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# Analysis of project financing sources and their effects on projects' costs in Nigerian construction domain.

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## Abstract

This research is on Project Financing in Nigeria. It examines the problems of project financing in the country, which include the following: Lack of adequate sources of finance for the development of projects; lack of information on appropriate sources of finance for projects development; failure of applications to the appropriate finance sources which in most cases result to project abandonment and, or project cost over-run. In attempting to prefer solutions to these problems, a critical analysis of the collected data was carried out using the following decision criteria in carrying out the financial appraisal of the studied projects: Simple inspection method, Cost-Benefit analysis, Equivalent uniform annual cash flow (EUACF), Internal rate of return (IRR), Present value (Worth). The results of the study show that most public projects financed using direct financing method are abandoned due to one problem or another. Contractor financing was, therefore, applied in financing such projects. In conclusion, the research revealed that the economic system in operation determines the source(s), of finance for any project. In view of the findings of the research, it is recommended that a complete re-organization of the existing institutional framework of the project financing sector in the country be carried out.

Keywords: Project; Financing; Cost-benefit; Rate of return; Present worth

## 1. Introduction

The objective of this research is to make a thorough study of the major sources of finance for project execution in the country, and investigate the effects of such financing arrangements on the costs of projects. The numerous problems beclouding project financing in the country, such as lack of adequate sources of finance for the development of projects; lack of information on the appropriate sources of finance for projects development; failure of application to the appropriate finance sources, and, other project financing problems in the country necessitated this research. The study aims at examining the prospects and problems of the various methods of project financing in Nigeria, with a view to analysing the effects of such financing arrangements on the projects' costs.

Finance is the fulcrum on which all project operations rotate. It is required in all facets of project activities. Hence, proper financing is important in successful project execution. In fact, the identification of the need for a project is an important aspect of the economics of project execution. It is very important to determine from the onset the nature and scope of the project before proceeding to the design phase, and ultimately the arrangement of the finance package. Project execution depends largely on the ability of clients, contractors, developers and potential purchasers to raise funds [1].

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Considering the aforementioned, it becomes clear that many projects are abandoned in the country after huge amounts of money have been invested on them. The concept of project financing encompasses the action of demand and supply forces to bring it to fruition. The knowledge of the basic economic and management principles and their analysis, therefore, helps in determining the sources and uses of funds. It also relates to income, repayment ability and, hence, risk management determines the total amount the project can conveniently use. Thus information on the legal aspect of borrowing, leasing, lending and contractual arrangements help the client/contractor/developer to select the means of acquisition and control of resources that would constitute most of his Development operations. Hence, the significance of this research is that it furnishes an understanding of the project/development lending policy of financial institutions, the regulatory and legal situation in which they operate. This assists in the selection of the lending institutions that can conveniently and adequately provide the required funds needed for project execution.

## 1.1. Project Categories

The details of financing any project depends on the category of projects in which it falls, and upon whether the project is owned privately or publicly.

The scope of projects is very diverse, however, projects can be divided into four main categories; although there are some overlaps among these divisions, and certain projects do not fit into any one of them. These categories are:

- Research projects
- Industrial projects
- Engineering projects
- Agricultural projects.

### 1.1.1. Research Projects

These are projects that are mainly carried out for research purposes. They include medical, agricultural, chemical, industrial, educational, market research projects, and so on. Both private and public capital finance projects in this category. International bodies like the UNICEF, the International Red Cross, *etc*. finance research projects in various countries of the world. Individuals, private entities, and public organs also source funds for financing research projects with the ultimate aim of producing results for practical applications [2].

### 1.1.2. Industrial Projects

Industrial projects are projects that are carried out for industrial works. They include the erection of projects associated with the manufacturing or processing of a commercial product or service. Such projects are frequently executed by specialized contracting firms that do both the design and construction under contract with the project owners. Petroleum refineries, steel mills, chemical plants, electric power generating stations and similar firms are all examples of industrial projects. Industrial projects could be financed with private capital, public capital, or by using foreign loans, grants and so on.

### 1.1.3. Engineering Projects

Engineering projects spectrum is a very broad one, covering structures that are planned and designed by professional engineers. The actual construction is carried out by a contractor under contract arrangement with the project owner, and with the engineer's supervision. Most Engineering projects are publicly financed. Governments and multinational companies undertake the financing of highways, heavy construction projects, roads and so on.

### 1.1.4. Agricultural Projects

These are projects that fall into the agricultural sector. The sector is broad, and the projects that are in it are diverse in nature. Private capital mostly finances agricultural projects. Individuals, private organizations and companies invest funds on such projects. Public funds are also used in financing them, for example, governments and international organizations fund agricultural projects.

## 1.2. Project Conception

The identification of the need of a project is an important aspect of the economics of project execution. It is important to determine from the outset the nature and scope of a project before proceeding to the design phase, and ultimately the arrangement of the finance package. Project execution depends largely on the ability of clients, contractors, developers and potential purchasers to raise finance [3]. It is closely linked to the general economic situation. During periods of recession, the number of projects initiated usually diminishes. For example, public sector housing

programmes have at several times been slowed down by reduced government expenditure, but because of the complexity of the house building process, there is inevitable time lag before the halting of activities at the project site. Finance is required in all facets of project activities. Hence proper financing is all important to successful project execution [4]. Different forms of finance on varying terms from diverse investing agencies are available to the project development sector.

It has been proved in a study that capital required for project financing is scarce and is influenced by such factors as the state of the economy, inflation level, level of technological advancement, banks' lending rates, the size and nature of the project, among others. The decision to embark on the execution of any project hinges on these mentioned factors [5].

Proper financing is all important to successful completion of any project. Project execution involves all kinds of risks and expenditure, and only in exceptional cases has the investor all the funds needed to execute the project. It is, therefore, usually necessary for the risks and financial burdens to be spread amongst those parties best able and willing to bear them. This has always been the case because to a single individual, the huge amount of money required by such a venture could mean tying down his productive capital in a single investment. Little wonder then that investors prefer credit financing which are loan facilities obtained from individuals, financial institutions and other specialized lending outlets and agencies as the best attractive method of financing most projects [6 &7].

Loans for project financing could be short-term or long-term. However, whether it is short or long-term, the method of raising finance is based on the principle of creating an investment in the project. The owner can use the property simply as a security for a bank loan [8]. The sources of finance determine the ability of the project to make profit and the level of associated risk .

## 1.3. Types of Funds in Project Financing in Nigeria

Finance for project execution can be classified with reference to time duration in three categories namely:

Short term finance: These vary from overnight loans to those not exceeding two years

Medium term finance: These are loans which vary from 2 to 20 years before they are repaid.

Long term finance: These are in form of loans with fixed interest rates. A high degree of security is charged on the property/asset, as well as equity investment, with a greater degree of risk and a share in the project [9]. The main sources of long-term loans are financial institutions like the insurance companies, property companies, mortgage banks, building societies, and so on (10). Such specialized banks in project financing as the Nigerian Industrial Development Bank (NIDB), Federal Mortgage Bank of Nigeria (FMBN), the Nigerian Bank for Commerce and Industry (NBCI) provide long-term loans to investors in project development and execution .

Other sources of long-term finance include Property Bonds, Unit Trusts, and the Nigerian Agricultural and Co-operative Bank (NACB), Sale and Leaseback, Trust Funds, Contractor Finance, and Part Debt Financing .

Idehi (1994) asserted that this classification only expresses the relationship between time of the loan grant and its repayment. This means that they express relationships rather than absolute time periods.

## 1.4. Contractor Financing

### 1.4.1. Turnkey Project Financing

Contractor finance as "financial engineering". Also called "turnkey project finance"; it requires the contractor to raise the funds, carry out the project execution and then hand over the completed project to the client. Payment can be made in bulk or installmentally over a long period of time [11]. This type of arrangement is advantageous in that it saves the owner the trouble of scouting for sources of funds. He, however, pointed out some inherent disadvantages such as poor quality of work due to the contractor's desire to maintain economy of materials, and, that the contractor may demand equity share as part of the deal [12].

### 1.4.2. Part Debt Financing

Under this method of financing, the owner of the project borrows part of the money (capital) required for the development and provides part from his equity capital. This type of financing, though relegated, is one of the most efficient and effective ways of financing projects [14]. This method reduces the interest that will be paid to the creditor

bank. When it is a wholesome debt financing, a bigger amount is paid as interest but when it a part financing mechanism a smaller amount is paid as interest [15]. Financing projects with part-debt finance has enormous financial advantages.

### 1.4.3. Purchase/Leasing as a Method of Project Financing

Leasing as a form of financing has developed rapidly. Orji (1991) commented that it is now an important source of financing a wide variety of capital assets. He defined leasing as non-cancellable contractual commitment on the part of the leasee to make a series of payments to the leasor for the use of an asset. The leasee acquires most of the economic values associated with outright ownership of the asset, even though the leasor retains title to it.

### 1.4.4. Interim Financing/"Warehousing"

Sangosanya (1992) wrote that interim financing refers primarily to construction financing in project/real estate development. He, however, recognized other kinds of interim financing arrangements, the most important of which he wrote is the 'warehousing' of mortgage loans by commercial banks to mortgage banks.

"Warehousing"

Sangosanya wrote that commercial banks frequently make short-term funds available to other mortgage lenders that allow those lenders to hold inventories of mortgages of relatively brief periods of time. This, as averred by Sangosanya is analogous to the short-term loans made available to non-financial businesses to allow them hold or "warehouse" their inventories. This practice, he called "warehousing". The "warehousing" loan can be a short-term collateral note with a block of mortgages serving as general security. This can be made due on demand or due in a stated period of time, for example, three months or six months. The "warehousing" loan can also be a line of credit established between a bank and a borrower [16].

## 1.5. Classification of the Major Types of Funds for Project Financing in Nigeria

Orji (1989) wrote that there are numerous types and modes of raising funds for project execution in the country. He summarized specific methods of project financing in the country as follows:

**Table 1** Classification of the possible Types of Finance according to Time Periods

| S/no. | Short-term | Medium-Term | Long-Term |
|---|---|---|---|
| 1 | Retained Profits | Retained Profits | Retained Profits |
| 2 | Overdrafts | Banks and private Loans | Personal Savings, Gifts and inheritance |
| 3 | | Leasing | Debentures |
| 4 | Trade Credits | Hire purchase | Sale of Shares |
| 5 | Stop Orders | Insurance Companies | Mortgages |
| 6 | Accrued Taxes factoring | Development and Mortgage Bank Loans | Leases, Private loans, Development and Mortgage Bank Loans. |
| | | Government and Government-backed loans and grants | Insurance companies, Government and government-backed grants and loans. |

Shown above are possible avenues of capital availability after the project's financial needs have carefully been budgeted for [17].

He also wrote that there are many sources of finance for project execution open to both the project owner, the contractor or the developer, and that the one he selects will depend on the following factors:

- The amount of capital required
- The period over which the capital will be needed
- The risk element that might be involved
- The development or project execution period
- The purpose for which the capital is to be used.

In general, any project owner, contractor or real estate developer prefers to have as few variables of elements in his calculations as possible, and is accordingly inclined to pay a slightly higher rate of interest if he can be assured that the rate will remain fixed for the period of the loan [ 18 &19].

Falegan (1989) enumerated the following funds available for project development, depending on the time lag involved in the process:

- Internal or External
- Public or Private
- Traditional or Contemporary
- Short, Medium or Long term.

From the above, Falegan observed that there is no clear distinction between the various sources as they are interwoven, and most times overlap. The project investor can be an individual, a group, a partnership, a syndicate, trustee, cooperative and corporate bodies, or governments. Investors either use equity capital or loan. Equity capital is fully owned by the investor (the owner, contractor or developer) and there are no liens or attachments or conditions on the capital [20].

## 1.6. Foreign Funds for Project Financing in Nigeria

Ugwummadu (1984) wrote that there are various methods of project financing in Nigeria using foreign funds. These, he wrote, include direct financing by some international bodies like the World Health Organization (WHO), the United Nations Children's Education Fund (UNICEF), the World Bank, Foreign Contractor Financing, and so on.

Foreign contractor financing is a contractual arrangement whereby the contractor undertakes to finance and execute a project with the expectation that the money or material invested will be recovered within a specified period of time, and under specific terms [21].

Winger Alan *et al.* (1989) wrote that contractor project financing is, therefore, an investment opportunity open to both foreign and local contractors. It may be adopted in the following situations:

- Where a huge amount of foreign exchange is involved
- Where the successful execution of the project requires the technical knowhow of foreign expatriates and imported equipment and materials
- In financing of turkey projects as this method allows the contractor total control for a more effective management of the project
- Where funds are not readily available for the project(s') direct financing
- Where the contractor is the proposer of the project and thereby committed to the risk of feasibility and viability
- Where there is need to commit a foreign contractor to the project, and thereby avoid the risk of abandoning the project due to lack of funds
- A combination of any two or more of the above situations.

Abah (1991) commented that foreign contractor project financing takes so many forms depending on the circumstances surrounding the project, and the agreement between the contractor and the project owner (either private or public) relative to the objectives of the two parties. The Various Types, Sources, and Methods of Financing Projects in Nigeria using Foreign Funds include:

- Foreign Loans for Project Financing
- Foreign Partnership as a Source of Project Finance
- Foreign Reserve as a Source of Fund for Project Financing
- Project Financing through Joint Venture Agreements between Foreign Companies and Nigerian Governments.

## 2. Methodology

### 2.1. Data Collection

Extensive data gathering was embarked upon. The Sources of Data include the use of questionnaires, direct interviews and inspection surveys. Staff of financial institutions, central bank of Nigeria (CBN), states and federal governments' ministries of finance, works and housing, landed property developers/investors were interviewed. Information was also obtained from contractors and builders. Questionnaires were administered on the literate contractors/property developers, staff of some project executing companies, consultants and financial institutions. The illiterate ones were interviewed orally. In an effort to ascertain the problems of project financing in the country, personal inspection (direct field observations) of construction sites and built-up areas were also made. In addition to these primary data, references were made to books, journals, newspapers, magazines, reports of conferences and other forms of published and unpublished materials that were considered relevant to the research aims and objectives. In obtaining secondary data, efforts were made to extract the relevant materials from libraries, publications of federal and state ministries, central bank of Nigeria annual reports and those of other financial institutions, and from federal and state governments' press releases on projects development.

### 2.2. Data Analysis

A critical analysis of the collected data provided the necessary information required to support assertions, arguments and postulations made in this research. Data collected were compiled, edited and analysed to reveal the required information and observations. Thus, the following decision criteria were used for the financial appraisal of the projects researched on:

- Simple Inspection Method
- Cost-Benefit Analysis
- Equivalent Uniform Annual Cash Flow (EUACF)
- Rate of Return
- Present Value (worth)
- Internal Rate of Return (IRR).

#### 2.2.1. Present Value and Internal Rate of Return

The present value at the market rate of interest and the internal rate of return (IRR) are both measures which convert the stream of profit into one number, and the present value is considered a better guide than internal rate in project selection as it yields a measure of total gain. If the stream of profits $p_0$, $p_1$, $p_2$, ...., $p_n$, with a positive figure representing net profit and a negative figure for net loss or the net expenditure, the "present value" of the stream is simply the discounted sum of this stream, the discounting being done at the appropriate rate of interest, i.

Representing the present value of the project at interest rate i as $v_{(i)}$, we have

$$v_i = \sum \frac{p_t}{(1+i)^t} \qquad\qquad 2.1$$

It is, of course, possible that the interest rate could vary over time. Suppose that the interest rate between year 0 and year 1 is i, and that between year 1 and year 2 is $i_2$ *etc.*, then the present value of the project will be given as:

$$v(i_1, i_2, ..., i_n) = \sum \frac{p_t}{(1+i)\ldots(1+i_t)} \qquad\qquad 2.2$$

This is the general form of eqn. 3.1, where $i_1 = i_2 = i_n$

The interest rate at which $v_{(i)} = 0$ is called the internal rate of return. It is perfectly possible in principle that the present value of a project may become zero at more than one rate of interest. The problem of dual internal rate of return has, however, less practical consequences. The most recent development in the use of the present value and internal rate of return are the application of computers and the development of computer programmes which have eliminated the drudgery previously associated with the trial-and-error method in determining the interest rate, i.

### 2.2.2.   Cost-Benefit Analysis

This is widely used for investment analysis in public projects. It is one of the systematic approaches often used in selecting project alternatives.

The criteria for the Cost-Benefit method of project analysis are as follows:

If benefit (B)/Cost (C) > 1.0, accept;
If B/C = l.0, point of indifference;
If B/C < 1.0, reject.

Benefits-Cost
Benefits-Cost analyses frequently rely on the Benefit-Cost ratio or on sometimes, Benefits less Costs (B-C), if
$B_x t$ = Public benefits for a project during year t,
t = 1, 2, 3, …. , n,
$C_x t$ = Cost associated with project during year t,
t = 0, 1, 2, …. , n,
Then B/C decision criterion may be expressed mathematically as

$$B/C(i) = \frac{\sum B_x t(1+i)^{-t}}{\sum C_x t(1+i)^{-t}} \qquad 2.3$$

where i is the chosen interest rate.

or

$$(B-C)i = \sum (B_x t - C_x t)(1+i)^{-t} \qquad 2.4$$

For the (B – C) criterion.

For multiple alternatives appraisal, an incremental basis is used. This requires, first, the ordering of the alternatives from lowest to highest cost (in terms of present worth of annual equivalent *etc.*). Then, the change in benefits of the second alternative over the first, $\Delta B_{2-1}(i)$ are divided by the change in cost of the second over the first, $\Delta C_{2-1}(i)$.

This is given by –

$$\Delta B/C_{2-1}(i) = \frac{\Delta B_{2-1}(i)}{\Delta C_{2-1}(i)} \frac{\sum (B_2 t - B_x t)(1+i)^{-t}}{\sum (C_2 t - C_x t)(1+i)^{-t}} \qquad 2.5$$

This iterative process continues until all the alternatives are compared, resulting in a one best project.

## 2.3.  Mathematical Model on the Analysis of Project Financing (DFRRI Projects)

A mathematical model may be developed for appraisal of projects under constrained resources condition; which shows that the criterion for acceptance of a project becomes more stringent.

For this research, and for all Directorate of Food, Road and Rural Infrastructure projects analyzed in the results presentation and analyses section, one may illustrate the formulation with single resource constraint as follows:

Maximize Z = $A_1X_1 + A_2X_2 + …. + A_nX_n + Sy_s – Ry_r – F$
Subject to the restriction -

$a_1x_1 + a_2x_2 + …. + a_nx_n + y_s – y_r < K$

$X_1,….,X_n = 0$ or 1

$y_s, y_r > 0$

$y_r < 1$

- The objective function (Z) represents net cash flow. It comprises the surplus from each job undertaken, plus any proceeds from selling the units of resources in stock, less any cost of buying extra resource units minus fixed cost.
- $X_1,....,X_n$ are variables which represent the acceptance or rejection of projects 1 to n; $X_1 ...., X_n$ may take the value 1, for acceptance, or 0 for rejection only.
- $a_1,...., a_n$ represent the net cash surplus on projects $X_1,...., X_n$ (they may assume negative values, implying that the project yields a negative value.
- F represents cash outflow which arises at a fixed level (independent of what projects are accepted and, hence are irrelevant to any decision).
- Y and $Y_r$ are variables representing the number of units of resources sold or purchased. They can be given any positive whole number value; $b_1,....,b_n$ which represent the numbers of units of the resources required to be used on each job, 1, ...., N.
- K is the number of units of resources already owned (in this case by DFRRI).

It is important to note here that the mathematical formulation is more appropriate for public sector projects (with the objective function giving net positive cash flow) – such as the DFRRI projects.

In these days of commercialization and privatization, the relevance of this formulation cannot be over emphasized. It should be noted that a basic assumption here is that there is no interdependence among supply of resources; in this case, funds for executing the projects.

Also, the assumption of single resource constraint is made for convenience. In principle, it is more conventional to have multiple resource constraints. In that case, the technique of linear programming (LP) is used to find an optimal solution. This often involves rigorous mathematics or computer applications.

## 3. Results and Analyses of Results

### 3.1. Results of the Study of Major Projects Financed with Different Sources of Finance in Nigeria

The objective of this chapter is to present the results of the study on some major projects that were financed with different sources of funds. The methods of financing considered include – contractor financing, direct financing, mortgaging. Mortgages are loans for project financing which are either in the form of external direct loans or grants. Foreign contractor financing: These are cases where the contractor is not guaranteed by his country's export promotion, organization and equity swop.

The projects are analysed in respect to project feasibility, evaluation, capital recovery, sources of capital, project monitoring and cost control as they affect the contractor and the project owners.

### 3.1.1. Financial Evaluation of some Directorate of Food, Roads and Rural Infrastructure's (DFRRI's) Projects

The data analysed here were collected from primary source – Imo State DFRRI. The data cover the major areas of DFRRI's activities, namely: Rural electrification, portable water supply, rural roads and agriculture.

Below are the financial allocations to the Imo State DFRRI between 1989 and 1991 which show the level of financial resources involved.

**Table 2** Financial Allocations: Imo State Government

| Year | Electricity (₦) | Water (₦) | Agriculture (₦) | Roads (₦) |
|---|---|---|---|---|
| 1989 | 2,050,000 | 1,850,000 | 339,000 | 98,750 |
| 1990 | 1,750,000 | 2,600,000 | - | 1,100,000 |
| 1991 | 985, 173 | 200,000 | 200,000 | 100,000 |
| Totals | 4,785,137 | 4,650,000 | 539,100 | 1,298,750 |

Total allocation in all programmes (1989 – 1991) = ₦11, 272, 987.00.

**Table 3** Federal Allocation

| Year | Electricity (₦) | Water (₦) | Agriculture (₦) | Roads (₦) |
|---|---|---|---|---|
| 1989 | 1,000,000.00 | 3,500,000.00 | 651,000.00 | 6,154,695.53 |
| 1990 | 9,728,450.14 | 4,153,807.00 | – | 15,513,805.52 |
| 1991 | 40,040,000.00 | 2,116,000.00 | – | 11,837,453.33 |
| Totals | 10,768,450.14 | 9,769,807.00 | 651,000.00 | 33,505,954.38 |

Total Allocation 1989 – 1991 (Federal Government Projects) =     ₦54, 695, 211.52.
Other allocations (sundry)                                                        =  ₦ 423,200.00
Total=₦ 55, 118, 411.52
Summary of Allocations,
State Government: 1989 – 1991   =         ₦ 11, 272,987.00
Federal Government: 1989 – 1991        =        ₦ 55, 118,411.52
Total (Federal and State)          =        ₦ 66, 391,398.52.
State Budgetary Allocations
1989    –        ₦ 480, 000.00 SDRD overheads,
1990    –        ₦ 12, 815,030.00
1991    –        ₦ 10, 117, 400.00
Total    –        ₦ 23, 412,430.00
Total Releases (1989 – 1991)
               =        ₦ 11, 272, 987.00
Short fall        =        ₦ 12, 139,443.00
Source: SDRD, Owerri.

The 'post facto' method of analysis is employed here to justify projects already executed, bearing in mind that it could be employed at the appraisal stage of the project cycle in decisions concerning project alternatives.

From Table 3, the following allocations to the different project areas for the years 1989 – 1991 were made:

Total Allocations 1989 – 1991 (Federal) = ₦ 54, 695, 211.52

Percentage allocations to projects are as follows:

Road:     $= \frac{(33,505,954.38)}{(54,695,211.52)} \times \frac{100}{1} = 61.2\%$

Water:     $= \frac{(9,769,807.00)}{(54,695,211.52)} \times \frac{100}{1} = 17.8\%$

Electricity:  $= \frac{(10,768,450.00)}{(54,695,211.52)} \times \frac{100}{1} = 19.60\%$

Agriculture: $= \frac{(651,000.00)}{(54,695,211.52)} \times \frac{100}{1} = 1.19\%$

From Table 3, it is obvious that the same trend is repeated. This confirms the assertion that DFRRI projects did not emphasis direct productive activity as shown by the 1.19 % financial allocation to agriculture. For this reason, the analysis will concentrate on the other project area – Rural Feeder Roads Programme.

### 3.2. Application of Cost Benefit Analysis in Project Financing Analysis of Rural Feeder Roads Programme

The data for this analysis are taken from the Rural Feeder Roads Programme under the phase II of the DFRRI's programme in Ukwa Local Government Area of Abia State.

**Table 4** Distances of the Rural Feeder Roads

| Roads | | Symbol | Km |
|---|---|---|---|
| i) | Umuelechi - Owaza - Umuadobia - Obehie | A | 16.00 |
| ii) | Ohuru - Ohanku - Abaki | B | 24.00 |
| iii) | Ikpoku - Owo - Obegu - Umumkpe | C | 20.30 |

Note that the directorate's rate of construction was ₦8,500 per km and the cost of annual resurfacing was put at 15 % of the construction cost; excluding inflationary effect.

**Table 5** Cost of Road Construction

| Roads | Construction Cost (₦) |
|---|---|
| A | 136,000.00 |
| B | 204,000.00 |
| C | 172,550.00 |

**Table 6** Cost of Annual Resurfacing and Maintenance at 15% of Construction Cost per Year

| Roads | Cost (₦) |
|---|---|
| A | 0.15×136, 000.00 = 20, 400.00 |
| B | 0.15 ×204, 000.00 = 30,600.00 |
| C | 0.15×172, 550.00 = 25,882.50 |

Cost of construction and resurfacing at 18 % interest rate assuming the road has a life cycle of 25 years

**Table 7** Cost of Construction and Resurfacing at 18% Interest Rate

| A | = ₦ 136,000+20, 400 (P/A, 18%, 25 Years) |
|---|---|
| | = ₦ 136,000.00 + 20, 400 (5.0142) |
| | = ₦238,289.69. |
| B | = ₦ 204,000 + 30,600 (5.0142) |
| | = ₦ 357, 434.52 |
| C | = ₦ 172,550 + 258,822.5 (5.0142) |
| | = ₦ 302,330.03 |

On the basis of the above calculations, one is led to believe that feeder Road A should be constructed over and above B and C, and that C should be constructed instead of B.

## 3.3. Project financing using Ordinary Shares, Debentures and Bank Loans

### 3.3.1. Project Financing of the Modotels, Owerri all Bond Investment Limited

The confidential placement memorandum published in 1986 by the principal promoters of the company offered to the public for a private placement of ₦2,500,000 ordinary shares at ₦1 per share and ₦2,500,000 16% Debenture 1993/97 on behalf of Modotels Nigeria Limited. The company was incorporated as a private Limited Liability Company on April 27, 1977 with an initial share capital of ₦1m. The principal promoters of the company (the Syndicated Investments

Holdings Limited) was as at 1986 holding 4 million ordinary shares of ₦1each and the Major family holding 1 million ordinary shares of ₦l each.

The cost of the project as at 1986 was estimated at ₦19,975,000 while the project valuation done by Chartered Surveyors) as at June, 1987 was given at ₦40,010,000.00. Out of the ₦19, 975, 000 in total project cost, ₦19,725,000 was made up of assets.

Analysis of the Project Financing

The total project cost was financed as follows:

₦000
| | |
|---|---|
| Equity | 5,000 |
| Loan (Union Bank of Nigeria) | 7,732 |
| Loan (Nigeria Merchant Bank) | 2,243 |
| Debenture (16%) | 5,000  Existing |
| Total | ₦ 19,975.00 |

At the end of the private placement exercise, it was expected to be financed as follows:

**₦ 000**
| | |
|---|---|
| Equity | 7,500.00 |
| Loan (Union Bank of Nigeria) | 3,732.00 |
| Loan (Nigeria Merchant Bank) | 1,243.00 |
| Debenture (16%) | 7,500.00 |
| Total | ₦ 19,975.00. |

The company was incorporated with an initial authorized share capital of ₦1rnillion and subsequently increased to ₦8 million in 8 million ordinary shares of ₦1.00 each. The issued and fully paid ordinary shares of the company and the 16% Debenture were beneficially held as follows:

**Table 8** Paid Ordinary Shares of Company at 16% Debenture

| | Ordinary shares of ₦1 each | 16% Debenture (₦) |
|---|---|---|
| Syndicated Investment Holdings Ltd. | 4,000,000 | – |
| The Ekwueme family | 1,000,000 | – |
| Various Nigerian citizens and institutions | – | 5,000,000.00 |
| | _____ | _____ |
| | 5,000,000 | 5,000,000.00 |

After the above exercise, the ordinary shares and the Debenture stock were beneficially held as follows:

**Table 9** Ordinary Shares and Debenture Stock

| | Ordinary shares of ₦1 each | 16% Debenture (₦) |
|---|---|---|
| Syndicated Investment Holdings Ltd. | 4,000,000 | – |
| The Ekwueme family | 1,000,000 | – |
| Various Nigerian citizens and institutions | 2,500,000 | 7,500,000.00 |
| | _____ | _____ |
| | 7,500,000 | 7,500,000.00 |

The purpose of Modetel's company offer by private placement was to raise ₦5 million through equity and debenture which would be used to reduce the current bank loans which then stood at ₦ 9,975,000, thus helping to reduce the very high interest burden on the project.

The researcher also believes that the offer by private placement helped to inject new blood into the project through equity participation, thus giving room for new ideas as well as promoting greater opportunities for the future of the project. The study showed that the then offer by private placement was as follows: 2.5 million ordinary shares of ₦1.00 each and ₦2.5 million 16% Debenture that was taken in blocks of ₦25,000 equity with ₦25,000 debenture and in multiples thereof. The implication of the exercise is that as expected, the interests on the bank loans which initially stood at ₦ 9,975,000 (bank loans) was reduced, thus, reducing the very high interest burden on the project. Quite often, projects are abandoned due to lack of funds or due to soaring interest on borrowed funds. The results of this research on the now completed project show that the exercise was worthwhile.

## 4. Conclusion

In the foregoing sections, attempt has been made to use available data and personal observations based on field surveys to discuss project financing in Nigeria. The sources of funds for project execution, types of finance as well as prospects and problems of financing projects in Nigeria have been discussed. The effects of the various types of project financing on the projects' costs have also been considered. It was noted that the fields of project development and financing are very diverse, and the possible sources of finance for any project execution partly depends on the nature and scope of such project. The details of financing any project depend upon whether the project is publicly or privately owned.

The research was aimed at examining the prospects and problems of the various methods of project financing in Nigeria, with a view to analyzing the effects of such financing methods on the projects' costs. The research attempts to provide a framework on which governments, individuals, groups, and estate developers would broaden their knowledge on the possible sources of finance for project execution in the country. This, the researcher believes will contribute in solving most of the numerous problems besetting project financing in the country. To acquaint the reader with the present day prospects and problems of project financing in the country, section four of this article presents the results of the research, highlighting the essential facts on project financing in Nigeria, with reference to several projects that have either been completed or are still under execution.

*Recommendations*

Most of the problems on project financing in Nigeria centre around those problems that bear on lack of adequate sources of finance for the development of projects and lack of information on appropriate sources of finance for project execution. This inadequate knowledge of the most appropriate financial sources results in the failure of applications to them. To achieve the goal of solving these problems calls for a complete re-organisation of the institutional framework of the project development and financing sectors. Thus, the researcher, hereby, makes the following suggestions and recommendations aimed at highlighting some of the salient facts on project financing in the country. The recommendations and suggestions are also aimed at alleviating some of the problems inherent in project financing.

- The public should be well informed of possible sources of finance for project development in the country through the following procedures:
- ❖ Organizing Seminars and conferences on project financing so that experts in this field may air their views and opinions, and present papers on the topic which will then be published in proceedings.

- Making more funds available and curbing the high cost of project development through –

- ❖ Relaxation of restrictions on the commercial banks
- ❖ Establishment of real estate services trust
- ❖ Establishment of property companies.

These investment trusts should be set up to derive their assets from two principal sources namely shares sold to the public and loans raised from banks.

- Introducing measures to curb inflation which has contributed in no small measures in the erosion of values of investments in projects and, hence, low returns from project investments.

- Reduction of interest rates at which lending institutions advanceloans to prospective investors in projects.
- Advancement of more funds to the existing financial institutions concerned with project financing, such as the mortgage and development banks to enable them advance loans to both the private and public investors in the project development sector.
- Encouragement of housing corporations and other government agencies concerned with housing and other construction developments on construction of these units for the public to purchase at moderate market values of the properties.
- Land tenure system: The problems posed by land ownership and tenure should be expeditiously solved by effectively applying the provisions of the land use decree. Along this line also, the process of obtaining certificates of occupancy or customary rights of occupancy should be over-hauled to quicken up the pace so that investors' funds are not wasted or even diverted to other investments. Costs associated with certificates of occupancy as well as planning permissions should be reviewed.
- Feasibility and Viability Appraisals: Investors on projects should endeavour to conduct comprehensive feasibility and viability appraisals of their conceived investment in projects before committing their resources to them.
- Extension of Amortization Periods: Due to the high cost of project development, the government should consider the extension of the amortization periods given by the financial institutions. This is to enable the investments to amortize themselves, hence, enabling borrowers to repay their loans.
- A project or financial manager should determine the best means of financing any project, the capital structure, such as equity capital and fixed interest security.

Project financing in the ideal situation should be more than just a matter of raising enough money to complete a project. It should also involve the evaluation of the circumstances surrounding the projects.

## Compliance with ethical standards

*Disclosure of conflict of interest*

There was no clash between the authors, as they worked harmoniously without any visible altercation or conflict.

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