

PROJECT MANAGEMENT APPROACH TO PUBLIC LOW INCOME HOUSING

C. P. Ogbu and C. C. Adindu

Department of Quantity Surveying, Abia State Polytechnic, Aba, Nigeria

Abstract

This research assesses the impacts of project management (PM) variables on the socio-economic formation of public low-income housing (LIH) users in Abia and Imo States. Primary Data were obtained using two structured questionnaires; one for each of the LIH providers and users. Data analyses employed a combination of multiple regression, correlation and ANOVA methods. The results show that 95.1% of the socio-economic impacts of LIH projects can be explained using PM variables, and that the model: $SEI = .085 + 0.25PS + 0.620PPC + 0.165PC + 0.217PT - 0.003PQ$ gives the relationship between the socio-economic impact of public low income housing (LIH) and the PM variables: project scope control (PS), project planning (PPC), project cost control (PC), project time control (PT) and project quality control (PQ). Findings from the study show that project quality (PQ) does not significantly affect the socio-economic impacts of public LIH projects, while project planning and control (PPC) has the most socio-economic impact on LIH projects. The study recommends that formal project planning and control should be adopted and intensified as a mechanism for optimizing the socio-economic impact of public LIH housing projects, while project quality should be improved on for higher standard of living and structural fitness of LIH projects.

Keywords: Project management, Socio-economic impact, Public, Low- income housing

Introduction

The Nigerian housing problem has been that of inadequacy of stock, rather than that of acceptability of provision. This assertion is due to increasing levels of urbanization resultant from rural-urban migration over the last two decades, with homelessness becoming common place (Report of the Vision 2020 National Technical Working Group, 2009; Ajanlekoko, 2001). Additionally, demand for housing so outstrips supply in geometric proportions that whatever is supplied, irrespective of quality or quantity is demanded. Studies show that aside from countries like Burundi, Rwanda, Kenya, Uganda and Burkina Faso with urban population rates of 5%, 5%, 14%, 15% and 15% respectively, Nigeria, in spite of her urban population rate of 36.2%, ranks among the least urbanized nations of the world, especially when compared with Libya, 86%; Angola, 42%; South Africa, 57%; United Kingdom, 90%; and USA, 75% (Adindu and Oyoh, 2011). Various housing policies have evolved in Nigeria over the decades with adjustments aimed at addressing the acute shortage of housing infrastructure including direct construction of houses using the project management approach (Wahab, 1985; Olotuah and Bobadaye, 2009).

In spite of the various housing programs and policies, there appears to be an oversight of the impacts of existing public housing stock on the actual beneficiaries. It is posited in literature that housing not only provides physical shelter, but also has significant impact on the lives of the dwellers in terms of skills enhancement, income generation, security, health, self-confidence and human dignity (Rahman, 2012, Afolayan, 2007, Adenubi and Windapo, 2007). LIH projects are executed using PM teams operating at various provider institutions being the agencies of the federal, state and local governments (Mba, 1992 and Iroegbu, 2006). Based on this, it is assumed that the socio-economic impacts of public housing, including those exclusively meant for the low income group (LIG), are provider determined. Ibrahim (2008), Abdullahi and Aziz (2010) and Nwanekezie (2006) raise concerns that these organizations do not usually have adequate skills and competence to effectively initiate, develop and monitor the progress of housing projects, even with the support of consultants. The LIH provider's PM competences are therefore suspect, and require examination in the context of their users' perception and impacts.

The view that housing is mere shelter is no longer contemporarily acceptable. Housing consists of essential services and facilities (Omole, 2008, Fagbohun, 2007). These services and facilities constitute determinant variables of the resultant socio-economic status of the end users of the LIH. Housing users' socio-economic wellbeing is inextricably linked to their housing characteristics which are determined by the provider of the housing at the PM stage of the project. Considering the non-participation of users in government's direct house construction programs, it is pertinent to question the impact of the public LIH foisted on the user by the providers. This perspective has hardly been used in assessing the success of the few completed LIH projects in Nigeria. Ilesanmi (2012) points to the paucity of critical, in-depth evaluation of public housing products. Therefore, the primary objective of this paper is to assess the impact of PM variables on the socio-economic formation of public LIH users. The areas of study are Abia and Imo States of Nigeria.

Low-income housing and low-income groups

Conceptually, a distinction can be made between users and providers of housing projects for the LIH. Practically, their interests on the project outcome differ. Kernohan and Gray (1992) explain that users of a facility are individuals or groups with presumed right of use to the facility. This entails ability to perform activities within and around the building for specified objectives. Users are groups intended to be served by the project. Projects are complex non-routine, one-time efforts limited by time, budget, resources and performance specifications designed to meet customer needs (Gray and Larson, 2006). Oberlender (2000) perceives it to be an endeavor that is undertaken to produce the results that are expected from the requiring party. These two definitions refer to 'customer needs' and require parties. LIH 'customers' or 'requiring parties' in the context of this paper are the LIH beneficiaries. The customer and the provider however operate at different phases of a project, namely utilization and PM stages respectively. These distinct phases of a project have been clearly explained by Munns and

Bjeirmi (1996). At the utilization stage, the housing dweller expects utilities from his house beyond those of basic shelter. The extent of enjoyment of these utilities determines users' acceptability of the housing.

In relation to housing projects, the concept 'low-income group' does not have a universal definition. Oladapo (2001) observes that the term may mean different things to different people. 'Low income' is a relative term, and its meaning may differ within a country and between countries and continents to reflect differing national economies. In the USA for instance, housing can be considered affordable for a low or moderate – income earner if that household can acquire use of the housing unit (owned or rented) for an amount up to 30% of household income (Miles, Berens and Weiss, 2000). Affordable housing and LIH mean different things. The Freedictionary (2012) gives the meaning of LIH as 'any housing that is limited to occupancy by persons whose family income does not exceed certain preset maximum levels'. The US Department of the Treasury Internal Revenue Services defines LIH as "any project in which 20 percent or more of the units are both rent restricted and occupied by persons whose income is 50 percent or less of the area median gross income" or "one in which 40 percent or more of the units are both rent restricted and occupied by persons whose income is 60 percent or less of the area median gross income".

A clear definition for the LIH does not exist for Nigeria. The National Housing Policy of Nigeria declares that over 90% of the country's population is made up of the poor and LIH. This assertion is further supported by Adindu and Oyoh (2001), which states that "over 70% of Nigeria's population constitutes the poor and low income earners, thus, a major challenge for housing provision to this vulnerable group". Studies show that 83.9% of Nigerians live within the \$2(two dollars) mark; indicating that this number of people cannot afford a house of one million Naira (N1,000,000.00) even with a 25 year, interest free mortgage facility (Social Housing Advocacy Group (SHAG) Nigeria, 2012). This implies that users of public LIH in Nigeria are mostly those with formal employment of middle management cadre or above. Abdullahi and Aziz(2010) posits that LIH

programs in Nigeria have woefully failed to afford home ownership to the Nigerian LIG's. They are always hijacked by the high income earners who buy up the houses and let them at exorbitant prices to the LIG (Adenubi and Windapo, 2007; Mba, 1992). This has compounded the meaning of LIH for Nigeria. It is common knowledge that Nigeria nation failed to implement the United Nations' declaration of shelter for all by the year 2000. It was estimated that from the Fourth National Development Plan period, 5 million new housing units will be required as addition to existing urban stock, and a corresponding 32 million as addition to existing rural stock (Adindu and Oyoh, 2011). Today, more than a decade later, LIH appears to be more conceptual than operational. Wasiu (2005) identifies the following as major problems militating against the attainment of LIH viz: problems of land acquisition from private land speculators, legal and technical hitches associated with land use decree of 1978, cost of building materials, eligibility of access to national housing fund loan and limited purchasing power of the national minimum wage.

Apparently, the term LIH refers to a housing product which offers minimum livability features, and not necessarily one that is within the financial reach of the LIG in the context of its popularly usage in Nigeria. Citing the Fourth National Development Plan (1980 – 1985), Adenubi and Windapo, (2007) declare that LIH refers to 1-bedroom bungalow houses. This assertion supports the argument of minimum livability features.

LIH providers

Housing providers are individuals or groups who promote or facilitate the construction of a building, but without a presumptive right of use to the building. Often times, the interests of infrastructure providers are transitory and vary during one or more phases in its economic life: inception, construction, occupancy or disposal (Kernohan and Gray, 1992). Iroegbu (2006) identifies two types of LIH providers as public and private sector stakeholders. For public LIH projects, private sector stakeholders include contractors and consultants engaged by the public sector for the execution of LIH projects. The various levels of government, government ministries, parastatals, agencies and departments involved in the PM of

housing projects constitute the public sector stakeholders. LIH providers occupy the domain of PM, while the users occupy the domain of utilizers. Existing literature has not adequately addressed the linkage between these two domains. Some researchers have expressed cynicism over the PM competence of the housing providers. Citing Wahab (1976), Olurin (2007) states that planners' and designers' wrong value judgment in terms of space and structural standards are responsible for the low production of housing. On the other hand, Abdullahi and Aziz (2010) observed improper procedure, inadequate planning and implementation as bane to public stakeholders' mass housing schemes. Other drawbacks include the proliferation of quacks and small contractors having few skilled personnel in the various trades (Nwanekezie, 2006). Comparatively, the implementation of PM tools and techniques in public LIH is still in the early stages of development in Nigeria (Abbasi and Al-Mharmah, 2000). This study investigates the relationship between the PM competences of the provider and the socio-economic status of the user of LIH projects.

The project approach to LIH provision and project management

The project approach to development involves direct investment in physical infrastructure, often characterized by the factors identified by Hunadle and Rosengard (1983) as short time horizon, inability to pick up recurrent costs, a tendency to either by-pass or fragment local institutions and neglect the need for local capacity building. The approach enables the intervening provider of infrastructure to directly undertake physical construction of the facilities, rather than empower the beneficiary for the construction. The advantages of projects are that they are designed to produce a measurable and visible output for a pre-determined investment. They are also subjected to established administrative procedures, and can be targeted at specific social groups. The project approach utilizes the PM skills of the providers in the attainment of project's objectives. Pinto (1998) views the triple project constraints namely time, money and performance as restrictive. He posits that these measures of success are internal to the providing organization, and do not capture the external interest group and suggests the inclusion

of a fourth constraint: customer satisfaction. Dolan (2005), corroborating the views of Pinto (1998) states that today's project managers must not only manage project activities, but also take on the sale function of managing client relations. There is no benefit if a project is successfully completed according to the triple constraints, and no one buys the project outcome – services or products. In housing delivery projects, instances of such will include where housing units are completed, but lack of effective demand from the customers keeps the houses out of use as characteristic of most Nigerian metropolitan areas. Unlike the other constraints, customer satisfaction cannot be measured until user's feedback upon occupation of the facility. It is the interplay of the other constraints that determines or establishes the satisfaction of the occupants.

Socio-economic impact parameters

The United Nations Centre for Human Settlement (Habitat) (UNCHS [Habitat], 2006) declares that social impact of shelter projects are generally viewed as coincidental, and maintains that the degree to which a local 'multiplier effect' of social and economic development is achieved will depend on the effort put into achieving it. Socio-economic impacts therefore have to be identified and consciously provided for in LIH projects. Constituents of the socio-economic impacts of housing projects are not precisely agreed upon in literature. Van-Wyk (2009) suggests two categories of parameters for the study of socio-economic impact of developments namely (A) *social parameters* including: (1) Number of new houses built in the province (2) Subsidies granted in the province (3) Title deed transfer (4) Vulnerable beneficiaries (women, the youth, the disabled and other vulnerable people) through house transfer or new houses allocated, employment or company engagement (B) *economic parameters* including: (1) jobs created/number of people employed (2) emerging contractors engaged (3) local material suppliers involved (4) SMMEs employed and established, and (5) Home-based entrepreneurs. In an expository assessment of experience with the project approach to shelter delivery for the poor in Colombia, Indonesia, Sri Lanka, Turkey and Zimbabwe, UNCHS (Habitat) (2006) used the following criteria to assess socio-economic impacts: (1) impact at the local level, (2)

Contribution to residential stability, (3) Proximity of projects to employment locations, (4) Job creation at the local level, (5) Impact of projects on the development of community based NGOs, (6) Acceptability of project components to project beneficiaries. Omole (2010), in assessing the socio-economic life of slum dwellers in Akure, Ondo State Nigeria, used *building characteristics, distribution of sanitary services, distribution of general facilities, environmental related problems and likely causative factors* as parameters. From the foregoing, socio-economic impacts of housing are conceptualized from a plethora of factors related to the social, economic, health and psychological wellbeing of housing dwellers. This study aims at determining how much the socio-economic impacts of LIH projects have been influenced by the control of the PM variables being investigated, namely: *planning, time, cost, quality, and scope*.

Research methodology

Area of the study

The areas of study are Abia and Imo States both in South-Eastern Nigeria. Abia State was created out of old Imo State on 27th August, 1991. The state has a land area of 6,320km², a 2006 population of 2, 833, 999 persons, a population density of 450/km² and lies on latitude 5°25' N and Longitude 7°30' E (Wikipedia, 2012a). Imo State's geographical coordinates are 5°29' N and 7°2' E. Imo State is bounded in the north by Anambra State, in the south by Rivers State, in the east and west by Abia and Delta States respectively. The state has a 2006 population of 3,934,899 persons, a land area of 5,530km² and a population density of 710/km² (Wikipedia, 2012b).

The National Population Commission (2006) gives the types of housing units in Abia and Imo States as shown in Table 1 below.

Table 1: Types of housing units in Abia and Imo States

State	Total	House on a separate stand or yard	Traditional/Hut structure made of traditional material	Flat in block of flats	Semi-detached house	Rooms /Let in house	Informal/Imp rovised dwelling	other
Abia	605987	412533	17396	79572	19317	71833	1501	3835
Imo	837195	595095	22290	89045	44691	48357	4601	33116

Source: National Population Commission (2006)

Data collection

Data for this study were obtained from primary and secondary sources. Secondary data were obtained from institutions of government involved in past LIH projects in the research area. The primary data were obtained using two structured questionnaires randomly administered on the two categories of stakeholders in LIH projects – providers and users.

Categories of respondents covered by this study

Category I – Providers of LIH projects (government and private sector stakeholders)

This category includes staff of state ministries, departments and agencies of government concerned with housing, and their private sector consultants and contractors. A total of 140 structured type-A questionnaires were purposively distributed to this category of respondents.

Category II – users of public lih projects

This category of respondents consists of occupants/users (residents) of the LIH estates in the research area. The housing projects chosen for this study (category II respondents) were selected based on the following characteristics:

- Located in urban areas
- Explicit about their focus on the shelter needs of the low-income groups
- Completed and evaluated (to enable assessment that could lead to policy changes)

Similar criteria were used for selection of housing projects for a study of low-income housing delivery by UNCHS (Habitat) (2006).

Table 2: Housing Estates in Abia State used in this study

s/n	Name of Hosing Estate	No. of units	No. of units completed	Remarks
1.	Amauba Housing Estate Umuahia (Phase 1)	26	26	Completed (4bedrooms and 5bedrooms flats) Sold N8 – N10m
2.	Amauba Housing Estate Umuahia (Phase 2)	100	36	36 completed (1bedrooms semi detached) N2.0M to be paid through Mortgage finance
3.	Ehimiri Housing Estate Umuahia	439	439	Completed (35 2-bedrooms, 404 3-bedrooms (completed) Cost of cost. 1.5m – 1.9m
Total Number of Units		1140	501	

Source: Author’s field Report (2012)

Table 3: Housing Estates in Imo State used in this study

s/n	Name of Housing Estate	No. of units Completed
1.	Prefab extension I	71
2.	Prefab extension II	56
3.	Uratta Road Housing Estate	306
4.	Trans-Egbu Housing Estate	239
5.	Umuguma Housing Estate Area 'S'	30
	Total Number of Units	702

Table 5 Categories 1 Respondents' Qualifications

Years of Experience	Number of Respondents	% of Respondents
Post Graduate Degree	11	9.17
First Degree	60	50.00
Professional Qualification	28	23.33
HND	15	12.50
ND	6	5.00
SSCE/Others	0	0.00
<i>Total</i>	<i>120</i>	<i>100</i>

Source: Author's field Report (2012)

Return of questionnaires/data analysis

120 copies of questionnaires for Category 1 respondents were accepted as valid for analysis representing a response rate of 85.71%, while 150 copies for Category 11 respondents were accepted as valid representing a response rate of 50% response rate. The returned but invalid questionnaires were discarded and as such, disregarded in the study. Valid data obtained for the study were analyzed using a combination of statistical tools including Coefficient of sample correlation, ANOVA, multiple regression analysis and descriptive statistics.

Results presentation and discussion

Category 1 Respondents' Years of PM Experience

Table 4: Category 1 Respondents' Years of PM Experience

Years of Experience	Number of Respondents	% of Respondents
0-5 years	25	20.83
6-10 years	62	51.67
11-15 years	17	14.17
16-20years	12	10.00
Over 20 years	4	3.33
<i>Total</i>	<i>120</i>	<i>100</i>

Source: Author's field Report (2012)

The study questionnaire sought respondents' years of practical PM experience, and the results obtained shown in Table 4. The results of the study show that most of the respondents (n=62, 51.67%) were those with 6-10 years of experience in PM, while respondents with over 20 years PM experience were the fewest (n=4, 3.33%) apparently due to their executive management engagements.

Category 1 respondents were asked to indicate their qualifications and results show (Table 5) that majority of the respondents (n=60, 50.00%) are first degree holders. This suggests that respondents are informed about PM issues, hence the reliability of their questionnaire responses.

Socio-economic impact of public LIH projects

Table 6: Model Summary for the socio-economic impacts of LIH projects in Abia and Imo States

Source: Author's field Report (2012)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.975	.951	.951	.31193	.951	231.50	5	5	.000

a. Predictors: (Constant), PQ, PPC, PS, PC, PT
 b. Dependent Variable: Socioeconomic

Table 7: Correlations of the predicted and actual impacts of PM on the socio-economy of LIH users in Abia and Imo States

		Socio-economic	Unstandardized Predicted Value
Socio-economic	Pearson Correlation	1	.975(**)
	Sig. (2-tailed)		.000
	N	600	600
Unstandardized Predicted Value	Pearson Correlation	.975(**)	1
	Sig. (2-tailed)	.000	
	N	600	600

** Correlation is significant at the 0.01 level (2-tailed).

Source: Author's field Report (2012)

Table 6 shows that the five (5) variables: project scope (PS), project planning and control (PPC), project cost (PC), project quality control (PQ) and project time (PT) explain 97.5% of socio-economic impact of LIH projects. The coefficient of sample correlation (r), (Table 7) confirms that a strong positive association ($r=0.975$) exists between the

predicted and actual socio-economic impacts. Table 6 further shows that 95.1% of the variations in the ability of the independent variables to predict socio-economic impacts are explained by the joint action of the variables, while the possible error in the variables is 0.31193.

Table 8: Summary of coefficients of explanatory variables for the socio-economic impact of LIH projects

Variables		Coefficients	Standard Error	T (df=594)	Sig. (p)
Intercepts	0	.085	.052	1.618	0.106
X ₁ = PS	1	.025	.025	2.418	0.016
X ₂ = PPC	2	.620	.024	25.819	.000
X ₃ = PC	3	.165	.033	5.027	.000
X ₄ = PT	4	.217	.042	5.209	.000
X ₅ = PQ	5	-.003	-.003	-.292	0.771

Source: Author's field Report (2012)

Table 9: Anova Test of the Significance of the Independent Variables in Explaining the Dependent Variable

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1125.476	5	225.095	2313.350	.000(a)
	Residual	57.798	594	.097		
	Total	1183.273	599			

a Predictors: (Constant), PQ, PPC, PS, PC, PT

b Dependent Variable: Socioeconomic

SEI = .085+ 0.25PS+ .620PPC + .165PC +.217 PT-.003PQ

Source: Author's field Report (2012)

Test of hypotheses

To establish the model's significance, it is necessary to test whether in fact; the coefficients of the explanatory variables are not equal to zero. The following hypotheses were formulated and tested:

Hypothesis 1

H₀: β₁ = β₂ = β₃ = β₄ = β₅ = 0

H_a: β₁ ≠ 0, β₂ ≠ 0, β₃ ≠ 0, β₄ ≠ 0, β₅ ≠ 0

H₀: The explanatory variables have no significant effect on the actual variation in the socio-economic impacts of housing delivery projects in Abia and Imo States.

H_a: At least one of the explanatory variables has significant effect on the actual variation in the socio-economic impact of housing delivery projects in Abia and Imo States.

With reference to Table 9, $p=0.000$, and $\alpha = 0.05$, therefore we reject H₀, accept H_a, and conclude that at least one of the explanatory variables has significant effect on the actual variation in the socio-economic impact of housing projects for the LIGs in the research areas. A significant relationship exists between the explanatory variables and socio-economic impact of housing delivery projects in Abia and Imo States.

The Resulting estimated model can be presented as:

Test of the influence of the explanatory variables on the socio economy of Respondents – t-test

Hypothesis 2

H₀: The socio-economic impact of LIH delivery projects in the research area is not significantly affected by each of the explanatory variables under study.

H_a: The socio-economic impact of LIH delivery projects in the research area is significantly affected by each of the explanatory variables under study.

It is necessary to conduct a t-test to determine the extent of contribution of each of the explanatory variables to the change in the socio-economic impact of LIH projects: the F-test tested only the significance of the model as a whole. Two levels of significance, namely 1% and 5% with degrees of freedom, N – K, i.e. 600 – 5 = 595 were considered.

T-tabulated =

1% = 2.326

5% = 1.645

Table 8 above shows that all the variables under study contribute significantly to the socio-economic impact of LIH delivery projects in the

research area except project quality control PQ ($p=0.771$).

Discussion of findings

The model for the economic impact of LIH project is:

$$SEI = .085 + 0.25PS + 0.620PPC + 0.165PC + 0.217PT - 0.003PQ$$

This study shows that the independent variables: project scope (PS), project planning and control (PPC), project time control (PT), project cost control (PC) and project quality control (PQ) explain 95.1%, ($R^2 = 0.951$) of the variations in the socio-economic impacts of public LIH projects obtained by the project approach. Only about 4.9% of the variations remain unexplained by the PM variables. This means a larger proportion (95.1%) of what is obtained as socio-economic impact at the end of a public LIH project is dependent on how the PM variables were conceived and applied. The low standard error of the estimate (0.31193) indicates that the model fits well. The sample coefficient of correlation ($r = 0.975$) which is close to +1 suggests that a strong positive correlation exists between the actual and predicted socio-economic impacts using the model.

ANOVA test confirms that the model is valid at $\alpha=0.05$: at least one of the coefficients of the independent variables is not equal to zero (see Table 9), which implies that the independent variables are linearly related to the socio-economic impact of public LIH projects. The t-test (Table 8) further confirms that each of the independent variables contributes significantly to the socio-economic impacts of public LIH delivery projects (except project quality control) with the implication that none of the PM factors would be neglected when conceiving LIH projects.

In the model, the intercept $\beta_0=0.085$. This represents the socio-economic impact of public LIH projects when all of the PM variables are theoretically neglected. The relationship between project scope and socio-economic impact is described by $\beta_1=0.25$. This is the average increase in socio-economic impact for every unit increase in the project scope, if all the other independent variables remained constant. For every unit increase in project scope therefore, the socio-economic impact of the LIH project increases by 25%. Similar explanations apply to β_2

(0.62), $\beta_3(0.165)$ and $\beta_4(0.217)$ relating to project planning and control (PPC), project cost control (PC) and project time control (PT) respectively.

On the other hand, β_5 relating to the project quality control (PQ) = -0.003, which suggests that for every unit increase in the project quality; its socio-economic impact is decreased by 0.3%. This is perhaps explained by the low income status of the respondents as they may not attach much importance to the quality of their dwelling, but are satisfied to have a place for living. The impact of project quality control on socio-economic impact of LIH projects is however not significant ($\alpha=0.05$ and $p=0.0771$).

From the model, the order of importance of independent variables can be summarized as $PPC(\beta=0.620) > PS(\beta=0.25) > PT(\beta=0.217) > PC(\beta=0.165) > PQ(\beta=-0.003)$. From the results obtained from the analysis of data for this study, project planning and control (PPC) has the greatest relationship to the socio-economic impact of public LIH projects. This suggests that the planning tools, expertise and thoroughness of project planning are very vital to the overall impact of a LIH project socio-economic wise. Project planning defines objects and requirements and helps coordinate and integrate activities (Peurifoy, Schexnayder and Shapira, 2006). Implied in this result is the notion that low income projects' socio-economic impacts can be pre-conceived and pre-planned at the PM stage, and attained at the utilization stage. Socio-economic changes include changes in community demographics, demand for public services, changes in employment and income levels, etc (Edwards, 2012). The current study affirms that such changes can be attributed to the project planning and control activities of the project team.

Project quality control does not significantly affect LIH socio-economic impact. Leal (2012) refers to quality as the ability of a process, or product to satisfy both stated and implied needs, with these needs being defined by stakeholders. This category of housing users is apparently more interested in housing that satisfies the basic need of shelter provision. A further reason could be that quality control and quality assurance are not given required consideration during project execution.

Summary and Conclusion

Based on the data obtained for this study, project quality control does not significantly affect the socio-economic impacts of public LIH projects, while project planning and control (PPC), project scope control (PS), project cost control (PC) and project time control (PT) have significant socio-economic impact on LIH projects. The socio-economic impacts of low income housing projects in the research area were not determined by the application of quality control or lack of it. The most important PM variable affecting the socio-economic impact of public LIH projects is *project planning and control (PPC)*, while the least is project quality control. The relationship between the socio-economic impacts of public LIH projects and their PM variables is given by the equation:

$$SEI = .085 + 0.25PS + 0.620PPC + 0.165PC + 0.217PT - 0.003PQ$$

95.1% of the socio-economic impacts of LIH projects can be explained using PM variables.

The order of importance of the PM variables to the socio-economic formation of housing beneficiaries is:

PPC(=0.620) > PS(=0.25) > PT(=0.217) > PC(=0.165) > PQ(=0.003), implying that a unit rise in project planning and control will lead to 62% rise in the socio-economic impact of LIH projects. The rest of the variables give respective percentage increases/decreases in their socio-economic impacts as shown above.

Recommendations

- a) Formal project planning and control should be adopted as a critical tool for optimizing the socio-economic impact of public LIH housing projects.
- b) LIH projects' scopes should be adequate and focused on contributory factors to the enhancement of the socio-economic status of the LIH users.
- c) Project time control (PT) should be increased, and made to respond to customer needs for timely LIH project completion.
- d) Project quality control and assurance should be improved to increase the comfort of dwellers, while further assuring the sustainability of housing structures.
- e) Overall LIH project cost control should be optimized, and strengthened to address user needs at the utilization stage of the LIH project.

References

- Abbasi G. Y and Al-Mharmah, H. A (2000) Project Management practice by the public sector in a developing country *International Journal of Project Management* 18 pp. 105 – 109
- Adenubi O. I. and Windapo, A. O. (2007) A Study of factors affecting the affordability of urban housing in Nigeria *Construction Research Journal Vol. 1 No. 1* pgs 26-36
- Adindu, C. C. and Oyoh, A. J. (2011). Urbanization and Housing in Nigeria – an expository study. *Journal of Environmental Research and Policies, Vol. 6. No. 3* pp. 68-73
- Ajanlekoko, J. S. (2001) *Sustainable Housing Delivery in Nigeria – The financial and Infrastructural Implication*, International conference on Spatial Information for Sustainable Development, Nairobi Kenya, 2 - 5 October, 2005
- Dolan, K. (2005) Critical success factors in information technology project management, retrieved from <https://papyrus.bib.umontreal.ca/jspui/handle/1866/1680> on 5/5/2012
- Edwards, M (2012). Community Guide to Development Impact Analysis retrieved from http://www.lic.wisc.edu/shapingdane/facilitator/all_resources/impacts/analysis_intro.htm n5/5/2012
- Fagbohun, P. O (2007) Housing and Liveability in Nigerian Cities: A Study of Oshodi, Lagos, in Nuibi, T. O; Omirin M. M; and Afolayan, A. S (eds): *Private Sector Driven Housing Delivery: Issues, Challenges and Prospects*, Lagos: Department of Estate Management, University of Lagos
- Hunadle, G. H. and Rosengard, J. K. (1983). Putting 'projectised' development in perspective, *Public Administration and Development*, vol. 3, pp. 299-305
- Ibrahim, A.D. (2008) A critique of the operational philosophy and mechanism of the

- Public Procurement Act 2007: Construction Industry perspective, 23rd Biennial Conference of the 15 Nigerian Institute of Quantity Surveyors, 5th to 8th November 2008, Hamdala Hotel, Kaduna, Nigeria.
- Ilesanmi, A. O. (2012) the legacy and challenge of public housing provision in Lagos, Nigeria retrieved from www.gla.ac.uk/media/media_129698_en.pdf on 8/5/2012
- Iroegbu A. N (2006) An overview of housing development in Nigeria in Igwe-Kalu, A and Chima G. N (eds.) *Housing Development in Nigeria: concepts, issues and strategies* (pp. 128-143), Abakaliki: Paulinton Press
- Leal, J. J. (2012). Project Quality Management, *Business: Change Management* retrieved from www.ezinearticles.com on 10/5/2012
- Mba, H. C. (1992) The Dilemmas of Housing programmes in Nigeria *Environmental Science: Mekslink Publishers* (Nigeria): University of Nigeria Virtual Library
- Miles, M. E, Berens, G. and Weiss, M. A. (2000). *Real estate development, principles and processes (3rd Edition)*, Washington D C: Urban Land Institute
- Munns, A. K., and Bjeirmi, B. F. (1996). The role of project management in achieving project success. *International Journal of Project Management*, 14, 81–87.
- National Population Commission (2006) 2006 Population and Housing Census of the Federal Republic of Nigeria: Housing Characteristics and Amenities Tables – Priority Tables (LGA) Volume II: Abuja, NPC
- Nwanekezie, O. F (2006). An Evaluation of Housing Finance and Provision in Nigeria in Igwe-Kalu, A and Chima G. N (eds.) *Housing Development in Nigeria: concepts, issues and strategies* (pp. 128-143), Abakaliki: Paulinton Press
- Oberlender G. D. (2000). *Project Management for Engineering and Construction*, Boston: McGraw Hill
- Olayiwola, L. M., Adeleye, O. and Ogunshakin, L. (2005) *Public Housing Delivery in Nigeria: Problems and Challenges*, World Congress on Housing, Transforming Housing Environments through the Design held on September 27 – 30, Pretoria South Africa
- Olutuah, A. O. and Bobadoye, S. A. (2009) Sustainable Housing Provision for the Urban Poor: A Review of Public Sector Intervention in Nigeria. *The Built and Human Environment Review, Volume 2*,
- Olurin, T. (2007). Housing standards and cost reduction strategies: The challenges of meeting the housing needs of Nigerians in the 21st Century in Nubi, T. O., Omirin, M. M. and Afolayan, A. S (eds.), *Private Sector Driven Housing Delivery: Issues, Challenges and Prospects* (pp. 284-303). Lagos: Department of Estate Management University of Lagos
- Omole, K. F. (2010) An assessment of housing condition and socio-economic life styles of slum dwellers in Akure, Nigeria, *Contemporary Management Research* Vol. 6 No. 4 pages 273-290
- Peurifoy, R. L., Schexnayder, C. J. and Shapira, A (2006). *Construction, Planning Equipment and Methods*. New York: McGraw-Hill
- Pinto, J. K., (1998). The Elements of Project Success, in D. I. Cleland (Ed.), *Field Guide to Project Management*, pp. 13-21, Van Nostrand Reinhold, New York
- Rahman, K. K. (2012) Development of housing finance and its impact on socio-economic retrieved IFC Bulletin No. 31 retrieved from www.bis.org/ifc/publ/ifcb31i.pdf on 2/5/2012
- Report of the Vision 2020 National Technical Working Group on Housing (2009) retrieved from www.npc.gov.ng/.../NTWG%20Final%20Report/housing%20ntwg%20 on 5/5/2012

- Social Housing for the Poor in Nigeria (2012) Welcome to Social Housing Advocacy Group (S.H.A.G) Nigeria retrieved from <http://www.socialhousingNigeria.com/> on 4th May, 2012
- The Free Dictionary (2012) low income housing retrieved from <http://financial-dictionary.thefreedictionary.com/low-income+housing-income+housing> on 5/5/2012
- United Nations Centre for Human Settlements (Habitat) (2006) Assessment of Experience with the project approach to shelter delivery for the poor. Kenya: Un-Habitat
- Van-Wyk, K (2009). The socio-economic impact of low-income housing delivery: an empirical study in the province of the Eastern Cape in South Africa proceedings of ISA RC Housing Conference, Glasgow 1-4 September
- Wahab, K. A (1985). Housing Co-operatives as Tools for Mass Housing in Onibokun, P (ed.) *Housing in Nigeria*, Ibadan: Nigerian Institute of Social and Economic Research (NISER)
- Wahab, K. A (1976). Value judgment and housing policies. *African Environment*, 11, 1-2
- Wasiu, A. O. A (2005), 'Housing for all by the year 2015 – A realistic point of view, *Lagos QS Newsletter*; vol. 17. No. 3.
- Wikipedia (2012a). Abia States retrieved from en.wikipedia.org/wiki/abia_state on 5/7/2012
- Wikipedia (2012b). Imo States retrieved from en.wikipedia.org/wiki/imo_state on 5/7/2012
- Yamane, T. (1964), *Statistics: An Introductory Analysis*, New York: Harper Row Publisher