chain.

Secondly, other forms of cooperative societies can attend to the part of the population that is unbanked, providing innovative financial products and services.

Thirdly, due to the fact that cooperative societies are grassroots’ based; through vertical and horizontal integration provide market for local alternative building materials as such strengthening local building materials industry: Job creation and skill development.

Table 2: Market facts and Opportunities

FACTS	OPPORTUNITIES
Parts of the population earning above ₦ 1.57 million (US\$ 8,000) per annum	Huge mortgage debt gap. Estimated mortgage finance requirement needed for Nigeria: ₦ 60 trillion (US\$ 300 million)
Parts of the population where the bulk earns below ₦ 1.57 million (US\$ 8,000) per annum	Housing strategies that allow for incremental housing construction and self-build Investments in housing micro-finance and other aspects of the incremental housing delivery chain are very likely to find demand
Part of the population that is unbanked (36.9 million adults or 39.5 % of adult population)	Providing innovative financial products and services this represents a large business opportunity for the private sector
Reliance on cement as primary building material (construction with sandcrete blocks makes up 90% of the construction market)	Market for alternative building materials
Very high reliance on imported construction components (90% including electricity are imported)	Strengthening local building materials industry: Job creation and skill development

Adapted based on GIZ (2014)

Methodology

The descriptive survey design was adopted for the study, which sought to collect data on the opinions of participants with a view to examining the adoption of cooperative approach and low cost housing construction technique in ameliorating the housing deficit in Enugu.

The population of this study is 74 registered workers cooperatives (institutional based) with membership strength of 9,109 and registered architects of 231 within the area of study as 31st May 2017.

To determine the sample size Taro Yamani (1964) formula was applied to the population size and Bowler’s proportional allocation formula used to distribute questionnaires to the selected cooperative societies. The formula is stated as follows.

$$n = \frac{N}{1 + N(e)^2}$$

Where n = sample size; N = Population of the study; Error estimate at 5% (0.05); 1 = Constant.

Cooperative Societies

$$n = \frac{74}{1 + 74 (0.05)^2}, \quad n = \frac{74}{1 + 74 (0.0025)}, \quad n = \frac{74}{1 + 0.185}, \quad n = \frac{74}{1.185},$$

n (sample size) is approximately = 62

Registered Architects

$$n = \frac{231}{1 + 231 (0.05)^2}, \quad n = \frac{231}{1 + 231 (0.0025)}, \quad n = \frac{231}{1 + 0.5775}, \quad n = \frac{231}{1.5775},$$

n (sample size) is approximately = 146

Sample Size Table

	Cooperatives societies	Architects	Total
Sample size	62	146	208

The SPSS software was used to evaluate the reliability of the questionnaire items. The result shows that reliability scale test for the items of the questionnaire score is 0.923 (Cronbach’s Alpha). This thus affirmed that the research instrument used for the study is reliable as it is more than the least accepted reliability score of 0.7. Meanwhile, one hundred and ninety eight (198) questionnaires were returned and analyzed.

ANALYSIS AND FINDINGS

Table3 Activities of workers’ cooperatives in provision of housing in Enugu metropolis

Activities of workers’ cooperatives	N	Mean	Std Dev	Rank
Provision of affordable loan facilities	198	4.50	.732	1
Provision of loan for purchase of land	198	3.67	.977	2
Cooperative collective purchase of land for members	198	3.12	.852	3
Provision of loan facilities for construction of houses	198	2.93	.837	4
Provision of loan for renovation	198	2.43	.968	5
Cooperative assist in accessing housing loan from banks and government agencies for members	198	2.17	1.107	6
Cooperative construction of houses for sales to members	198	1.90	.876	7

Source: Field survey 2017

Table 3 above shows the activities of worker’s cooperatives in the provision of housing in the study area. Provision of affordable loan facilities is ranked 1st amongst activities of workers’ cooperatives in provision of housing with a mean of 4.50. Provision of loan for purchase of land is ranked 2nd with a mean of 3.67. Cooperative collective purchase of land for members is ranked 3rd with a mean value of 3.12. Provision of loan facilities for construction of houses is ranked as 4th in activities of workers’ cooperatives in provision of housing in Enugu metropolis with a mean of 2.93. 5th is provision of loan for renovation with a mean of 2.43. Cooperative assist in accessing housing loan from banks and government agencies for members is ranked 6th with a mean of 2.17. While cooperative’s construction of houses for sales to members was ranked 7th with a mean value of 1.90.

Table4 Affordable/low cost housing construction strategies available to workers' cooperatives in Enugu metropolis.

	N	Mean	Std. Dev	Rank
Incremental building	198	3.39	1.503	1
Sites-and-services	198	3.31	1.478	2
Government-led new public housing	198	2.42	1.105	3
On-site/informal settlement upgrading	198	1.97	.836	4

Source: Field survey 2017

From table4 above Number 1 ranking strategy available for affordable/low cost housing to workers' cooperative members is incremental building strategy with a mean of 3.39, meaning that land is made available to members who are responsible for the construction of their houses. Sites-and-services strategy is ranked 2nd with a mean of 3.31, meaning that members are provided with land and some basic infrastructure/ services for them to construct their own houses. Government-led new public housing and On-site/informal settlement upgrading is ranked 3rd and 4th respectively, with a mean of 2.42 and 1.97 respectively.

Table5 Measures implemented by co-operative societies to ameliorate barriers to housing provision.

Measures implemented by co-operative societies to ameliorate barriers to housing	N	Mean	Std Dev	Rank
Encouraging, accumulating and augmenting members' savings.	198	4.24	.830	1
Using collective interest of the members to access loans from mortgage banks	198	3.97	.917	2
Acquiring building materials directly from the manufacturers thereby subsidized financing costs for members	198	3.11	1.297	3
Accessing funds from the state government through the collective interest of the members	198	2.15	.736	4
Removing installment increment in building cost by ensuring collective construction whereby materials are purchase in bulk	198	2.11	.701	5
Using collective in-put of member skills in the construction process.	198	2.01	.716	6

Source: Field survey 2017

Table 5 above shows encouraging, accumulating and augmenting members' savings is ranked 1st with a mean of 4.24. The measures implemented by co-operative societies to ameliorate barriers to housing provision in the study area. Using collective interest of the members to access loans from mortgage banks is ranked 2nd with a mean of 3.97. Acquiring building materials directly from the manufacturer are thereby subsidized financing costs for members is ranked 3rd with a mean value of 3.11. Accessing funds from the state government through the collective interest of the members, 4th, with a mean of 2.15. 5th is removing installment increment in building cost by ensuring collective construction whereby materials are

purchased in bulk, with a mean of 2.11. 6th is using collective in-put of member skills in the construction process with a mean of 2.01.

Table6 Constraints to affordable housing.

Constraints	N	Mean	Std Dev	Rank
Access to finance(end users)	198	4.08	.763	1
Access to finance(developers)	198	3.71	1.058	2
Government policy affecting provision of housing	198	3.59	.961	3
Lack of political will	198	3.48	.696	4
General understanding of the housing industry	198	2.68	.899	5
Cost of building materials	198	2.67	.906	6
Access to Land	198	2.30	.710	7
Availability of infrastructure	198	2.14	.954	8
Corruption	198	1.76	.623	9
Internal management issues in Cooperative societies	198	1.68	.829	10

Source: Field survey 2017

Table 6 captures the constraints to affordable housing. Access to finance to end users is ranked 1st of all the constraints to affordable housing, with a mean of 4.08. Access to finance to developers is ranked 2nd with a mean value of 3.71. Government policy affecting provision of housing is ranked 3rd with a mean of 3.59. Ranked 4th is Lack of political will, with a mean value of 3.48. General understanding of the housing industry is ranked 5th with a mean of 2.68. Cost of building materials is ranked 6th of the constraint to affordable housing, with a mean value of 2.67. Ranked 7th is access to Land with a mean value of 2.30. Availability of infrastructure is ranked 8th with a mean of 2.14. Corruption is ranked 9th with a mean value of 1.76. While internal management issues in Cooperative societies is ranked 10th with a mean value of 1.68.

Conclusion

The study was directed at determining the activities of workers' cooperatives, affordable/low cost housing construction strategies, constraints to affordable housing and measures implemented by co-operative societies to ameliorate barriers to housing provision in the study area. The study shows that workers' cooperatives basically were involved in provision of affordable loan facilities to members for private and land purchase. Also the study showed that low cost building materials were not adopted, rather the strategy adopted by cooperatives in housing construction was rather conventional and expensive.

Using collective interest of the members to access loans from mortgage banks, Acquiring building materials directly from the manufacturers thereby subsidized financing costs for members and accessing funds from the state government through the collective interest of the members, were some measures implemented by co-operative societies to ameliorate barriers to housing provision. The issues of access to finance for end user and developers as well as government policy on housing were major constraints.

Therefore, cooperative societies should explore cheaper innovative construction materials for building as well as sort a public private partnership in provision of housing for their members so as to make housing affordable and low cost.

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