



Failure of Public Building Projects: An Investigation of Abandoned Hospital Projects in Imo State, Nigeria

Uche Felix Ikechukwu^{1*} and John Chiagoghalmuoke Ozuzu¹

¹Department of Building, Imo State University, Owerri, Nigeria.

Authors' contributions

This work was carried out in collaboration between both authors. Author UFI designed the study, prepared the field work, and wrote the protocol, did the first draft of the manuscript and analyzed the data. Author JCO managed the literature searches, managed the field survey and processed the data. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JERR/2021/v21i217442

Editor(s):

(1) Dr. Djordje Cica, University of Banja Luka, Bosnia and Herzegovina.

Reviewers:

(1) N. Seshadri Sekhar, Sri Chandrasekharendra Saraswathi Viswa Maha Vidyalyaya, India.
(2) Mushtaq Ahmad, National Energy University Malaysia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/74687>

Original Research Article

Received 02 August 2021

Accepted 07 October 2021

Published 15 October 2021

ABSTRACT

Failure and abandonment of government projects have been a global phenomenon. The study aims at evaluating factors involved in the abandonment of the proposed hospital building projects in the 27 local government areas in Imo State, Nigeria; with a view to developing a framework that will be used as a guide to revive the abandoned health facilities. Among the specific objectives is to evaluate the factors responsible for the abandonment, compare the performance of the procurement method used for the hospital project with other procurement methods, and to assess the effects of the abandoned hospital projects on the socio-economy and environment of Imo state. The targeted population includes the 4 members of the community government Council (CGC) and the building production professionals in the study area. Field survey research method was adopted for collection of both parametric and non parametric data. Ranking of the factors of abandonment was done using the Relative Importance Index (RII), student t-test and ANOVA were use to carry out tests on differences amongst variables of two and more than two sample populations respectively. Chi-square test was used to ascertain dependency of factors of casual relationships. Findings show that the three most significant factors that could cause the abandonment of the hospital project are; poor project implementation, negative politics practiced by the government, and inadequate structure to ensure continuity of projects. The study also finds that the failure of the

*Corresponding author: Email: uchehappy4me@gmail.com;

abandoned project does not depend on the procurement method used. Again, the condition of contract used on the abandoned hospital project is deficient. Lowering of living standard, lack of trust on the government by the citizenry, and visual defects of the environmental are the three most significant implications of the abandoned hospital projects on the socio-economy and environment of the Imo state are. The study however succeeds in developing a framework which can be used as a guide to revive the abandoned hospital project in Imo state; through integration of structure for developmental continuity from one administration to the other, and independent body of monitoring and implementation responsibilities. It is therefore recommended that the ingredient contained in the frame work be applied in the study area.

Keywords: Government hospital buildings; procurement method and condition of contract; project delivery; abandonment of project and revival of project.

1. INTRODUCTION

The incidence of abandoned projects in Nigeria has made initiation of every housing development project a suspect in disguise. This is because from the onset, people are no longer excited in any award of such project. They usually believe that the project will be abandoned at a stage in the production process. Most time the host communities make projections about the outcome and the possibility of abandoning the project by evaluating the reputation of the government who awarded the project and the contractor selected to handle the project [1].

Hospitals are special buildings for extensive health care. They are usually characterized by multiple building components and services, facilities, continuous technological innovations and specific functions. Hence, their design, construction and development are always meant to comply with specific building codes and regulations for effective operations. These elements of uncertainty attached to the nature of hospital projects make their construction a complex process [2]. The fast paced innovations and innovations on the clinical services followed by integrated technological update demand hospital designs to be flexible [3]. Hospital buildings therefore are capital intensive, and have a complex network of services to facilitate wide range of functions.

Government hospital projects of any nation are of immense importance to the citizens and residents of that nation as it forms part of the building blocks that support national growth. The successful execution of these projects serves as a visible indicator for development in a country [4]. He concluded that in developing countries like Nigeria however, many projects embarked on by the government are classified as failed projects. He defined

project failure as the incapability of a project to be completed within its set time, cost and quality specifications. [5] however suggest that regardless of a project's completion time and cost, it can still be considered as failed if the project does not fulfill its required purpose. The causes of project failure are numerous both in developed and developing nations; and [6] has remarked that large amounts of funds have been lost by governments as a result of failed projects [7,8]. Thus, the consequence of project failure results to stagnation in the growth of national development [9].

At present, the menace of project failure has resulted to abandonment of many projects in Nigeria. According to a report by [10], there are about 4000 abandoned projects belonging to the federal government of Nigeria with an estimated cost of above #300 billion which will take about 30 years to complete at the present execution capacity of government. He also observed that this issue has been left without adequate attention for too long, resulting now to a multiplier effect on the construction industry in particular and the national economy as a whole. [1] stressed that in Nigeria today the landscape is littered with abandoned building, road, rail, ports and other infrastructural projects at all levels of governance from local government through the state government to the federal territory.

The problem of abandoned projects in the construction industry is a global phenomenon, and the construction project in Imo state is no exception. According to [11], the consequence of abandoned project has affected the society and environment negatively. Economically, it is a waste of useful resources, and enhancement on the quality of life of the people is also affected. Although there are some abandoned projects that have been revived successfully, many of them today are still in their pitiable states of

abandonment without any hope of revival. Besides, there is no clear policy or framework in existence for the abandoned project of outgoing government administration to be continued by the incoming administration, despite the necessity of the abandoned project. For this reason, this study was conceived to develop a framework that will help in restoring the abandoned hospital projects littering around the 27 local government areas of Imo state, Nigeria.

2. RESEARCH METHODOLOGY

A field survey design was adopted for data collection. Most of the data collected were nominal in measurement but, were converted to ordinal data by coding them systematically with quantitative values for unbiased deductions on the specific objectives of the study. Structured questionnaires of likert scale arrangement were administered to the target respondents. Since the hospital projects were awarded directly by the government to the contractors, the members of the Community Government Council (CGC) namely; the community president general, the secretary, the youth leaders, and the women leaders of the respective communities were co-opted to monitor and supervise the projects. They are sampled as the first set of the population frame in the study with sample size of 85 respondents.

The second population of the study is made up with registered building professionals who are effectively practicing in Imo state. They are: Architects, Builders, Civil Engineers (Structures), Quantity Surveyors, and Urban Planners, with a sample size of 242 respondents.

Statistically, Relative Importance Index (RII) was used for ranking of the following factors. They are:

- i. factors causing the abandonment of the hospital projects,
- ii. effects of the abandoned hospital projects in the society, and
- iii. revival factors for the abandoned hospital projects.

Weighting of the likert scale measurement in the questionnaire are in the following categories of acceptance; Strongly Agreed (SA) = 4; Agreed (A) = 3; Disagreed (D) = 2; and Strongly Disagreed (SD) = 1.

Hence, $RII = (4n_4 + 3n_3 + 2n_2 + n_1) / 4N$.

One sample t-test was used to determine the average effect of the causes of abandonment of the hospital projects in Imo State. It was also used to determine if there is a significance difference existing between the means on the effects of the hospital project abandonment. The t-test is therefore expressed in the following form:

$$t = \frac{x - \mu}{S/\sqrt{n}}$$

Where;

x is sample mean,
 μ = population mean,
S = standard deviation,
N = sample size,
 $X_i = 4n_4 + 3n_3 + 2n_2 + n_1 / N$, X = the mean.

The Student t'-test is done at $\alpha = 0.05$ and at n-1 degree of freedom (df). Reject H_0 if t_{cal} is greater or equal to t_{α} , (i.e., if $t_{cal} \geq t_{\alpha}$, reject H_0) and accept the alternative hypothesis. The analysis was done using SPSS (Statistical Package for Social Sciences).

Analysis of Variance was used to compare the mean performance of the various procurement methods used in the construction industry. SPSS was used to determine the between groups and within groups variations.

One sample Chi-Square test was used to determine if there is a significance difference in the performance of the procurement method used for the hospital project with other procurement methods; and difference in the factors that can be used to revive the abandoned hospital projects. The one sample Chi-square test may be defined as; $\chi^2 = (O - E)^2/E$.

Where; O is the observed sample, and E = the expected sample.

The test therefore was carried out using n-1 degree of freedom (df) at 0.05 critical significance level. If $\chi^2_{cal} \geq \chi^2_{\alpha}$, then reject H_0 , and accept the alternative hypothesis.

3. PRESENTATION OF DATA AND DISCUSSIONS

Data elicited from the targeted respondents in relation to the essence of the respective objectives of the study are presented as follows.

From Table 1, poor project implementation, negative politics practiced by the government and inadequate structure to ensure continuity of

projects make the list of the critical causes of the abandonment of the hospital project in Imo state, as they are ranked 1st, 2nd and 3rd on the list. Project imposition and community interference however form a tie at 20th position towards the last in ranking. In this study, there was no evidence that the community asked for compensation; rather they were of help in the project. Making the bottom of the list is misunderstanding of work requirements.

In Table 2 is contained the t-test on the causes of hospital project abandonment in Imo state; the following result emerged from the test using SPSS,

X is 2.7; S.D = 0.74; and $t_{cal} = 6.25$. Thus, using 0.05 significance level at (22-1) degree of freedom (df); $t_{\alpha} = 1.721$.

Since, $t_{cal} (6.25) > t_{\alpha} (1.72)$, reject H_0 then, accept H_A (the alternative hypothesis).

Hence, the implications of the factors that cause abandonment of hospital projects in Imo state are not the same. Hence, each factor is discrete and contributed independently at different levels to the abandonment of the project.

ANOVA test on difference in the mean effects of the various procurement methods is as showed in Table 6. It therefore reveals that the F_{cal} is 1.6, and $F_{tab} = 5.99$. Since the F_{tab} is greater than F_{cal} , accept H_{01} . Therefore, effects of the various procurement methods on the abandonment of project do not vary from one another in the study area.

In the examination of difference in the deficiencies of the condition of the contract used in procurement of the abandoned hospital projects with other common methods in the area, the student 't' test statistic was applied.

The result was obtained using SPSS is as follows: X = 2.6, S.D = 0.71, $F_{cal} = 8.1$

At 0.05 level of significance at (11-1) degree of freedom (df). Thus, $t_{\alpha} = 1.812$.

Since $t_{cal} (8.1) > t_{tab} (1.81)$, reject H_0 and accept the alternative hypothesis.

Therefore, the condition of contract used on the abandoned hospital project is deficient; which justifies the fact that unspecified and non enforceable conditions of contract pose challenges in management and delivery of the projects.

Table 1. The causes of hospital project abandonment in IMO state

S/N	Causes of Hospital Project Abandonment in Imo State	1	2	3	4	RII	Rank
1	political factor	0	7	15	50	.89	2
2.	inadequate planning	0	3	21	48	.90	1
3.	prequalification procedure	20	13	12	27	.65	15
4.	non issuance of white paper on investigation	17	20	18	17	.62	17
5.	faulty design	30	14	15	13	.53	18
6.	variation of project scope	17	12	3	40	.72	11
7.	project manager incompetence	3	11	8	50	.86	4
8.	delayed payment	4	19	21	28	.75	10
9.	under bidding of project	18	13	6	35	.70	12
10.	project imposition	30	42	0	0	.39	21
11.	embarking on a project without need analysis	15	14	19	24	.68	14
12.	change of priority	2	17	13	40	.81	7
13.	misunderstanding of work requirement	53	12	7	0	.34	22
14.	improper documentation	7	12	43	10	.69	13
15.	wrong location	25	37	10	0	.44	19
16.	capacity constraints	0	16	27	39	.82	8
17.	inadequate budgetary allocation	1	12	11	48	.86	4
18.	inadequate finance	0	3	32	37	.86	4
19.	inflation	8	11	17	36	.78	9
20.	fund mismanagement	17	17	19	19	.63	16
21.	inconsistence government policy	0	3	30	39	.87	3
22.	community interference	30	39	20	1	.39	20

Source: Authors' Field Work Result, (2021)

Table 2. The student's t-test hypothesis on the causes of hospital project abandonment in IMO state

S/n	Causes of Hospital Project Abandonment in Imo State	xi	(xi-x)	(xi-x) ²
1	political factor	3.5	.8	.64
2.	inadequate planning	3.6	.9	.81
3.	prequalification procedure	2.6	-.1	.01
4.	non issuance of white paper on investigation	2.4	-.3	.09
5.	faulty design	2.1	-.6	.36
6.	variation of project scope	2.9	.2	.04
7.	project manager incompetence	3.4	.7	.49
8.	delayed payment	3.0	.3	.09
9.	under bidding of project	2.8	.1	.01
10.	project imposition	1.5	-1.2	1.44
11.	embarking on a project without need analysis	2.7	0	0
12.	change of priority	3.8	1.1	1.21
13.	misunderstanding of work requirement	1.3	-1.4	1.96
14.	improper documentation	2.7	0	0
15.	wrong location	1.7	-1	1
16.	capacity constraints	3.3	.6	.36
17.	inadequate budgetary allocation	3.4	.7	.49
18.	inadequate finance	3.4	.7	.49
19.	inflation	3.1	.4	.16
20.	fund mismanagement	2.5	-.2	.04
21.	inconsistence government policy	3.5	.8	.64
22.	community interference	1.5	-1.2	1.44

Source: Authors' Field Work Results, (2021)

Table 3. Ranking of the assessment of procurement methods

Assessment Criteria	1	2	3	4	Mean	Rank
Cost Effectiveness						
Traditional method	52	54	60	42	2.4	3
Design and build	5	17	22	164	3.6	1
Construction management	11	26	40	131	3.3	2
Management contracting	60	84	50	14	2.0	4
Extend of Usage						
Traditional method	3	14	55	136	3.5	1
Design and build	17	12	75	104	3.2	2
Construction management	30	70	76	32	2.5	3
Management contracting	70	65	45	28	2.1	4
Level of Awareness						
Traditional method	14	4	85	105	3.3	1
Design and build	17	21	100	70	3.0	2
Construction management	28	41	110	29	2.6	3
Management contracting	41	38	87	42	2.6	3
Level of Competition						
Traditional method	9	12	88	99	3.3	1
Design and build	87	66	55	0	1.8	4
Construction management	40	49	80	39	2.5	3
Management contracting	37	40	70	61	2.7	2
Price Certainty						
Traditional method	15	44	79	70	2.9	2
Design and build	0	17	58	133	3.5	1
Construction management	37	10	130	31	2.7	3
Management contracting	50	52	63	43	2.4	4
Quality Assurance						

Assessment Criteria	1	2	3	4	Mean	Rank
Traditional method	55	72	68	13	2.1	3
Design and build	17	37	77	77	3.0	2
Construction management	2	20	97	89	3.3	1
Management contracting	70	71	50	13	1.9	4
Quality Sacrifice						
Traditional method	13	14	98	83	3.2	2
Design and build	6	12	77	113	3.4	1
Construction management	19	89	82	18	2.4	3
Management contracting	38	69	67	34	2.4	3

Source: Authors' Field Work Results, (2021)

Table 4. Procurement methods on cost of building projects

S/N	Assessment Criteria	T.M	D&B	M.C	C.M
1.	Accident/Delay	61	50	21	76
2.	Claims	70	33	41	64
3.	Cost related to environmental issues	69	33	47	59
4.	Dispute	72	39	50	47
5.	Managerial cost (Consultancies)	80	14	74	40
6.	Variation between contract sum/final account	69	58	61	20
7.	Variation in design/change order	71	22	50	65
8.	Rework	65	37	47	59
9.	Legal cost	60	32	44	72
	Total	617	288	435	502
	Mean Score	2.9	1.3	2.0	2.4

Source: Authors' Field Work Results, (2021)

Table 5. Procurement methods on quality of work

S/N	Assessment Criteria	T.M	D&B	M.C	C.M
1.	Adherence/compliance to specification	25	55	66	62
2.	Competence of contractor and his team	49	67	61	31
3.	Inconsistency of variation order	67	44	50	47
4.	Insistence on specification	27	50	61	70
5.	Time overrun	60	58	52	38
6.	Material Test	42	52	57	57
7.	Number of rework	54	50	54	50
8.	Number of variation/change order	52	49	50	57
9.	Supervision of works	33	40	65	70
	TOTAL	409	465	516	482
	Mean Score	1.9	2.2	2.4	2.3

Source: Author's Field Work, (2021)

Table 6. ANOVA result of procurement methods on project performance

Source of variation	Sums of Square	D.F	Mean square	Fcal	Ftab	Sig	p-value	Decision
Between Group	4	1	4	1.6	5.99	S*	0.00	Accept H0
Within Group	15	6	2.5					
Total	19	7						

Source: Authors' Results of Analysis, (2021)

Table 7. The attributes of the general condition of contract for the hospital building

Attributes of contract condition	1	2	3	4	Mean	Rank
1. Clarity: general conditions are easily understood and free from ambiguities.	5	17	30	20	2.9	2
2. Conciseness: general conditions are concise and do not contain superfluous material.	7	20	23	22	2.8	3
3. Completeness: general conditions are comprehensive containing all relevant aspects.	15	10	17	30	2.8	3
4. Internal Consistency: the clauses of the general conditions are consistency with each other.	12	18	25	17	2.6	7
5. External Consistency: general conditions are not in contradiction with any other applicable regulations.	13	19	18	22	2.6	7
6. Practicality: general conditions are practical to implement	4	30	16	22	2.7	6
7. Fairness: general conditions are fair to both the owner and the contractor.	20	21	13	18	2.4	9
8. Quality: general conditions promote the quality of materials and workmanship.	30	20	15	7	1.9	11
9. Time: general conditions promote the completion of the project within the time duration.	10	12	31	19	2.8	3
10. Cost: general conditions promote the completion of the project within budget.	17	25	20	10	2.3	10
11. Safety: general conditions promote the completion of the project within major accident or injury	4	5	27	36	3.3	1

Source: Authors' Field Work Results, (2021)

Table 8. The Student 't'- test for the attributes of the general condition of contract for the hospital building

Attributes of Contract Condition	Xi	(Xi-X)	(Xi-X) ²
1. Clarity	2.9	.3	.09
2. Conciseness	2.8	.2	.04
3. Completeness	2.8	.2	.04
4. Internal Consistency	2.6	0	0
5. External Consistency	2.6	0	0
6. Practicality	2.7	.1	.01
7. Fairness	2.4	-.2	.04
8. Quality	1.9	-.7	.49
9. Time	2.8	.2	.04
10. Cost	2.3	-.3	.09
11. Safety	3.3	.7	.49

Source: Authors' Statistical Results, (2021)

In Table 9, abandoned hospital project is seen to be more significant in reducing the people's standard of living in the affected areas; as the project which should serve as vehicle to health and economic growth turned to be a clog in the wheels of development of those areas. Hence, lowering of living standard is ranked 1st. As a result of this abandonment, there is no trust on the government project as they are often associated with failure. Hence, it is ranked 2nd on the disappointment list. Following is visual

defects on the environmental site. Abandoned projects are eyesores to the environment, they make life miserable for people living around them, therefore, it is ranked 3rd.

Furthermore, employment opportunities are reduced around the areas of the abandoned projects, since those places are dangerous for business. People working on the projects will be unemployed and the upcoming employees will be disappointed as their hopes are shattered; hence

Table 9. The effects of hospital projects abandonment in IMO state

Effects of Hospital Project Abandonment in Imo State	1	2	3	4	RII	Rank
1. Lowering of living standard	0	0	17	55	.94	1
2. Decrease in government revenue	4	16	8	44	.81	10
3. Defacing the aesthetics of the environment	0	11	22	39	.84	8
4. Lowering employment opportunity	2	0	19	51	.91	4
5. Disappointment of the end users	0	0	31	41	.89	5
6. Decrease economic activities	5	7	20	40	.82	9
7. Wastage of valuable resources	1	3	28	40	.87	6
8. Difficulty in obtaining public loan	30	10	14	18	.56	18
9. Wastage of equipment on site	40	15	13	4	.43	21
10. Increase in final cost of project	12	1	3	56	.85	7
11. Environmental pollution as a result of dumping of cabbage	11	12	14	35	.75	12
12. Declining of the property value	18	12	13	29	.68	15
13. Declining of the property condition	13	8	19	32	.74	13
14. Structural failure of building	9	12	40	11	.68	15
15. Visual defects on the environmental site	2	0	18	52	.91	3
16. Distortion of the landscape/urban planning	19	30	17	6	.53	19
17. Health problem	7	17	40	8	.67	17
18. Hidden places for dangerous animals	0	20	30	22	.75	11
19. Marginalization of the host population	30	31	4	7	.45	20
20. Lack of trust on the government	0	2	15	55	.93	2
21. Criminal hideout posing insecurity to life	12	14	17	29	.71	14

Source: Authors' Field Work Results, (2021)

it is ranked 4th. Structural failure of building however, ranked 15th, as it formed tie with declining of the property value in the study area.

Evaluation of the difference in effects of hospital projects abandonment in Imo state. In Table 9 is shown the t-test result of assumption on the effects of abandoned hospital projects in Imo state. The results of the SPSS soft ware package calculation are as follows:

$X = 2.9$; $S.D = 0.61$; $t_{cal} = 7.6$. At 0.05 level of significance and (21-1) degree of freedom (df). Hence, $t_{\alpha} = 1.725$.

Since $t_{cal} (7.6) > t_{\alpha} (1.73)$, reject H_0 and accept the alternative hypothesis.

Therefore, there is significant difference in the various effect of the abandoned hospital Projects. This means that each factors stands alone and discrete in its implication as a contributing factor to the effect on the socio-economy and environment of the 27 LGA of Imo state respectively.

The most significant factors for reviving the abandoned hospital projects in Imo state are shown in Table 11; as new government to complete old projects, having a structure that

ensures continuity, and independent body to ensure project continuity, in line with the study done by [12] rank 1st, 2nd, and 3rd respectively. Other factors that follow suit in ranking are; adequate number of required expertise, well estimated project cost, provision of project support, contract award based on competence, stimulating interest and participation of local beneficiaries and lastly, initiating projects based on acceptable reasons respectively.

In Table 12 is contained the result of analysis on assessment of the relationship between the revival factors of the abandoned project and the acceptance level of the respondents for effective delivery of the projects. The Chi-Square test (χ^2) on the factors capable of reviving the abandoned project is calculated as $\chi^2_{cal} = 47$; while tabulated value (χ^2_{α}) at 0.05 significance level and (9-1) degree of freedom is 15.51.

Since $\chi^2_{cal} (47) > \chi^2_{\alpha} (15.51)$, reject H_0 and accept the alternative hypothesis. Therefore, the reviving factors have significant effects on the resuscitation of the abandoned hospital projects. This shows that even as each factor is different from one another, they are all very contributive in the revival function of the abandoned hospital project.

Table 10. The 't'-test hypothesis on the effects of hospital projects abandonment in IMO state

Effects of Hospital Project Abandonment in Imo State		x_i	(x_i-x)	(x_i-x)²
1	Lowering of living standard	3.7	.8	.64
2	Decrease in government revenue	3.2	.3	.09
3	Defacing the aesthetics of the environment	3.3	.4	.16
4	Lowering employment opportunity	3.6	.7	.49
5	Disappointment of the end users	3.5	.6	.36
6	Decrease economic activities	3.3	.4	.16
7	Wastage of valuable resources	3.4	.5	.25
8	Difficulty in obtaining public loan	2.2	-.7	.49
9	Wastage of equipment on site	1.7	-1.2	1.44
10	Increase in final cost of project	3.4	.5	.25
11	Environmental pollution as a result of dumping of cabbage	3.0	.1	.01
12	Declining of the property value	2.7	-.2	.04
13	Declining of the property condition	2.9	0	0
14	Structural failure of building	2.7	-.2	.04
15	Visual defects on the environmental site	3.6	.7	.49
16	Distortion of the landscape/urban planning	2.1	.8	.64
17	Health problem	2.6	-.3	.09
18	Hidden places for dangerous animals	3.0	.1	.01
19	Marginalization of the host population	1.8	-1.1	1.21
20	Lack of trust on the government	3.7	.8	.64
21	Criminal hideout posing insecurity to life	2.8	-.1	.01

Source: Authors' Field Work Results, (2021)

Table 11. Revival factors for abandoned hospital projects in IMO state

Revival Factors for Abandoned Hospital Projects in Imo State		Responses	%	Rank
1.	Well estimated project cost	8	11.1%	5
2.	Adequate number of required experts	9	12.5%	4
3.	Provision of project support	6	8.3%	6
4.	Initiating projects based on acceptable reasons	3	4.1%	9
5.	Contract award based on competent	4	5.5%	7
6.	New government to complete old projects	16	22.2%	1
7.	Structure that ensures continuity of projects	12	16.6%	2
8.	Stimulating interest and participation of local beneficiaries.	4	5.5%	7
9.	Independent body to ensure project continuity	10	13.8%	3

Source: Authors' Field Work Results, (2021)

Table 12. Chi-square test for revival factors of abandoned hospital projects in IMO state

S/n	Observed (O)	Expected (E)	(O-E)	(O-E)²	(O-E)²/E
1.	7	8	-1	1	0.125
2.	5	8	-3	9	1.125
3.	4	8	-4	16	2
4.	2	8	-6	36	4.5
5.	8	8	0	0	0
6.	24	8	16	256	32
7.	12	8	4	16	4
8.	3	8	-5	25	3.125
9.	7	8	-1	1	0.125
					$\chi^2 = 47$

Source: Authors' Statistical Results, (2021)

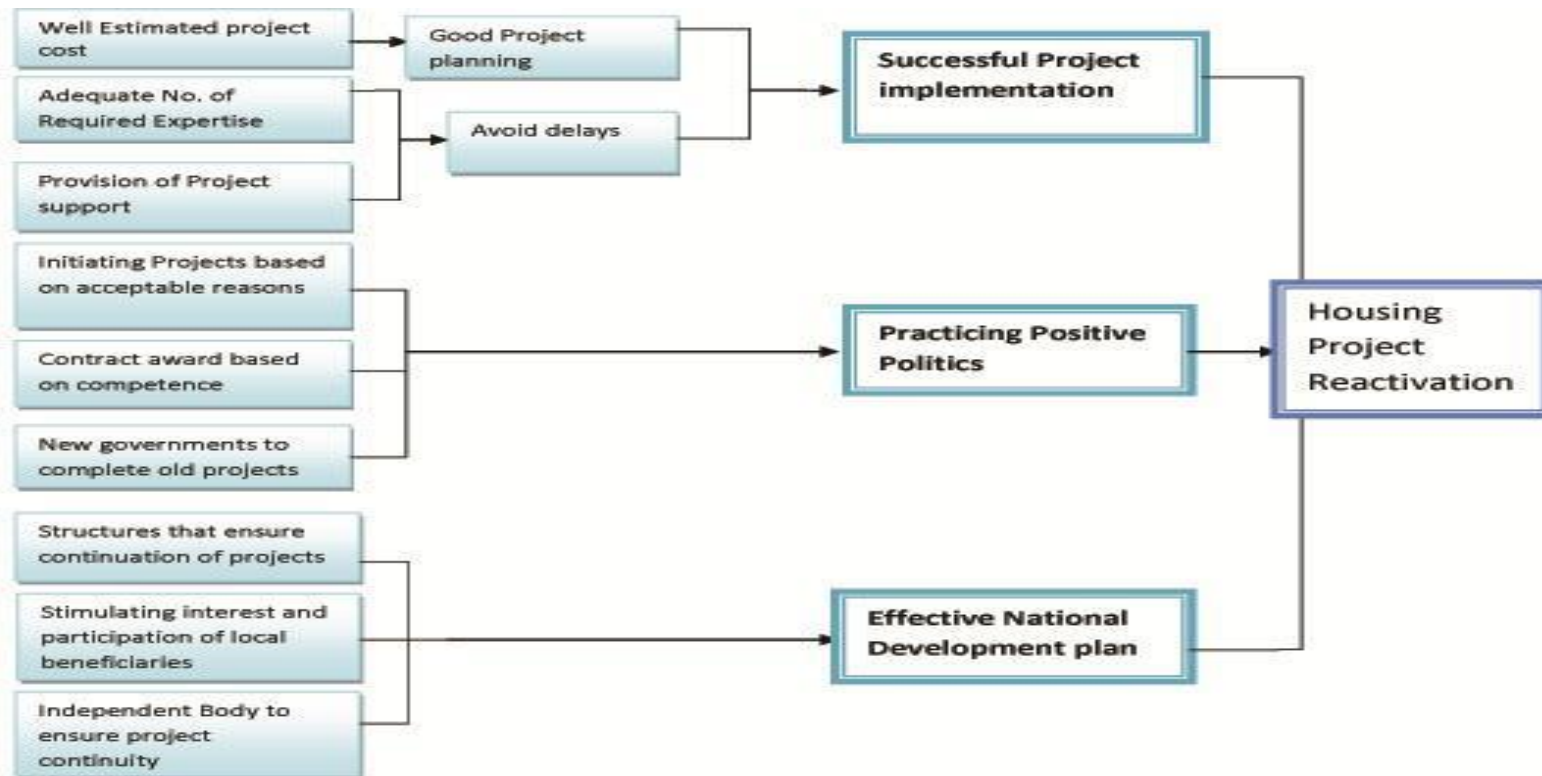


Fig. 1. Proposed framework for revival of the projects

4. SUMMARY OF THE MAJOR FINDINGS

The root cause of the hospital project failure and consequent abandonment are; poor project implementation; negative politics practiced by government and inadequate structures to ensure continuity of housing projects. These factors are ranked 1st, 2nd and 3rd as the major causes of abandonment in public projects. They are in correlation with the findings of [13]. The most significance effects of the abandoned hospital projects on the socio-economy and environment of the citizens however are; lowering of living standard, lack of trust on the government by the citizenry and visual defects of the environmental site, which tallies with the findings of [14].

In another dimension, failure or abandonment of the project does not depend on the procurement method used. It is therefore discovered that the standard condition of contract was not used in procuring the project. The most significant factors for abandoned hospital project resuscitation in Imo state however are discovered as; new government to complete old projects, having a structure, and independent body to ensure project continuity respectively. Hence, the finding is in line with the study carried out by [11]. The last factor in the list is noted as initiation of projects based on acceptable reasons.

5. CONCLUSION AND RECOMMENDATIONS

As the study explores the root causes of hospital projects abandonment in Imo state, it is discovered that unless a drastic measures are taken to address the issues of procurement methods, conditions and enforcement of contract, due process and poor documentation, failure of public building projects will be a reoccurring situation in the state. Most host communities where these projects are located have lost confidence on government. They always have the mindset that every administration has always been a flop especially on physical development. Although efforts were made by the immediate past administration of the state to use the local and statutory stakeholders in the community to monitor the projects, the projects still failed because of lack of effective project plans, due process, uncertainty in the condition of contracts, poor documentations and absence of statusquo of enforcement. The framework provides factors which when adopted, will systematically lead to a successful revival of abandoned housing project as well as sustain

existing ones. In examining the root causes of abandoned hospital projects a strategic framework is developed. It is very timely having realized that the health issues of the citizenry around the environment of the abandoned projects needs urgent attentions in all ramifications. The economy of the state also will improve, reduce unemployment, and appreciate the values of the adjoining properties around the abandoned projects. The frame work can as well be used as a risk management tool to regulate and facilitate the planning of public projects.

It is in the light of these and many more that the study presented a proposed framework (Fig.1) for revival of the abandoned hospital projects, with the constituent driving factors.

Based on the foregoing, this study recommends the following for the effective reactivation of the abandoned hospital projects littered around the 27 local government areas of Imo state, and also for effective government projects delivery in Nigeria. They are to ensure;

- i. appropriate project implementation plan for every project,
- ii. practice of strategic and positive politics,
- iii. effective and appropriate state/national developmental plans, and
- iv. Institution of viable and strict legislative rules to model the award of construction contracts and enforcement of completion of public projects.

The factors informing this recommendation are in relation with the proposed framework for the revival of the abandoned government hospital project in Imo state.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Olalusi O, Otunola, A. abandonment of building projects in Nigeria. A Review of Causes and Solutions. International Conference on Chemical, Civil and

- Environment Engineering (ICCEE'2012), Dubai. 2012;253-255.
2. Abel MH. Competencies management and learning organizational memory. *Journal of Facilities Management*. 2014;1(2):68-80.
3. Okereke O. Causes of failure and abandonment of projects and project deliverables in Africa. *PM World Journal*. 2017;6(1):1-16.
4. Hanachor M. Community development projects abandonment in Nigeria: Causes and Effects. *Journal of Education and Practice*. 2013;3(6):33-36.
5. Obatomi F. *The general at works & housing: Major-General M.T. Kontagora (rtd) Foundation*; 1993. ISBN: 978320050X, 9789783200500.
6. Halou M, Samin R, Ahmad M. Impacts of change management on risk and cost management of construction projects. *Journal of Project Management*. 2019;4(2): 157-164.
7. Nweze N. Failure of Public Infrastructure Projects in Nigeria: Causes, Effects and Vietnam. *International Journal of Project Management*. 2016;22(7):553-561.
8. Fabian C, Amir A. The chad-cameroon pipeline project - assessing the world bank's failed experiment to direct oil revenues towards the poor. *The Law and Development Review*. 2011;4(1):32-65.
9. Damoah IS. An Investigation into the Causes and Effects of Project Failure in Government Projects in Developing Countries: Ghana as a case Study; 2015.
10. Nzekwe J, Oladejo E, Emoh F. Project failure as a reoccurring issue in developing countries: Focus on Anambra State, South East, Nigeria. *International Journal of Energy and Environmental Research*. 2015;3(3):1-20.
11. Khalid SS, Ahmad M, Khalid LS, Odimegwu TC. Problems and factors affecting property developers performance in Dubai Construction Industry. *International Journal of Science and Research Publications*. 2018;8(11).
12. Okwandu G. Construction project management in Nigeria: Challenges and the Way Forward; 2010.
13. Alao A, Jagboro GO. The effects of construction delays on project delivery in Nigeria Construction Industry. *International Journal of Project Management*. 2002;20(8): 593-599.
14. Adebayo O, Eniowo O, Ogunjobi V. Assessment of project monitoring and control techniques in Ondo State Agency for Road Maintenance and Construction (OSARMCO). *International Journal of Engineering and Management Research*. 2018;8(5):177.

© 2021 Ikechukwu and Ozuzu; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/74687>