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## Assessment of resuscitation strategies of abandoned projects: A case study of public tertiary education institutions' buildings in Osun State, Nigeria

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### Abstract

Abandoned projects have contributed significantly to the inadequacy of teaching and research facilities in the Nigerian tertiary education institutions. This article examines the strategies for resuscitating the projects based on the financing options that were employed. The aim of this article is to suggest sustainable cash-flow strategies that could be appropriated for financing abandoned projects, in general, and tertiary education institutions projects, in particular. The article adopts a triangulation of qualitative and quantitative methodology. The respondents consist of 47 top officials in the physical development departments in Osun State public tertiary institutions. The qualitative assessment is based on open-ended face-to-face interviews involving three key informants, namely one quantity surveyor and two engineers. Data collected are analysed using mean analysis, Kruskal-Wallis (K-W) test, and ATLAS.ti 7.

Solicitation for funds and yearly budgetary allocation were both frequently used and were efficient strategies. On the other hand, public-private partnership (PPP) arrangement, and the establishment of institution-based, abandoned project-resuscitation unit/department, and levy of beneficiaries were strategies that were both least used and inefficient. The article provides implications for financing abandoned educational projects in the education sector.

**Keywords:** Abandoned buildings, public tertiary education institutions, resuscitation strategies

## Abstrak

Projekte wat verlaat word, het aansienlik bygedra tot die ontoereikendheid van onderrig- en navorsingsfasiliteite in die Nigeriese tersiêre opvoedkundige instellings. Hierdie artikel ondersoek die strategieë vir die herlewing van hierdie projekte, gebaseer op die finansieringsopsies wat gebruik is. Die doel van die artikel is om volhoubare kontantvloeistategieë voor te stel wat aangewend kan word vir die finansiering van verlate projekte in die algemeen en tersiêre opvoedkundige instellingsprojekte spesifiek. Die artikel gebruik 'n driehoek van kwalitatiewe en kwantitatiewe metodologie. Die respondente sluit in 47 topamptenare in die fisiese ontwikkelingsdepartemente in Osun State se openbare tersiêre instellings. Die kwalitatiewe assessering is gegrond op oop aangesig-tot-aangesig-onderhoud met drie sleutelinformante, naamlik een bourekenaar en twee ingenieurs. Die data wat ingesamel is, is geanaliseer met behulp van gemiddelde analise, Kruskal-Wallis (K-W) toets en ATLAS.ti 7. Die werwing van fondse en jaarlikse begroftingstoewysing was beide gereeld gebruik en was doeltreffende strategieë. Aan die ander kant was die openbare-private vennootskap (PPP)-ooreenkomste, en die vestiging van 'n instansie-gebaseerde projekherlewingseenheid/-afdeling, en die heffing van begunstigdes, strategieë wat die minste benut en ook ondoeltreffend was. Die artikel bevat implikasies vir die finansiering van verlate opvoedkundige projekte in die onderwyssektor.

**Sleutelwoorde:** Herlewingstrategieë, openbare tersiêre onderwysinstellings, verlate geboue

## 1. Introduction

Abandoned construction projects are of great concern to stakeholders involved in construction projects delivery in Nigeria (Shakir, 2012: online; Alao & Jagboro, 2017: 42). An estimate of N300 billion was reported to have been spent on 4,000 uncompleted or abandoned projects belonging to the Federal Government of Nigeria (Kotangora, 1993, cited in Ayodele & Alabi, 2011: 142). Similarly, a total of N12 trillion was reported by the Chartered Institute of Project Management of Nigeria' (CIPMN) committee to have been spent on 56,000 abandoned government projects across the country (*Daily Trust*, 2015). In 2012, the Needs Assessment of Nigerian Public Universities' committee reported that 163 of the 701 uncompleted tertiary education institutions projects had been abandoned (Needs Assessment of Nigerian Public Universities, 2012).

Both publicly and privately initiated construction projects are abandoned at various stages of construction for reasons that are, among others, substantially political factors, inadequate planning, wrong estimate, incompetent project management, and inadequate finance (Report on abandoned projects, 2011; Ayodele & Alabi, 2011; Olalusi & Otunola, 2012; Hanachor, 2012; Ubani & Ononuju, 2013; Ewa, 2013; Ihuah & Benebo, 2014; Okwudili, 2014; Alao & Jagboro, 2017).

The persistent spate of construction project abandonment has contributed to current infrastructure deficit and inadequate teaching facilities in the Nigerian tertiary education institutions. The current facilities are being overstretched, due to an explosion in the number of students (Committee on Needs Assessment of Nigerian Public Universities, 2012) seeking admission into tertiary institutions. Of the N1.3 trillion special intervention fund promised by the Federal Government for revitalising the nation's universities for six years effective 2013 (Federal Ministry of Education, 2013), the initial N200 billion ended up for starting many projects and commissioning very few or none, due to universities' councils'/managements' preference to award new contracts rather than to complete the abandoned projects, or standardise existing facilities (Committee on Needs Assessment of Nigerian Public Universities, 2012). Abandoned tertiary education institutions projects seem to have persisted, because either there are no specifically defined strategies for their revival or the strategies being employed to revive them are ineffective. These occurrences and tendencies have triggered a number of studies relating to abandoned projects (Ayodele & Alabi, 2011; Olalusi & Otunola, 2012; Hanachor, 2012; Ubani & Ononuju, 2013; Ewa, 2013; Ihuah & Benebo, 2014; Okwudili, 2014; Tijani & Ajagbe, 2016; Alao & Jagboro, 2017; Mac-Barango, 2017). However, there is a paucity of studies on strategies for the resuscitation of abandoned tertiary education institutions projects in Nigeria. The aim of this article is to examine the strategies for resuscitating abandoned construction projects by exploring the effects of abandonment on the cost of resuscitation of some selected projects in the Nigerian tertiary education institutions, and the financing options that provided successful delivery. The article is expected to evolve strategies in practice for resuscitating abandoned projects that could be adopted for different project types, and tertiary education institutional projects specifically.

## **2. Literature review**

To understand abandoned building projects in Nigeria, it is important to introduce the current theory on resuscitating the projects included in this article. The existing theory focuses on the need for resuscitating, strategies used for resuscitating, and the effectiveness of these strategies for abandoned building projects.

### **2.1 Need for resuscitating**

Since resuscitation of abandoned projects seems to be a grey area in Nigeria, it is necessary to develop strategies to facilitate the resuscitation of abandoned projects, while analysing the causes of abandonment and developing frameworks to prevent its occurrence. Salisu (2012) opines that, while most of the abandoned public projects in Nigeria are accepted to be ill-conceived and have hardly any economic relevance to the people, the real challenge for the government and the construction stakeholders should be how to revive some of the most strategic infrastructures such as power, education, roads, housing, and transportation that bear direct relevance to the economy. Abandoned properties represent unrealised opportunities to rebuild communities. Therefore, information on systems or initiatives necessary to revive or resuscitate abandoned projects will benefit the initiators of the construction projects (Mallach, 2004).

According to the United States Conference of Mayors (2008: 1),

vacant and abandoned properties, whether residential or commercial, create costly problems for cities – problems which have been exacerbated by the mortgage foreclosure crisis. These properties are a drain on city budgets. They detract from the quality of life, as well as the economic opportunities, of those living around them. They are an impediment to individual neighborhood redevelopment and, ultimately, to achievement of city-wide economic development goals. Minimizing the harm done by vacant and abandoned properties and restoring these properties to productive use are priorities for mayors across the nation, and many have developed successful strategies to accomplish this.

The loss of substantial funds through failure or abandonment has a crippling effect on the capabilities of the investors and the financier(s), because, once a decision is taken to execute a project, scarce resources are tied down for a long period of time (Nwachukwu & Emoh, 2010; Omeife, 2013; Ogege, 2011), and other likely investment opportunities are foregone.

## **2.2 Strategies for resuscitating abandoned projects**

### **2.2.1 Strategies in different countries**

In a study on the need for initiatives to resuscitate abandoned projects, Abdul Rahman, Alashwal, Ayub & Abdullah (2013: 69) revealed that the Malaysian Government has established a division for the rehabilitation of abandoned projects and takes action to reserve the right of the purchaser because of their system of housing development (sell-then-build scheme). Despite numerous government actions, abandoned housing projects still persist, showing that various risks are involved in the rehabilitation process (Abdul Rahman *et al.*, 2013: 71, 72). Abdul Rahman *et al.*'s (2013: 72) study asserted that there is still a lack of investigations to verify the efficiency of the different proposed initiatives in order to mitigate the abandonment problem. Therefore, these findings cannot be generalised to the Nigerian development practice, because Malaysian development is purely developer-oriented, housing-specific and well regulated.

In a review of public housing projects abandonment in Ghana, Twumasi-Ampofo, Osei-Tutu, Decardi-Nelson and Ofori (2014) proposed a model for reactivation of abandoned public housing projects. This entails the proper implementation of public housing projects, positive politics practice by government, and adequate structures that ensure continuation when there is a change in government. The generated models lacked empirical analysis and failed to assess strategies that have been used to revive abandoned housing projects. Studies on abandoned projects from the developed world have focused on the reuse of abandoned properties (Abandoned houses work group, 2004; Mallach, 2004; Mallach, 2006; The United States Conference of Mayors, 2008). Although the findings of these studies can provide the basis for strategies to revive abandoned construction projects, it cannot be generalised for direct application in the emerging economy. Moreover, Alufohai's (2012) review showed that international lessons on how to avoid abandoned projects based on the United Kingdom, the United States of America or some Asian economies could be difficult in Nigeria, due to the fact that projects abandonment is related, to a greater extent, to political and economic issues.

### 2.2.1 Strategies in emerging economies and Nigeria

In this study, strategies for the resuscitation of abandoned projects were conceptualised as all financing models for completing abandoned projects, with a view to achieving the purpose(s) for which they were initiated or to make them functional for alternative use. The uniqueness of construction projects in terms of design configuration (usually one-off), types of financier(s), stage/level of completion, and the conditions of contract, among others, call for appropriate strategies, not a one-cap-fits-all approach (Hussin & Omran, 2011).

Olalusi and Otunola (2012) recommend the establishment of a national construction bank to rejuvenate abandoned construction projects. A bank or financial institution that provides an economic stimulus package solely to assist abandoned construction projects could determine the best investment decision on abandoned projects and ascertain the project's viability by using investment models and analysis (Othman, 2012) to help the recovery of seemingly lost scarce resources expended on the abandoned projects, and indirectly increase internally generated revenue (IGR). For example, the construction bank could administer proposed funding for the completion of abandoned projects in some Nigerian Federal universities, as noted in Table 1.

Table 1: Proposed funding for completing abandoned projects in Federal Universities in Nigeria (in Nigeria Naira (N) million)

S/No	Institution	2003 (50%)	2004 (50%)	Total (100%)
1	University of Ibadan	175.00	175.00	350.00
2	University of Nigeria	175.00	175.00	350.00
3	Obafemi Awolowo University, Ile-Ife	175.00	175.00	350.00
4	University of Lagos	175.00	175.00	350.00
5	Ahmadu Bello University, Zaria	175.00	175.00	350.00
6	University of Benin	175.00	175.00	350.00
7	University of Calabar	150.00	150.00	300.00
8	University of Ilorin	150.00	150.00	300.00
9	University of Jos	150.00	150.00	300.00
10	Bayeso University, Kano	150.00	150.00	300.00
11	University of Port Harcourt	150.00	150.00	300.00
12	University of Marduguri	150.00	150.00	300.00
13	Usman Dan Fadio University, Sokoto	150.00	150.00	300.00
14	University of Uyo	150.00	150.00	300.00
15	Nnamdi Azikiwe University, Awka	150.00	150.00	300.00

S/No	Institution	2003 (50%)	2004 (50%)	Total (100%)
16	Federal University of Technology, Owerri	100.00	100.00	200.00
17	Abubakar Tafawa Belewa University, Bauchi	100.00	100.00	200.00
18	Federal University of Technology, Akure	100.00	100.00	200.00
19	Federal University of Technology, Yola	100.00	100.00	200.00
20	Federal University of Technology, Minna	100.00	100.00	200.00
21	University of Abuja	100.00	100.00	200.00
22	University of Agriculture, Abeokuta	100.00	100.00	200.00
23	Michael Okpara University of Agriculture, Umudike	100.00	100.00	200.00
24	University of Agriculture, Makurdi	100.00	100.00	200.00
25	National Mathematical Centre, Sheda	50.00	50.00	100.00
26	Nigeria French Language Village, Badagry	50.00	50.00	100.00
27	Nigeria Arabic Language Village, Ngala	50.00	50.00	100.00
28	National Institution for Nigerian Language, Aba	50.00	50.00	100.00
29	Division of Agricultural College, ABJ Zaria	50.00	50.00	100.00
30	National Universities Commission Secretariat	3,600.00	3,600.00	7,200.00

Source: Ibiam & Okunnamiri, 2007: 625-626

At present, there is no empirical evidence of the existence of governmental or non-governmental agencies with the sole responsibility to identify and resuscitate abandoned projects in the Nigerian context (Silberman, 2004). Nigeria practises the establishment of committee(s) to assess the level of projects abandonment sometimes due to citizenry agitations or criticism. Examples include, among others, Presidential Projects Assessment Committee (PPAC) set up in 2011; Committee on Needs Assessment of Nigerian Public Universities (2012), and Chartered Institute of Project Management of Nigeria (CIPMN) committee (2015). Hussin & Omran (2011: 36) highlights the approaches of the Malaysian Ministry of Housing and Local Government (MHLG) to the revival process. As a government arm, it

acts as mediator/facilitator to house buyer committees, financiers and developers to determine the direction of the revival scheme; acts as adviser to project revivers (white knights) and other affected parties to ensure their full cooperation and commitment to revive the scheme; requests SPNB to conduct viability studies to revive and complete a project should no other party want to; allows for winding up of a developer and placing of a project under an official receiver or applying for a court order to appoint receivers and managers, or a white knight to revive

it with the consent of the majority of the buyers; allows a project financier, as debenture holder, to use its powers to appoint receivers to take control, revive and complete a project; and directs a company to assume, control and carry on the business of a developer vide the minister's powers under Section 11 (1) (c) or to use Section 11 (1) (d) to direct a developer to petition the High Court to wind up its business.

A strategy that can be inferred from these approaches is a department dedicated to resuscitating abandoned projects that will rekindle the hope of end users.

The stage of completion prior to abandonment is another factor that will inform the strategies to be deployed in order to revive it (Hussin & Omran, 2011). Motivating owners of abandoned properties to restore them purposefully through the instrument of law could improve the value of these properties, create jobs, and improve the landscape, because these development companies are equipped with the technical know-how and expertise (Dahlan, 2011). Dahlan & Mariappan (2012) note that Corporate Voluntary Arrangement (CVA) and the Judicial Management are the new insolvency approaches introduced by the Corporate Law Reform Committee (CLRC) of Malaysia, besides the most popular ones such as liquidation, receivership, and Scheme of Arrangement (SOA). In Malaysia, the affairs and business of a wound-up housing developer company are usually taken over by either the private liquidator or the provisional liquidator or the Official Receiver (OR) under the Department of Insolvency upon being petitioned. The liquidator may rehabilitate the abandoned projects left by the wound-up housing developer companies, if the projects are viable for rehabilitation with the approval of the creditors, contributors, the committee of inspection and the court and that there are adequate funds to finance the rehabilitation. If the project is not viable, it may be stalled for ever without any prospects for rehabilitation, to the detriment of the purchasers.

Abdul Rahman *et al.* (2013) suggested government-centred initiatives and the creation of a Special Task Force and a Special Purpose Vehicle as strategies for the resuscitation of abandoned projects. This recommendation seems to share a similar philosophy to that followed by the Malaysian government's special agency named Syarikat Perumahan Negara Berhad (SPNB), under the Ministry of Finance, to oversee the resuscitation of abandoned housing projects, among others (Khalid, 2010; Othman, 2012). Actions taken by these special task forces and vehicles should focus on strategies to prevent the occurrence of abandoned properties and on remedies to

address the problem of abandoned properties after it has occurred (Twumasi-Ampofo *et al.*, 2014).

The following strategies to resuscitate abandoned projects can be deduced from the reviewed literature:

- preserved right;
- provide alternative funding to complete the project with preserved rights;
- establish a special department for the resuscitation of abandoned projects;
- motivate owners of abandoned properties to restore them, or purposefully revive them by assistance from the courts, and
- intervention of a special government agency to determine viability and completion of the project.

## **2.2 Effectiveness of strategies for resuscitating abandoned projects**

Many of the tools that are currently allowed under the law and that can be useful are either not being used at all or are not being used effectively (Abandoned houses work group, 2004). Dahlan & Mariappan (2012) opine that the Corporate Voluntary Arrangement as recommended by the Corporate Law Reform Committee is insufficient to cater for the problems of abandonment of housing development projects of insolvent housing developer companies, especially for carrying out rehabilitation effectively in protecting the aggrieved purchasers' rights and other stakeholders. In their study on the abandoned project rehabilitation process, Abdul Rahman *et al.* (2013) recommend that further studies to investigate the efficiency and reliability of proposed remedies are very relevant.

Mallach (2006) notes that the basic elements of an abandoned property strategy – prevention, control, and reuse – are common to all cities, but specific strategies will vary from city to city, based largely on three key issues:

- *The dynamics of abandonment in the community.* Abandonment patterns vary from one city to the next and from one neighbourhood to the next within the same city. Each city's strategy must take into account the types of properties being abandoned and the factors that are triggering abandonment.

- *Market conditions.* Abandonment is driven by economics, and a city's options are affected by its market conditions. The stronger the real estate market in the city or region, the more options a city will have, and the easier it will be to find developers and owners eager to use their money to restore abandoned properties. Where the market is weaker, cities will have to provide incentives to encourage developers, owners, and homebuyers to restore vacant properties.
- *The community's plans and long-term goals.* Each community must frame its own vision of its future and design reuse strategies to fit into that vision.

The reuse of specific properties should grow out of a comprehensive strategy for the block, the neighbourhood, and the city as a whole. According to Mallach (2006), there are five critical elements or dimensions of an effective abandoned property strategy: preventing abandonment; creating and using information systems; gaining control of properties; organising city government to make abandoned property strategies work, and targeting resources strategically.

A successful strategy for both preventing abandonment and reclaiming abandoned and vacant properties begins with sound information. An effective information system not only enables a city to track conditions and identify problem properties, but also serves as the basis for an early warning system, identifying properties at risk of future abandonment. Unavailability of information on abandoned projects often necessitates the formation of a committee to appraise abandoned projects, mostly when there is a change in administration.

Figure 1 presents the conceptual framework of the study, based on the reviewed literature. There are six boxes in the framework. Generally, the objective of an initiated project is to commission it for use. The broken lead arrow from box 1 to box 2 explains this normal scenario. However, project abandonment factors (box 3) often disallow this primary objective. Hence, projects are delayed. If the project abandonment factors persist, they lead to abandon projects (box 4) with their consequences (box 5); otherwise they lead to commission (box 2). The adoption of strategies for resuscitating abandoned projects (box 6) will lead to eventual commission (box 2) of the projects, in order to fulfil the objective for which the projects were initiated.

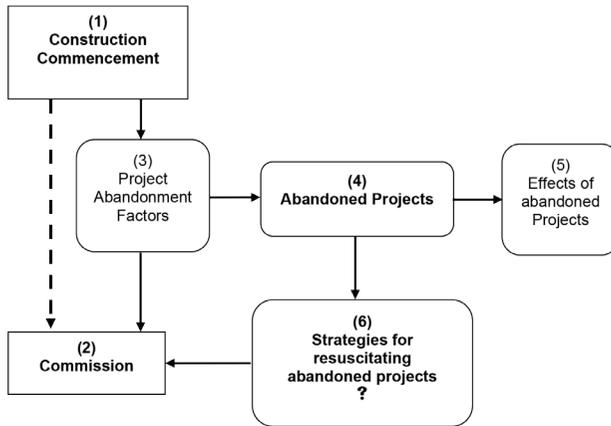


Figure 1: Conceptual framework for resuscitating abandoned projects

### 3. Research design

The study addressed the strategies for resuscitating abandoned construction projects with a view to suggesting sustainable cash-flow strategies that could be appropriated for their delivery. The study used a mixed methods design, in which qualitative and quantitative data were collected in parallel, analysed separately, and then merged (Bryman & Bell, 2003; Creswell, 2005). In this study, interview results from three stakeholders with over 10 years' involvement in building projects in public tertiary education institutions in Osun State were used to develop the theory on resuscitating abandoned construction projects in Nigeria. The questionnaire survey explored the financial strategies from 65 project developers for resuscitating abandoned construction projects. The reason for collecting both quantitative and qualitative data is to elaborate on specific findings from the breakdown of the building projects transcripts, such as similar resuscitating strategies suggested from the respondents' groups (Johnson & Onwuegbuzie, 2004; Creswell, 2005; Creswell & Plano-Clark, 2007).

### **3.1 Study area**

The assessment was based on building projects in public tertiary education institutions in Osun State that will enable proper capturing of all the abandoned and resuscitated projects in the study area (Committee on Needs Assessment of Nigerian Public Universities, 2012). Osun State lies in the southwestern region of Nigeria and has the highest concentration of tertiary institutions (*Osun Defender*, 2013).

The target population for the study comprised the 16 tertiary education institutions in Osun State, distributed as seven public and nine private institutions (Joint Admission and Matriculation Board, 2012; Directory of Accredited Programmes Offered in Polytechnics, Technical and Vocational Institutions in Nigeria (2016), and the key stakeholders involved in the development of construction projects in these institutions. The public tertiary institutions include two universities: Obafemi Awolowo University (OAU), Ile-Ife, established in 1962, and Osun State University (UNIOSUN), Osogbo, established in 2006; three polytechnics: Federal Polytechnic (FEDPOEDE), Ede, Osun State Polytechnic (OSUNPOLY), Iree, and Osun State College of Technology (OSCOTECH), Esa-Oke, all established in 1992, and two colleges of education: Osun State College of Education (OSCOED), Ilesha, and Osun State College of Education (OSCOED), Ila-Orangun, established in 1976 and 1979, respectively. The private institutions are six universities and three polytechnics. The private institutions were excluded from the study, due to their recent establishment. Most of them have been established for less than 10 years. In addition, private institution projects might not be well documented, because they are not constrained by transparency and accountability (Cartlidge, 2013).

### **3.2 Population, sampling method and size**

The target population consisted of the 65 physical development professionals: builders, architects, engineers and quantity surveyors, who are the in-house stakeholders involved in the administration and development of construction projects in the seven public tertiary education institutions. The study adopted a total enumeration method of the institutions, considering the relatively small size of the population that means a complete selection of all items in a population under study (Kothari, 2004: 58). According to Leedy & Ormrod (2010: 141), total enumeration sampling is appropriate where the population size is less than 100, and a desired level of accuracy is required (Mouton & Babbie, 2001). Table 2 shows the sample size for this study comprising all the 25 professionals in Physical Planning Units (PPU) and 52 in the PPU/Works Units (excluding seven professionals in

UNIOSUN satellite campuses and 4 others in OSCOED, Ila-Orangun, who are only involved in maintenance).

Table 2: Osun State public tertiary education institutions' physical development: Relevant professionals

Professionals Units	Sample size						%	Sample size
	Architect	M and E engineer	Civil/ Structural engineer	Builder	Quantity surveyor	Total		
*PPU	7	6	6	1	5	25	100	25
PPU/Works	2	16	14	3	5	40	100	40
Total	9	22	20	4	10	65		65

\*PPU – Physical Planning Unit

All the Works and Maintenance Unit professionals were excluded, because they were presumed to be involved in the maintenance of the physical properties after development, except the nine professionals in the Works and Maintenance Unit of OSUNPOLY, Iree, who are co-opted into physical development when necessary.

For the interviews, three professionals (key informants), who had undertaken the resuscitation of abandoned projects from the five institutions, were identified through the snowball sampling technique, considering their adequate years of experience and similar responses provided by them. According to Noy (2009: 327), snowball sampling generates a unique type of social knowledge that would be particularly valuable for an in-depth exploration of a key phenomenon such as the resuscitation of abandoned projects.

### 3.3 Response rate

From the 65 original questionnaires, 45 valid ones were retrieved, resulting in a response rate of 69.2%. According to Idrus & Newman (2002: 13) as well as Moyo & Crafford (2010: 68), the response rate is considered adequate as contemporary construction management survey response rates range between 7% and 40%, in general.

### 3.4 Data collection

A structured questionnaire survey was distributed to 65 physical development professionals involved in building projects in public tertiary education institutions in Osun State, Nigeria. The copies of the questionnaire were self-administered with the assistance of the institutions' staff members who served as field coordinators, from March to July 2015. Topics on the strategies for resuscitating tertiary

education institutions' abandoned building projects used in the questionnaire were extracted from reviews of the literature, resulting in the formulation of a questionnaire divided into two parts. Part 1 was designed to obtain the respondents' personal profile on current professional status, area of work, profession, institution employed in, position and years of experience in higher education projects, age, education qualification, and involvement in resuscitation. Part 2 set eight questions on strategies for resuscitating abandoned construction projects. The respondents were required to indicate the level of usage as well as the effectiveness of these strategies, in practice, on a five-point Likert scale, where 1 = not used/not effective; 2 = rarely used/less effective; 3 = sometimes used/effective; 4 = often used/more effective, and 5 = always used/most effective. Likert scales are effective where numbers can be used to quantify the results of measuring behaviours, attitudes, preferences, and even perceptions (Wegner, 2012: 11; Leedy & Ormrod, 2005: 185). To reduce the respondent's bias, closed-ended questions were preferred for Part 2 (Akintoye & Main, 2007: 601; Fellows & Liu, 2008).

Using snowball sampling, open-ended face-to-face in-depth interviews were conducted with three professionals (one key informant per institution) from universities, polytechnics, and colleges, who had undertaken the resuscitation of abandoned projects. The interviewees were requested to respond to five questions on resuscitation, in order to identify and assess in how many buildings and projects of resuscitation they were involved, the factors that informed the strategies used specifically at these institutions, and to explore the strategies that they suggest might be adopted for resolving the resuscitation problem in tertiary education institutions. With the consent of the interviewees, the interviews were audiotaped and the recordings were transcribed.

### **3.5 Data analysis and interpretation of findings**

In order to analyse and describe the profile of the respondents, the Statistical Package for Social Sciences (SPSS) version 22 (Pallant, 2013) was used to calculate the central tendencies of responses and to analyse them using descriptive statistics such as frequencies and percentages (Bhattacharyya & Johnson, 2014).

Arithmetic Mean/Mean Item Score was adopted to rank and determine the level of usage and the effectiveness of the strategies.

According to Jose & Montserrat (2009), if  $n$  numbers are given, each number denoted by  $a_i$ , where  $i = 1, \dots, n$ , the mean score is the [sum] of the  $a_i$ 's divided by  $n$  for each variable as follows:

$$AM = \frac{1}{n} \sum_{i=1}^n a_i = \frac{a_1 + a_2 + \dots + a_n}{n} \quad (\text{Equation 1})$$

Where:  $a_1$  = first value,  $a_2$  = second value,  $a_n$  = last value and  $n$  = sample size or number of values. To rank and determine the level of usage and the effectiveness of these strategies, the mean scores and standard deviation were reported (Naoum, 2007: 103).

For analysing the internal reliability of the questions on usage level and the effectiveness of the strategies, Cronbach's *alpha* values were tested (Kolbehndori & Sobhiyah, 2014: 347). Tavakol & Dennick (2011: 54-55) suggested that the acceptable values of Cronbach's *alpha* would range between 0.70 and 0.95. In the current study, a cut-off value of 0.70 was adopted.

The interview responses on strategies for resuscitating abandoned construction projects were analysed, using ATLAS.ti 7, and the result was interpreted by means of phenomenological interpretation. The latter is a technique that relies on audiotape recordings and transcriptions before coding responses (Sutton & Austin, 2015: 226). It also captures the similarities and differences as well as the ideas in people's responses. From the breakdown, responses were coded into two categories: strategies used and recommended strategies. These key points provided detail and support for the findings from the questionnaire survey, as well as emerging responses not covered in the questionnaire survey.

The Kruskal-Wallis Test was used to test the level of agreement in rating of the variables by the professionals from the universities, polytechnics, and colleges. The Kruskal-Wallis test is a non-parametric test suitable for comparing  $\geq 3$  independent groups of sampled data that are not normally distributed (Oyesiku & Omitogun, 1999; Fellows & Liu, 2008; Ibiyemi, 2009). A mean cut-off point based on mid-points was adjudged to be reasonable, in order to determine important or significant factors (Muhwezi, Acai & Otim, 2014). That is  $> 2.50$  on a 5-point Likert-type scale. Moreover, t-test showed no significant difference from 3.00. Hence, mean score cut-off point  $\geq 3.00$  was recommended for this study.

The hypothesis for the Kruskal-Wallis test with  $K \geq 3$  population can be written as follows:  $H_0$ : All  $K$  populations are identical, i.e.  $P_1 = P_2 = P_3 = \dots = P_n$ , and  $H_1$ : Not all  $K$  populations are identical, i.e.  $P_1 \neq P_2 \neq P_3 \neq \dots \neq P_n$ . The Kruskal-Wallis test statistic is given as follows;

$$K = \frac{12}{N(N+1)} \sum \frac{R^2}{N_i} - 3(N+1) \quad \text{degree of freedom} = K - 1 \quad (\text{Equation 2})$$

Where:  $K$  = number of populations,  $n_i$  = number of items in sample  $i$ ,  $N$  = total number of items in all samples, and  $R$  = sum of the ranks for sample  $i$ . If the  $p$ -value is small (i.e.  $< 0.05$ ), the idea that the differences are all a coincidence is rejected.

Findings from the questionnaire survey and interview results were compared, interpreted and cross-checked with evidences from the literature review to suggest sustainable resuscitation strategies for abandoned projects in tertiary education institutions. The overall results were structured to develop a conceptual framework for resuscitating abandoned projects (see Figure 2).

## **4. Discussion of results**

### **4.1 Profile of the respondents**

#### **4.1.1 Questionnaire respondents**

Table 3 presents the profile of respondents to the questionnaire. Of the total duly completed copies of the questionnaire, 22 (48.9%) were obtained from the universities, 14 (31.1%) from the polytechnics, and nine (20%) from the colleges of education.

It was established that, of those who responded to the questionnaire, 17% are Architects, 17% are Quantity Surveyors, 8.5% are Builders, 25.5% are Mechanical and Electrical Engineers, and 31.9% are Civil/Structural Engineers. The results show that the respondents represented all relevant construction professionals in the physical development of building projects. The data show that 28.9% of the respondents are polytechnic graduates (Ordinary or Higher National Diploma, OND/HND).

Table 3: Profile of the questionnaire respondents

<i>Background characteristics</i>		<i>Frequency</i>	<i>%</i>
Organisation of respondents	University	22	48.9
	Polytechnic	14	31.1
	Colleges of Education	9	20.0
Respondents' area of work	Physical planning/Work and maintenance unit	18	40.0
	Physical planning unit	20	44.4
	Work and maintenance unit	7	15.6
Profession	Architect	8	17.0
	M and E engineer	12	25.5
	Civil/Structural engineer	15	31.9
	Builder	4	8.5
	Quantity surveyor	8	17.0
Educational qualification	Polytechnic graduate (ND, HND)	13	28.9
	First Degree (B.Sc./B.Tech.)	10	22.2
	Postgraduate (PGD, M.Sc./M.BA/M.PA, Ph.D.)	22	48.9
Professional membership status	Graduate/Probationer	14	31.1
	Corporate	26	57.8
	Fellow	3	6.7
	No response	2	4.4
Official cadre of respondents	Director/Chief	10	22.3
	Assistant Chief/Principal/Senior	19	42.2
	Engineer I/QS I/Higher Technical Officer	10	22.2
	Engineer II/QS II/Technical Officer	6	13.3
Age (years)	<40	14	31.1
	40-49	16	35.6
	>=50	15	33.3
	Mean age (Mean±SD)	43.67±9.45	
Work experience (years)	<10	9	20.0
	10-19	18	40.0
	20-29	12	26.7
	≥30	6	13.3
	Mean years of work experience (Mean±SD)	17.02±9.91	

Table 3: Continued

<i>Background characteristics</i>		<i>Frequency</i>	<i>%</i>
Work experience in higher institution projects (years)	<10	22	48.9
	10-19	11	24.4
	20-29	8	17.8
	≥30	4	8.9
	Mean years of work experience (Mean±SD)	12.18±9.89	
Tertiary institution building project(s) resuscitated with respondents' involvement	None	14	31.1
	<5	28	62.2
	≥5	3	6.7

*N* = 45; *SD* = *Standard Deviation*

The highest number (48.9%) of the respondents had a Postgraduate Degree, and 22.2% of the respondents were university graduates (First Degree). From the information on the academic qualifications of the respondents, it can be inferred that these professionals possessed satisfactory academic training to understand the questionnaire and supply data for this study. Furthermore, the analysis of the respondents' professional qualifications showed that 64.5% of the respondents were corporate members of their professional bodies. In addition, 64.5% of the respondents were senior level officers at their respective establishments. Analysis of the respondents' involvement in the resuscitation of abandoned building projects showed that 68.9% of the respondents had been involved in the resuscitation of at least one project. This means that the respondents were qualified to provide information on the topic of resuscitating abandoned building projects.

#### **4.1.2 Interview respondents**

Table 4 presents the profile of the respondents in the interview. The interviewees were high level officers with over 10 years' working experience on tertiary education projects. The mean years of working experience of the respondents = 27. Moreover, they were involved in the development of a reasonable number of tertiary education institution projects which span all types of building projects and they participated in the resuscitation of the projects. This analysis strongly indicates that the information provided can be relied upon.

Table 4: Profile of the respondents to the interview

<i>Interviewee characteristics</i>	<i>Interviewee 1 (R1)</i>	<i>Interviewee 2 (R2)</i>	<i>Interviewee 3 (R3)</i>
Institution	University	College of Education	Polytechnic
Area of work in the institution	Physical Planning Unit	Work and maintenance	Physical Planning Unit
Profession	Civil/Structural engineer, Builder, Quantity surveyor, C and G examiner	Civil Engineer	Civil engineer
Official cadre	Chief technical officer	Senior Technical Officer	Senior engineer
Highest academic qualification	HND	HND	M.Sc.
Professional affiliation(s)	MNIQS, M.I.E (London), MIOB (Britain)	NATE	MNSE
Years of work experience	40 years	33 years	18 years
Years of work experience on educational institution projects	39 years	33 years	10 years
Number of educational institutions building projects involved in	About fifty (50)	15	25
Type(s) of educational institutions projects involved in	Faculty/Dept buildings, lecture theatres, hostels, administrative buildings, libraries, bookshop, classrooms, laboratories, workshops	Faculty/Dept buildings, lecture theatres, hostels, administrative buildings, libraries, bookshop, classrooms, laboratories, workshops	Faculty/Dept buildings, lecture theatres, hostels, administrative buildings, libraries, bookshop, classrooms, laboratories/workshops

HND = Higher National Diploma; MNIQS = Member of the Nigerian Institute of Quantity Surveyors; MIE = Member of the Institute of Engineers; NATE = North American Technician Excellence; MNSE = Member of the Nigerian Society of Engineers

## 4.2 Questionnaire results

### 4.2.1 Strategies for resuscitating abandoned building projects

Table 5 presents the assessment of strategies for resuscitating tertiary educational institutions' abandoned building projects.

The results show 'soliciting for funds' (MS = 3.40) as the most frequently used strategy (Table 5). The need for solicitation for funds to complete

Table 5: Strategies for resuscitating abandoned projects

S/No	Strategies for resuscitating abandoned projects	MS	SD	Rk	U		P		C		Kruskal-Wallis Test	
					MS	Rk	MS	Rk	MS	Rk	K-W	p
1	Solicitation for funds	3.40	1.05	1	3.73	1	2.79	4	3.56	1	7.574	<b>0.023</b>
2	Yearly budgetary allocation for abandoned projects	3.18	1.30	2	3.23	4	3.29	1	2.89	7	0.848	0.655
3	Abandoned projects resuscitation policy	3.16	0.90	3	3.18	5	3.00	3	3.33	3	1.031	0.597
4	Established institution-based abandoned project resuscitation unit/department	3.16	1.24	4	3.45	2	2.43	6	3.56	1	7.268	<b>0.026</b>
5	Use of abandoned projects appraisal committee	2.96	1.11	5	3.18	5	2.79	4	2.67	8	1.915	0.384
6	Adoption of Public Private Partnership (PPP) arrangement	2.93	1.32	6	3.27	3	2.36	7	3.00	5	4.262	0.119
7	Government-based abandoned project resuscitation agency	2.89	1.34	7	2.68	7	3.14	2	3.00	5	1.339	0.512
8	Levy of beneficiaries	2.58	1.31	8	2.50	8	2.21	8	3.33	3	4.261	0.119
	Cronbach's alpha	0.816										

Note: MS = Means Score, SD = Standard Deviation, Rk = Rank, U = University, P = Polytechnic, C = College, K-W = Kruskal-Wallis, p = p-value

abandoned projects, which at a point had received budget allocations, raised the question as to how the initial budgeted fund was appropriated. This may suggest diversion or embezzlement of the unspent budgeted fund through compromise of processes (corruption), which earlier studies had established as one major cause of project abandonment (Ayodele *et al.*, 2011; Otim, Alinaitwe, Tindiwensi & Kerali, 2012; Ewa, 2013; Ubani & Ononuju, 2013). It can be inferred that an abandoned project may be a foregone project if the envisaged end users do not use solicitation. Yearly budgetary allocation for abandoned projects (MS = 3.18) ranked 2<sup>nd</sup>. This is expected to be in use and the ranking is not unexpected, because budgeting is like an annual ritual in an institution. 'Abandoned projects resuscitation policy' and 'established institution-based abandoned project resuscitation unit/department' had equal MS = 3.16. However, standard deviation of the former shows that it clustered more than the latter. Hence, 3<sup>rd</sup> and 4<sup>th</sup> ranking. Levy of beneficiary (MS = 2.58) ranked the least used strategy for resuscitating abandoned projects. The low ranking of 'levy of beneficiary' could be explained by the resistance from the end users as previous attempts to adopt this strategy has failed because end users often question the accountability of these budgeted funds. With more transparency and accountability on the part of the executor, 'levy of beneficiary' might gain appreciable acceptance and usage.

The low ranking of 'the use of appraisal committee' (MS = 2.96) is unexpected, considering the trends of its adoption, as identified in previous studies (Kotangora, 1993, cited in Ayodele & Alabi, 2011; Presidential Projects Assessment Committee, 2011; Committee on Needs Assessment of Nigerian Public Universities, 2012). The establishment of special committee(s) by the authority will be unnecessary if ministries, departments and agencies (MDAs) are held responsible for the inadequate documentation on abandoned projects. The use of committees has been criticised as being a mere measure to douse agitation for a course. The Kruskal-Wallis test (see Table 5) indicates that there is no significant difference in the use of the identified strategies across the institutions' categories, except in respect of 'solicitation for funds' (p-value = 0.023) and 'established institution-based abandoned project resuscitation unit/department' (p-value = 0.026). The observed disagreement on the use of the two strategies is due to responses from polytechnics respondents, because those of universities and colleges were closely related. This implies that the polytechnics have not succeeded in using solicitation for funds to resuscitate their abandoned projects. Likewise, there is no institution-based establishment with the sole aim

Table 6: Effectiveness of strategies for resuscitating abandoned projects

S/No.	Strategies for resuscitating abandoned projects	MS	Rk	U		P		C		Kruskal-Wallis Test	
				MS	Rk	MS	Rk	MS	Rk	K-W	p
1	Solicitation for fund	3.36	1	3.41	1	3.21	3	3.44	1	0.573	0.751
2	Yearly budgetary allocation for abandoned projects	3.33	2	3.27	4	3.64	1	3.00	5	1.509	2.441
3	Abandoned projects resuscitation policy	3.24	3	3.36	3	3.00	4	3.33	2	2.441	0.295
4	Use of abandoned projects appraisal committee	3.09	4	3.00	6	3.43	2	2.78	7	2.606	0.272
5	Adoption of Public Private (Partnership) PPP arrangement	2.93	5	3.18	5	2.86	5	2.44	8	2.578	0.276
6	Establish institution-based abandoned project resuscitation unit/department	2.91	6	3.41	1	1.93	8	3.22	3	14.135	<b>0.001</b>
7	Government-based abandoned project resuscitation agency	2.84	7	2.95	7	2.43	6	3.22	3	1.993	0.369
8	Levy of beneficiaries	2.60	8	2.68	8	2.29	7	2.89	6	1.397	0.497
Cronbach's alpha 0.731											

Note: MS = Means Score, SD = Standard Deviation, Rk = Rank, U = University, P = Polytechnic, C = College, K-W = Kruskal-Wallis, p = p-value

of resuscitating abandoned projects in the polytechnics, as attested to in the universities and colleges.

#### **4.2.2 Effectiveness of strategies for resuscitating abandoned projects**

Table 6 presents the assessment of the effectiveness of strategies for resuscitating tertiary education institutions' abandoned building projects.

The rankings of the effectiveness of the resuscitation strategies and the frequency of use of the strategies are similar (Table 6), except for 'establishment of institution-based abandoned project resuscitation unit/department' which ranked 3<sup>rd</sup> (MS = 3.16) in use, but 6<sup>th</sup> (2.91) in effectiveness. The most effective strategies identified (Table 6) are 'solicitation for funds' (MS = 3.36), 'yearly budgetary allocation for abandoned projects' (MS = 3.33), and 'abandoned project resuscitation policy' (MS = 3.24), which ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively. The Kruskal-Wallis test (Table 6) showed that the respondents agreed on the effectiveness of the strategies based on institutions categories, except in respect of 'established institution-based abandoned project resuscitation unit/department' (p-value = 0.001). The observed disagreement is similar to the results on the frequency of use. This is due to the perception of the respondents from the polytechnics who may have premised their response on needless duplicity of units and level of effectiveness of existing units.

### **4.3. Interview results based on categories**

#### **4.3.1 Strategies used**

This category captured the interviewees' involvement with the general strategies used for resuscitating abandoned projects.

The results of the interviews affirmed that, although there are no specific resuscitation strategies to which the institutions adhere, funding for the resuscitation of an abandoned project was one of the main strategies. Funding was received mainly from government or from government agencies; TETFund and capital grants are seemingly the most forthcoming strategies. Add to this the attendant amount of paper work through solicitation. For example, interviewees 1 and 2 asserted this differently:

*"There is no specific strategy on resuscitation. If any project is suspended or abandoned, resuscitation depends on government policy which determines cash flow. However, priority of projects like building for academic, hostel, research, then*

*welfare of staff are put into consideration. Internally generated revenue (IGR) could be used if it is a large sum of money. But in most cases, the money realized through IGR is limited and should be distributed to several needs. For instance, you cannot think of facing a project of 100 million naira with IGR. For the structure (the interviewee was referring to an abandoned and resuscitated 7-storey office complex at the Obafemi Awolowo University, Ile-Ife) itself to get to a certain stage NUC and ETF helps out, while other facilities like furniture, air conditioning and others were handled with IGR. Periodically, as demanded by the NUC, we send our rolling plan – plan of projection for at least the next four years, in order of priority, and for instance out of a list of 10 we may be helped out in three" (University, Civil/Structural Engineer, C and G Examiner, HND, 39 years' work experience in educational institution projects).*

*"The project was budgeted for, and the money for the project was put in a bank. However, we don't allocate money for work, we used direct labour." (College of Education, Civil Engineer, HND, 33 years' work experience in educational institution projects).*

This means that the resuscitation of a suspended or abandoned project depends on government policy, which determines the cash flow and magnitude of costs required in order to finance the resuscitation of a project.

Other strategies identified include the use of internally generated revenue (IGR) and repackaging of the capital project into another year's budget allocation. Direct labour or IGR may be used to resuscitate less capital-intensive projects. Abandoned projects requiring over N100 million may have to be financed through other strategies such as repackaging the project into another year's government allocation, as opined by interviewee 3: *"We put it in another year's federal allocation, and use direct labour."* (Polytechnic, Civil Engineer, M.Sc., 10 years' work experience in educational institution projects).

#### **4.3.2 Recommended strategies**

This category captured the interviewees' perception on recommended strategies to use in resuscitating abandoned projects.

Despite the limited capacity of the use of IGR, the respondents alluded to the fact that its adoption has succeeded in funding the resuscitation of abandoned projects when solicitation for funds failed. The use of IGR will involve yearly allocation. Interviewee 3 opined that the current system of administration of TETFund for capital projects has encouraged the completion of projects and discouraged

solicitation to fund abandoned projects, because subsequent funds for such abandoned project would not be approved by TETFund, if previous disbursement is not accounted for. Moreover, the institutions adopted the use of donations by the alumni associations, as asserted by interviewee 1:

*"Intimate the Alumni association about the proposed project and need for financial assistance, secure their cooperation and commitment and let them communicate same to the management on their position. Besides, prioritize the projects and face them one after the other; avoid facing all the abandoned projects at a go." (University, Civil/Structural Engineer, C and G Examiner, HND, 39 years' work experience in educational institution projects).*

The approach, in this instance, had been to tell the Alumni association about the proposed project resuscitation for financial assistance to secure their cooperation and commitment. In addition to the identified opinions, one of the interviewees suggested a combination of government allocation and IGR:

*"What should be done normally is to use more of government allocation; 80% of abandoned projects could be completed through federal allocation yearly, then the remaining 20% through IGR." (Polytechnic, Civil Engineer, M.Sc., 10 years' work experience in educational institution projects).*

## **5. Proposed framework**

By harmonising the findings of the study, the initial conceptual framework (Figure 1) for the resuscitation of abandoned projects in tertiary education institutions could be modified as shown in Figure 2. The framework provides possible options which construction project developers can adopt for the resuscitation of abandoned projects. These identified strategies could be modified to suit different types of project. This will ensure the completion of every initiated and abandoned project.

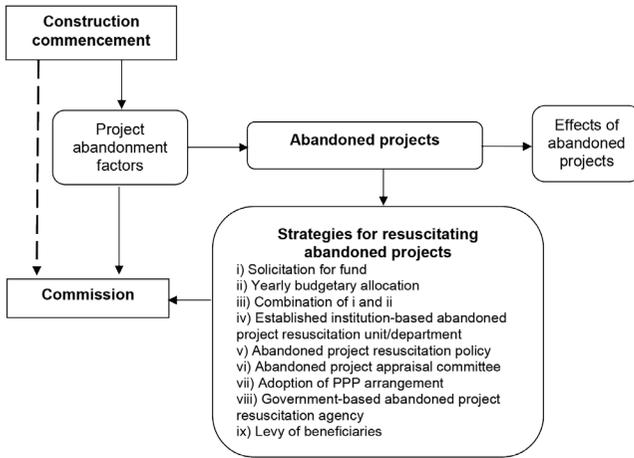


Figure 2: Conceptual framework for resuscitating abandoned projects

## 6. Conclusions

This article examined the strategies for resuscitating abandoned construction projects by exploring some selected projects in the Nigerian tertiary education institutions. The study adopted a triangulation of qualitative and quantitative methodology. An in-depth literature review identified the resuscitation strategies that were assessed by means of questionnaires. Whereas the findings of the quantitative assessment link up with those reviewed in the literature that were evaluated by means of a questionnaire survey, additional resuscitation strategies comprising Tertiary Education Trust Fund (TETFund) grant, Federal government special allocation, internally generated revenue (IGR), involvement of the institutions' alumni associations, and use of direct labour were identified as appropriate in the specific cases of the tertiary education institutions' projects in the study area. In both qualitative and quantitative assessments, strategies often used for the resuscitation of abandoned public tertiary education institutions' projects were found to be solicitation for funds and yearly budgetary allocation. This implies that end users' disposition to the abandoned projects is an excellent motivating factor for resuscitating abandoned property. On the other hand, the adoption of public-private partnership (PPP) arrangement, government-based abandoned project resuscitation agency, and levy of beneficiaries were the least used strategies. However, the adoption of the latter strategies might be improved by the application of an

executive order. This implies that resuscitators of abandoned projects in the public tertiary education institutions in Nigeria should not expect funding from end users. However, the respondents differed across the categories of institutions on solicitation for funds as a significant strategy. Moreover, considering the paucity of funds and limited IGR for financing institution projects, soliciting for funds to resuscitate abandoned projects is understandable. However, the administration of such funds must be properly accounted for, in order to justify future financial aid. The need for accountability is imperative because, in most instances where funds are disbursed to finance projects, it appears that nobody seeks feedback on how the funds were used. This scenario is, of course, very significant to project abandonment in the case of public projects. Budgetary financing is worthwhile as the most reliable source of funds coming directly from the government. It appears that there are flaws in the utilisation of the yearly budgetary allocation for abandoned projects, because different managements leave numerous abandoned projects unattended. Findings showed that the most used strategies (solicitation for funds and yearly budgetary allocation) are the most effective.

The article provides both theoretical and practical implications for project financing. Earlier studies identified both the causes and the effects of abandonment. This article expounds on the earlier studies on project abandonment by identifying financing strategies that could be adopted for resuscitating abandoned projects. As such, understanding sustainable cash-flow models that are appropriate for resuscitating abandoned projects would help, to a greater extent, the management of tertiary education institutions in Nigeria employ the most effective strategies. Besides, lessons based on this finding could be of benefit to other institutions in deciding on suitable resuscitation strategies. A number of lessons were documented based on the findings. First, accountability in respect of government funds (Federal and State) is highly demanding. This relates essentially to strategies such as budgetary financing and TETFund model which seem to be the most forthcoming and robust options for the resuscitation of abandoned projects in tertiary education institutions. As such, the management at tertiary education institutions should ensure the proper documentation of budget disbursement and expenditure, as accountability for the funds is often considered a prerequisite for future tranches. A proper implementation of the projects in this regard would suggest accountability on the part of management. The fact that management at tertiary education institutions do not have a specific strategy for resuscitating abandoned projects suggests that the institutions should establish or improve the existing

units (if there are any) who could document the strategies that work best. It would also be important that resuscitation requiring less than N100 million (as at 2018) should be approached through direct labour or IGR, while resuscitation requiring over N100 million may have to seek other strategies such as repackaging the project into another year's government allocation. Management may also have to build a strong network of alumni who would go along with the institutions' strategic plans. This would enable the institutions' governing councils to explore the alumni network strategy in order to finance abandoned projects within the institutions' strategic plans. The approach, in this instance, would be to tell the Alumni association about the proposed project resuscitation and request financial assistance, in order to secure their cooperation and commitment. However, an effective communication network and accountability would also be essential in this regard.

Whereas the article used the mixed methods approach, limited generalisation of the findings may be considered for resuscitating other public institutional facilities, as specific characteristics such as the use of the alumni fund are restricted to tertiary education institutions. Generalisation of the findings to privately owned institutions may also be restricted because budgetary financing and TETFund model, which are the most used resuscitating strategies for abandoned projects in the public tertiary educational institutions, are not available to the same extent for private institutions in Nigeria. Future research may seek resuscitating strategies that are suitable for use in abandoned projects in privately owned institutions. Research may also be done to explore innovative strategies such as public-private partnership strategies, which obviously ranked very low in this study.

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