INDIGENOUS CONSTRUCTION BUSINESS FINANCING

A CASE STUDY OF THE NATIONAL CONSTRUCTION

CORPORATION* OF KENYA

BY

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*The National Construction Corporation was dissolved while the study was at an advanced stage. See page 63.

D E C L A R A T I O N

I, SULEIMAN ONDIEKI MAGARE, hereby declare that this thesis is my original work and has not been presented for a degree in any other University.

SIGNED

DECLARATION OF THE SUPERVISOR

This thesis has been submitted for examination with my approval as University Supervisor

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A B S T R A C T

TITLE: "Indigenous Construction Business Financing A study of the National Construction Corporation of Kenya."

Construction business requires more than more additional funds. With some training, especially in the management of business, the construction businessmen could raise enough funds internally so that the need for external funds would not arise. However when there is a genuine need for additional funds the indigenous construction businessmen find it difficult to obtain the same. First there is the stiff competition from other businessmen. These businessmen are also inexperienced in the art of presenting their need for additional funds. They have also been in business for a relatively short period and hence the financiers would not be able to assess their previous performance. The Government of Kenya created the National Construction Corporation to help these indigenous construction businessmen in solving their problems. In playing its role as financier of the indigenous construction business the National Construction Corporation could adopt practices that make it difficult for the indigenous construction businessmen to benefit effectively.

The main objective of this study was to evaluate the effectiveness of the National Construction Corporation as an instrument of financing indigenous construction business.

The main findings of this study are:-

That the indigenous construction businessmen obtain the amount of loan they request for from the corproation; that the value of security pledged by these businessmen plays a very insignificant role in the amount of loan approved; That the indigenous construction businessmen have little to offer as security except land; that there is no proper control of loans issued to the indigenous construction businessmen; that the methods of safeguarding against credit-diversion are not fool-proof;

that the indigenous construction businessmen are generally disatisfied with the financial assistance they receive from the corporation and that, overall, the National Construction Corporation is not an effective instrument of financing indigenous construction business.

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INTRODUCTION

Statement of the Problem

Construction business is one of the most important businesses in Kenya because of various reasons. First, the business is one of the vital employers of the civilian labour force. It has been estimated[1] that two to six percent of the employable labour force in developing countries like Kenya is employed in the construction industry. Other related sectors such as the manufacture of the building materials and components, transport and distribution of building materials and other ancilliary operations can account for about ten percent of the total employment.

The output of the construction industry is also an important aspect. Normally the output is an input of other industries. Taking buildings for instance, one finds that they are "consumed" by other industries such as manufacturing and many others which carry out their businesses in them. For the civil engineering outputs the same is the case. For instance, once the roads have been constructed other businesses such as transportation are carried out on them. As for the water provision, it is used for many purposes such as manufacturing and farming industries. Indeed this means that the output of the construction industry has a multiplier effect. Once some output has been achieved it triggers off many other reactions which in turn also trigger others and so on and so on.

Organisation of Construction Process

Unlike many other businesses construction business has many participants. This is mainly due to the nature of the activities involved. First there is always a client who may be an individual, a

company, a government ministry or two or more individuals and so on. The client is the initiator of the whole construction process. He appoints his advisers for the design and implementation of his project. He then gives his appointed advisers all his requirements. He also commissions the contractor to carry out the works and advances most of the finances necessary to keep the operations going.

Another participant is what is commonly referred to as the design team. This team includes among others, Architects, Engineers, Quantity Surveyors and other specialist consultants. The main duty of this team is to translate the ideas and requirements of the client into reality. To this effect they prepare a set of instructions sufficiently clear and precise to the contractor to submit a realistic price for the remuneration of his services. They also advise the client on all financial technical and other related aspects of the project.

Then there is the other participant known as the Contractor. He does the bulkiest operation of assembling on the building site the materials and components to produce a given asset be it a building or a road. In Kenya today there are various categories of contractors; on the one side there are the multinationals who are well placed in terms of all resources required for the construction business. This is due to the fact that they have been in the construction business for a considerably long period. This has enabled them to acquire managerial and technical experience. They have also been able to acquire assets which they may offer as security for external finance. They have also been able to build up their past to which reference may be made. Most of these firms also get support from their mother countries. This support may be in form of finance or even in form of getting projects which are particularly financed by their mother countries. On the other side are the Asian firms who are equally well placed. They have

been in the business for quite sometime and hence their past is considerable for reference purposes. They have also been able to build up financial base in form of landed properties. They also have access to credit facilities because most of the construction materials suppliers are owned by their brothers and sisters. And lastly they have managed to build up managerial and technical experience since they have been in the "game" for sometime. Yet on the other hand, is the indigenous construction business firms which are poorly placed in terms of the resources required. Omenge[2] while addressing a seminar in Harare, Zimbabwe, pointed out that effective management is lacking in most of the indigenous construction businesses. The indigenous construction business firms are poorly placed in the sense that they have been in the 'game' for a relatively short period and hence they have not been able to accumulate the managerial and technical skills which are necessary for their success in this important industry. They also lack a sound financial base and this has led to difficulties in obtaining external finance. The economies of scale also plays some negative role in the availability of external finance. This is mainly because financial institutions are normally reluctant in advancing any finance to very small businesses because of the risks involved. In addition most of these indigenous construction business firms are also inexperienced in the art of presenting their needs for external funds and hence they end up not obtaining the same. And lastly the indigenous construction business firms find it difficult to obtain business. The Government of Kenya has however instituted some measures which are geared to alleviating this problem. These measures include the limitation of tendering for jobs worth ten million Shillings and below to indigenous business firms only. However this has yet to be fully implemented.

Financing of construction business by the National Construction Corporation

Soon after independence the Government of Kenya realised this handcap on the part of the indigenous construction business firms and consequently created a national body in the name of the National Construction Corporation[3] to try and promote the participation of the indigenous construction firms in this vital industry. One of the functions of the Corporation is to finance the indigenous construction business. After twenty three years of Kenya's independence, the construction industry is still dominated by the foreign multinationals and those of non-indigenous Kenyan origin. In table 1 below interesting features concerning the share of the indigenous construction businessmen. The table shows that in the period 1978/79 the indigenous business firms obtained more contracts than other local firms and non-citizen firms put together. However in monetary value the indigenous firms had only 17.8% share. In the period 1979/80 the indigenous firms had 25.9% share. While in the period 1980/81 the share was 17.9%. This revealations raise one important question whether the National Construction Corporation has played her role as was intended. Omenge[4] in his paper to the regional seminar on contractor development in Harare, underscored the need for developing indigenous construction business firms. He then introduced the activities of the National Construction Corporation and he admitted that it has not been smooth sailing:

> "We have learnt to develop and sharpen our tools in working capital, lending system, budgeting and budgetary control, loan recovery system, development of personnel .... We have also burnt our fingers in some of these areas[5]."

He added that the corporation was considering to increase the revolving fund, making changes in the loan policies, procedures and accounting because the existing ones are not adequate. This indicates that the assistance offered especially financial has not been administered properly and that it is inadequate. He also looked at the issue of

Table 1

Distribution of MOW main building contracts by type of firm

The Value is in Million Shillings

1978/79	African	Non-African	Non-citizen	Total
No. of Contracts	102.0	16.0	35.0	153.0
Total value (Sh.'000,000)	106.7	63.4	430.1	600.2
Value per contract (Sh.'000,000)	1.05	3.96	12.29	3.9
1979/80				
No. of contracts	178	36	47	261
Total value (Sh.'000,000)	181	128.2	388.9	698.1
Value per contract (Sh.'000,000)	1.02	3.56	8.27	2.67
1980/81				
No. of contracts	103	18	48	169
Total value (Sh'000,000)	121.8	111.4	446.8	680.0
Value per contract (Sh.'000,000)	1.18	6.19	9.3	4.02

Source:- Ministry of Works, Housing and Physical Planning.

loan repayment procedures. He explained that interim payments of indigenous construction businessmen do pass through the Corporation which in turn removes some portion to cover its debt service before handing over the balance to the contractors. He argued that this is a sound procedure which he recommended for support. What he fails to point out is that the corporation has only one account both for its own finance and also for the projects which are financed by the corporation. This is not healthy since the cash flow problems of other projects or even of the corporation are likely to affect other projects. There have been cases where other projects have suffered because of the cash flow problems attributed to one account. It is not uncommon to find cases where a contractor brings a payment to the corporation only to be told that he cannot be paid his dues because the account of the corporation is overdrawn. Finally . he touched on the issue of outstanding loans. He pointed out that the short-term loans form the bulk of the corporation debt. He however fails to indicate how this situation came into being.

Talking to the indigenous construction businessmen on the National Construction Corporation, most would complain about indequacy of the working capital loans issued by the Corporation and early start of loan recovery. As at 1985 the Corporation was owed over forty million Kenya Shillings by the indigenous construction businessmen in the form of outstanding loans.[6] This is in itself a clear indication that all is not well. At least something must have gone wrong somewhere. There are various general policies which govern the issue of financial assistance to the indigenous contractors by the corporation. The main purpose of these policies is to guard against any misappropriation of the funds given by the corporation to the indigenous construction businessmen. The question is whether these policies have been followed strictly by the Corporation. One

would question whether the National Construction Corporation has any mechanism of ensuring that the financial assistance given to the indigenous contractors is put into the intended use and also whether the corporation has an effective system of evaluating securities.

Study objectives

The basic objective of this study is to evaluate the effectiveness of the National Construction Corporation as an instrument of financing indigenous construction business. This would be done through the examination of the financing policies of the corporation and execution of these policies. This study would also make an assessment of what the indigenous construction businessmen feel about the corporation.

Study hypotheses

We have in our last few paragraphs attempted to bring out clearly the issue we are addressing ourselves to in this study and also the objectives of this study.

It is hypothesized that in acting as a financier of the indigenous construction business the National Construction Corporation does not follow procedures and regulations appropriate for an organisation meant to act as a financier. In connection with this it is considered that the value of security pledged by the indigenous construction businessmen plays a very insignificant role in determining the amount of loan that is usually approved by the National Construction Corporation. In addition the National Construction Corporation does not take into account the work experience of the indigenous construction businessmen in approving loans for them.

It is also felt that the indigenous construction businessmen do obtain the amount of loan they apply for from the Corporation and that the value of the contract plays a very insignificant role in

determining the amount of loan that is usually approved by the National Construction Corporation. Also it is felt that the National Construction Corporation methods of safeguarding against credit diversion are not fool-proof. And moreover the indigenous construction businessmen are disatisfied with the financial assistance they obtain from the National Construction Corporation because it is too little and badly administered.

Research methodology

Data Base

The National Construction Corporation provides long term finances to the indigenous construction businessmen. These finances enable these businessmen to grow in their business. They normally use some of the finances in buying plant and machinery necessary for their work. The remaining portion is used for buying materials required for the projects. This finance, for the period 1978/1981, forms one of the data used in the analysis of this study. There are various reasons as to why the period covered is limited to 1978/1981. One of the reasons is that this is the period when the corporation had most of the construction activities taking place. Since then the activities of the corporation have more or less been grounded. This period also is the one in which proper and comprehensive records were kept and hence it is easier to obtain useful data.

Another source of data used in this analysis is the answers obtained from indigenous construction businessmen on what they think about the National Construction Corporation. These questions were put to the businessmen who have benefitted from the corporation especially for the period 1978/1981.

Data collection

The total number of successful applicants in the period 1978/81 that is 251 are sequencially numbered. Sampling was considered

Table 2

Distribution of long-term loans approved and issued by the National Construction Corporation by year

Year	No. of successful applicants	Amount issued in Shillings (K)
1978	57	11,797,993/=
1979	61	30,757,435/=
1980	91	32,597,481/=
1981	42	15,383,011/=
Total	251	90,535,920/=

Source: Author's Field Research (1985)

appropriate. Twenty percent (20%) of the total applicants was considered adequate. This gave a sample size of 50. To select the 50 a systematic sampling method was adopted. This is because the method is relatively easy to handle. Also the data is randomly arranged according to the loan account numbers and does not contain any periodic characteristic .

In using this technique the initial problem was to decide on the first applicant to be chosen. On dividing 251 by 50 we obtain 5.02. It is therefore appropriate to take every fifth applicant. However the first choice was determined by some random process. Serial numbers numbering 1,2,3,4,5,6,7,8,9,10 were written on some pieces of paper of the same size. Each was then rubbed and put into one container. The container was then rolled six times. Finally one of the rubbed pieces of paper was then picked up by a small child. The piece of paper picked contained the number 7. This meant therefore that the first data of the sample would be 7th, the second would be 12th and so on till the 50 cases were obtained.

The data

Each member of the sample has a project file kept by the National Construction Corporation. From these project files information and details pertaining to each successful applicant for every project he undertook was obtained. This included the following:- Contract Sum (C), amount of loan applied for (R) by the Indigenous Construction Businessmen, the amount to be invested by the indigenous construction businessmen (T), the value of security offered by these businessmen for the loans they applied for (S) and finally the work experience of each applicant by obtaining the category of registration (D).

The information obtained above was augmented by the information obtained from the applicants themselves concerning their views about the financial activities of the corporation. To obtain the

information from these applicants a questionaire was administered to all successful applicants (appendix i). Sampling technique was considered unsuitable because of the fear and worry about poor response to the questionaire. Therefore a total of a hundred and twenty six questionaires were administered. This is because some of the indigenous construction businessmen had more than once successfully applied for loans. The questionaires consisted of questions on the financial activities of the National Construction Corporation and other related activities.

Testing procedure.

In general terms regression and correlation analysis were the major statistical tools which were employed in this study. F-statistic was used for testing the significance of the regression co-efficients and difference between means. Percentages were used where the nature of the problem called for it. Computer programmes were used to a limited degree where convenient. SPSS package programme was used to estimate the loan approval model. In testing the first, second, third and fourth Sub-hypotheses, F-statistic was calculated (F_{ca}) and compared with the F - critical values (F_c). The tests also involved looking carefully at the procedures of issuing loans to the indigenous construction businessmen and making conclusion on the same. Finally the response from the indigenous construction businessmen to the questionaires in terms of percentages was examined.

Model

The main task of this study is to find out the factors which would influence the amount of loan an indigenous construction businessman obtains from the National Construction Corporation. In what is called Loan Approved Predictor Model, we argue that the amount of loan which the National Construction Corporation approves for these Indigenous Construction businessmen depends on among other things, the value of the Contract,

the value of security pledged by the businessmen, the amount requested by the businessmen, the amount of money to be invested by the businessmen (equity finance) and also the work experience of the loan applicant. This can be put as follows:-

$$L_a = F\ (C,S,R,T,D)$$

where,

L_a = the loan approved.

C = the value of the contract to be financed.

S = the value of security pledged by the indigenous construction businessmen.

R = the amount of loan requested by these businessmen.

T = the amount of money to be invested by the indigenous businessmen (Equity finance)

D = Dummy variable which takes care of the work experience of each loan applicant.

The nature of the model could either be additive or multiplicative. The additive would be as follows:-

$$L_a = Q + X_1R + X_2S + X_3C + X_4\ T + X_5D$$

The multiplicative would take the form of:-

$$L_a = R^{X_1}\ S^{X_2}\ C^{X_3}\ T^{X_4} \cdot e^{(X_5D + Q)}$$

where

Q, X_1------- X_5 are constants.

Co-efficient of determination (R^2) is used to establish the best fit formulation. The values of the first four variables i.e C,S,R and T are obtainable as already noted in the data collection. The last value i.e the work experience (D) is based on the registration categorisation of each loan applicant. The categorisation is then given some numerical values the highest of which would be for the highest categorisation.

FOOTNOTES

1. D.A. Turin. The Construction Industry, its Economic Significance and its Role in Development. University College Environmental Research Group London 1961 P. B11

2. S. Omenge, "Contractor Development Agencies. The Kenyan Experie nce". Regional Seminar on Development of Small Scale Construction Enterprises in Africa. Harare 1982 P. 16.

3. The Kenyan Government, National Construction Corporation Act Chapter 493 of the laws of Kenya. Government Printers Page 3-13.1972

4. S. Omenge. "Contractor Development Agencies. The Kenyan Experience" P. 15.

5. Ibid .

6. The National Construction Corporation, Balance sheet as of 31.03.1985.

C H A P T E R T W O

REVIEW OF THE RELATED LITERATURE

Introduction

There is little done if any in terms of research on the subject of financing of the indigenous construction business in Kenya. However some research work has been carried out in some related areas and especially on other indigenous business other than the construction businesses.

Problems facing indigenous businessmen

Geiger and Armstrong[1] in 1974 carried out a study on 64 Nigerian businessmen in Lagos. Their major objective was to expose problems that hindered the development of modern forms of indigenous private economic activity in tropical Africa. In their findings, they pointed out that African businessmen operate amongst forces acting in various directions. On the one side the African businessman is expected to share his earnings with the community through generous contributions towards communal projects such as construction of schools, health centres and the like. On the other hand there are the whole lot of relatives and friends who seek financial assistance from the businessmen whenever they are faced with problems. This study sets out clearly the social environment in which African enterpreneurs work. The indigenous construction businessmen in Kenya are no exception to this kind of environment. Hence their financial position is influenced by this social problem. It is therefore possible to find that funds given to these businessmen end up being put into uses which were not intended resulting in non-repayment of the loans.

Murphy[2] in his article argues that poor management explains why some owner managers of small firms meet with a lot of problems when it comes to seeking external finance. These managers, he points out,

often fail to forecast and to plan for cash needs resulting in a 'cash crisis'. He goes on to add that sound financial management which includes knowing the firms cash flow, forecasting cash needs, planning to borrow at appropriate time and explaining and supporting the payback method must be practised so as to make sure that loans are obtained and used profitably.

Indigenous construction business firms are essentially small firms. Indeed sound financial management which also includes the art of presenting the need for external funds is crucial to the success of these small businesses. The success of the indigenous construction business firms would mean prompt repayment of loans to the corporation and hence the reduction of the financial constraints resulting from the non-repayments of the same.

Hosmer[3] on the other hand looks at the question of joint venture. He argues that small business firms should joint venture with big firms so as to have adequate equity base. This would in turn mean that commercial banks would be more willing to extend their credit facilities to these firms. With these firms obtaining external finance from commercial banks, other financing agencies like the National Construction Corporation are likely to have some extra funds which they can use in developing more indigenous firms. Finally the foreign domination of the construction industry would be reduced considerably.

Mante[4] also looks at the problems facing small business firms. He points out that one of the constraints facing small scale construction enterprises in Africa is financing. He explains that in Burundi where he is based, 100% security is required if any credit is to be extended. This, he argues, has tended to restrict the growth of contractors since most of the contractors' assets are mortgaged. He goes on to advocate direct financial assistance in form of small equipment and also in financial management. Mante fails to point out the advantage of 100% security for any credit given. This would

increase the commitment of the small scale contractors and therefore chances are that they would succeed in their business. The question of the financial management is also welcome and hence the National Construction Corporation should come in and help the indigenous construction businessmen in this area.

Miles[5] argues that financial planning is very necessary for a construction businessman. The planning involves looking forward, making preparations and deciding on the best course of action. He adds that financial planning is lacking in most of the small scale contractors. On the availability of the external finance, he points out that small scale contracting firms find it difficult to obtain it due to their newness, that is to say, that they have little or no business experience. Also the fact that these firms are involved in a construction business in which the highest number of bankrupties is found is in itself a problem.

Bates[6] argues that there cannot be an ideal case of financing a firm. Each business has individual circumstances which make its requirements unique. These individual circumstances, he points out, include age, ownership and also the rate at which the owners wish to expand. He points out also that there are various considerations which govern fund-raising policy. These include knowing how much money is needed, when it is needed, the purpose for which it is needed, the form of finance to be used and whether it is profitable to undertake the expenditure. He adds that the most important source of funds for a small firm is its own savings derived from past profits.

As already noted financial planning is an aspect which must be looked into if the indigenous construction businessmen are to succeed. Success of these businessmen would of course mean reduction of foreign dominance of the construction industry in Kenya.

The question of own savings is also of interest. The indigenous construction businessmen should be encouraged through seminars or short courses to retain a portion of their profits so that this can be used to solve some of their financial problems. If the savings can be retained repeatedly the indigenous construction business firms would eventually gain financial stability and therefore the need for external finance would be minimised. This would in turn mean a reduction of the demand on the National Construction Corporation funds. The'Surplus' funds would be given to more indigenous construction firms resulting into increased participation of more indigenous construction firms in the construction industry.

Bates feels that other sources of finance for the small-scale enterprises must include depreciation. This involves putting aside some amount of money which can be used in the short-run. Future tax reserves also is another source of short-term finance. However for the above two sources to be of any use, proper and up to date accounting procedures must be used. This is indeed lacking in most of the indigenous construction firms. Finally he looked at bank credit as another source of finance for the indigenous firms. Both short-term and long-term funds are obtained from this source. However for the indigenous construction firms to benefit from this source, they must strife to perform well and potray confidence in their business.

Kamau[7] also looked at various problems which hinder the development of African business enterprises. His discussion is based on his discussions with businessmen in and around Nairobi, officials of the Ministry of Commerce and Industry and also some bank officials. He started by looking at the need to increase African participation in the economy due to the important role played by their participation. One of the problems he looked at is the traditional family obligations. These traditions, he argues, have hindered the

development of African enterprise in several ways. The entrepreneurs must share their incomes with other members of extended families. Where these families are experiencing financial hardships the enterpreneur must come to their aid. All these considerations lead to collosal amount of money getting out of the enterprise and its contribution to its eventual failure. As already noted this is a problem which equally affects the indigenous construction businessmen. This is then extended to the National Construction Corporation.

The problem of the non-availability of funds was also investigated by Kamau. Most of the businessmen he talked to complained of not obtaining funds to start or expand their businesses or for erecting business premises. He admitted that the problem is even worsened by the requirement of the Local Authorities that business premises must conform to some set standards and specifications. This results into a huge sum of money being wasted in constructing impressive buildings which remain idle for many years after completion. He added that the problem of non-availability of credit facilities is due to general distrust of Africans and their inability to offer acceptable securities and also fear of default. It can be argued here that the requirements of the Local Authorities may also have some advantages such as increasing the credit worth of the African businessmen. This would in turn mean that the African businessmen would be able to obtain the much needed external finance which is very essential for their success. The indigenous construction businessmen are equally affected by this problem resulting in o their low rate of growth and hence their less substantial participation in the construction industry.

Financial management is another aspect which Kamau investigated. He found out that a very small number of African businessmen ever kept

books of accounts. They do not even ascertain the profitability of their businesses. This may apply to the indigenous construction businessmen with very disastrous results since they cannot be able to tell when firms are doing well or when they are heading for disasters. The National Construction Corporation and other government institutions could come in through intensive courses and seminars and assist these businessmen. It is only after these indigenous construction businessmen have understood their businesses that they can be expected to make any meaningful participation in this important industry.

Competition from fellow indigenous businessmen and those of non-African origin such as Asian and Europeans as well as trade unions activities are also problems which were touched on by Kamau.

Finally Kamau pointed out that ignorance has also some share in the problems experienced by these businessmen. Some of these businessmen are not aware of the facilities provided by the Government and other institutions. There are for example quite a number of indigenous construction businessmen who are not aware of the loan facilities provided by the corporation. This problem can be reduced greatly if the businessmen could organise themselves into some society which would endeavour to educate them on the issues they are ignorant about.

Okelo[8] also discussed the problem of financing the African businessmen. He pointed out that these businessmen have not developed enough so as to gain access to the financial institutions. It is difficult for them to gain access to the government and partly government financial institutions. He added that the provision of finance can be wasteful unless it is accompanied with measures such as assessing the capacity of the enterpreneur, providing assistance in management, production techniques and also resolving marketing

difficulties. The National Construction Corporation should indeed consider the question of capacity of the indigenous construction firms before any financial assistance is given. Management and production techniques are all vital and as already noted they should be given to these contractors. Finally marketing difficulties have got to be resolved if the indigenous contractors are to play any meaningful role in the construction industry.

Marris[9] on the other hand points out that the banking institutions are usually reluctant in giving African businessmen financial assistance because of their inability to acquire adequate knowledge of such businessmen and also by a reluctance to jeopardise profits in taking normal risks. Marris is however convinced that by creating financing agencies such as Industrial Commercial Development Corporation (ICDC) and the District Joint Loan Board (DJLB) the idea of the risks involved in financing the African businessmen is strongly supported. To him the indigenous businessman should be left to compete with the rest of the business community. In this way, he argues that, he would eventually gain confidence of the financial institutions instead of remaining and I quote "isolated and unsophisticated and dependent on the government to mediate for him". Whereas it is true that the indigenous construction businessmen should be left to compete with the rest of the community, they should at least be assisted to some extent for faster growth and hence more participation in the construction industry.

Gillain and Colin[10] have also looked at, among other things, the issue of finance in starting and running business. They have argued that before one starts looking for finance either internally or externally he needs to carefully work out the amount of money required by the business and also whether the business venture would be profitable or not. They point out that apart from banks, there are many other sources of finance

which a businessman should look into. These include private investors, public and local bodies, merchant banks and also venture capital firms. Once more the question of financial management is very important if any success is to be achieved. It is important that the indigenous construction businessmen do consider all other sources of finance so as to determine the cheapest which would give maximum benefits.

In 1974[11] Harper carried out a study in Kenya. His main interest was to establish the importance of finance on the promotion of small scale businesses. He worked with a sample of 100 small provision shops in Kenya. In an interview he carried out to find out the most serious problem facing these businessmen, 62% of them indicated that lack of capital was their handicap, 28% of them mentioned shortage of stock or customers as their main problem. He also looked at the question of credit provision by the businessmen. He found out that most businessmen were aware of the danger of credit provision. 80% of the shopkeepers were owed less than the value of two weeks sales. He went on to argue that finance alone is not enough assistance to the small-scale businessmen. He added that this assistance must be accompanied with management advice:-

> Small-scale businessmen everywhere and particularly in developing countries believe that their pressing problem if not the only one, is lack of finance. Organisations devoted to the promotion of small businesses have come to believe that finance must be accompanied by management advice should precede any consideration of financial assistance. This will not only improve the chances of effective use of the additional finance if it is eventually provided but more important still it may show that there is infact no need for more capital at all.[12]

He goes on to note that there is a tendency for Government to lay more emphasis on lending money alone. He sees this as being politically oriented as it is easier to point at the benefits of lending money than either technical assistance, education or specific training.

He also examined the question of fixed capital. He found out that $\frac{1}{3}$ of the shopkeepers owned the buildings in which they carried their businesses. To him any businessman who has $\frac{3}{4}$ or more of his total capital tied up in his premises is not making best use of his resources if he can rent the buildings. This raises some issues. There is the issue of security in a bid to obtain external finance and this is certainly advantageous to him than one who has no building of his own. There is also the problem of the landlords especially where the buildings are rented. They may want to take over their buildings especially where they are jealous of the success of those who have succeeded in their business. In addition Harper assumes that the rental business buildings will be available which in most cases might not be the case. He concluded his study by emphasising that management provision to businessmen is more important than finance.

> If small-scale businessmen can be shown how to make better use of their existing resources and can be trained to use them more efficiently in the future, they will be able to generate the capital they need from internal sources and also to make better use of loans when they are considered appropriate.[13]

It can therefore be argued that with good management the resources in small scale businesses may be adequate and the need for the external resources might not arise.

Kimuyu[14] also agreed with the contention that additional funds was not all that which is required to alleviate the problems which small-scale businessmen face but rather better management which will make it possible to generate funds internally.

Indigenous contractors[15] through their memorandum submitted to His Excellency the President of Kenya by the Kenya National Association of African Contractors, complained about among other things the non-availability of funds. They pointed out that the major constraint facing them is finance. They went on to suggest that the

Kenya Government develop a clear cut policy on the financing of the African Contractors:-

> But the major constraint facing the up-coming African Contractors is finances; whereas the African Contractors appreciate the Government financial assistance through the National Construction Corporation and whereas we appreciate that the few successful African Contractors owe their origin to the National Construction Corporation, we feel strongly that it is time the Kenya Government came out with a clear cut policy on how to finance African Contractors.[16]

These contractors expressed doubt on the adequacy of the revolving fund since it has remained static for almost ten years. They went on to regret that the corporation is faced with financial constraints with many cases where loans have been approved only to find that the funds available are not sufficient to meet them. They also complained about the non-acceptability of the corporation's local purchases orders (LPOs) and attributed this to the delays in payments.
The contractors then went on to make requests to His Excellency the President in the following areas: First they requested for an increase of the revolving fund of the National Construction Corporation to be able to meet both the short-term and long-term financial needs of these contractors.

They then requested that more funds be made available to the corporation to enable it to increase its plant pool so as to be able to meet the rising needs of these plants. They also requested for the creation of the contractors' bank. They argued that this particular bank could be instituted in line with the farmers' bank - i.e. Agricultural Finance Corporation - the traders' bank - i.e. the Industrial and Commercial Development Corporation; the Industrialists' bank i.e. the Industrial Development Bank and the cooperators' bank; i.e. the Co-operative Bank of Kenya. They felt that this will be a break through of their problems. Whether this is true is debatable.

Lastly they requested for mobilisation funds from clients so as to eliminate their initial financial constraints on particular projects. It is however felt that this might not solve their problems and instead it would tend to aggravate them. Experience has shown that most of the African Contractors do put the mobilisation funds into unintended uses such as buying very luxurious cars, land and "matatus" resulting in poor performance in their construction business. Finally the indigenous contractors complained of delay in payments especially those which pass through the Ministry of works, Housing and Physical Planning. They pointed out that the delays are enormous with serious effects on the general progress of the work and also on the growth of the contractors.

From the points raised above it is clear that the African Contractors do consider the problem of finance to be the source of their poor performance in the construction industry. However it can also be pointed out here that there are other problems which were left out in their memorandum. One of these problems is lack of financial management. As already noted earlier provision of finance must be accompanied with management. For them to be of any meaningful use to the construction industry they must be given proper management advice on all aspects of business. It is only then one can expect proper use of any finance advanced. The African Contractors also must be made aware of the problem of lack of commitment in their construction business. Experience has shown that African Contractors lack the required commitment in their construction business. They involve themselves in very many other unrelated businesses. This has prevented them from obtaining the necessary experience and hence they are yet to become professional contractors.

Aspects of application for external finance

Halperin[17] raises an important and relevant issue. It is an issue concerning how to prepare a request for external funds. He points out that the application for the external funds must be done carefully as this might have some bearing on the amount to be obtained.

> ..... well thought out and well documented presentation on the part of the borrower. The application becomes extremely important, ... When the application has a professional quality to it, the lender will assume that the developer is a professional. He will be favourably disposed toward lending more money than otherwise .....[18]

This is a very important issue as far as our study is concerned. An attempt will be made to establish whether the requests for funds from the National Construction Corporation by the indigenous construction businessmen is well documented.

Miles[19] also touched on the issue of presenting the need for external finance to a financial institution. Like Halperin he advocates greatest care if success is to be achieved. He argues that information such as, the form of the company whether limited or partnership, whether the funds required will be short-term or long-term, cash-flow calculations, technical competence, records on the work already done, contract documents, bond provision, accounts including balance sheet profit and loss account, fixed and current assets, the money owed to and by the firm, how profits of the firm are spent and security to be pledged should be made available to the financier in a pleasant manner.

Bates[20] also is of the opinion that proper presentation of the need for external finance is of critical importance. He adds that the financial institution from which funds are being sought should be furnished with the following information; estimates of the total finance required, the way the finance will be used, the specific

amounts required for each item, proportion of new finance which will be provided by existing shareholders, history of the business, a copy of the accounts of several years back, showing turn overs, profits and finally the description of the nature of the business, its products, customers, sales, prospects etc.

Gillain and Colin[21] also are of the opinion that the way the need for external finance is presented to the financiers is of crucial importance. Like Halperin Miles and Bates, he points out the main features of the information which must be presented to the financiers. He however feels that in addition to what the three writers recommend, other information such as, business name, names and addresses of the directors or partners, the method of repayment of the loan, details about directors including marital status, children, any other responsibility or trust, professional qualifications, previous employment and experience. They finally point out that a firm seeking external finance should try hard and have some discussion with the financiers. They add that during such discussions confidence must be potrayed otherwise any lack of it would be disastrous.

From the above literature one question which immediately comes into one's mind is whether the indigenous construction businessmen do a thorough job when presenting their own loan applications to the financial institutions as well as to the National Construction Corporation. The same would go for the National Construction Corporation whether it looks for the above mentioned information so as to determine the suitability of any loan applicant. It can be argued here that the corporation should be able to obtain and examine all the details of financial requests critically before any approval of funds is done. Information such as certified profit and loss accounts from the indigenous construction businessmen should be obtained. Finally

the corporation should be able to personally interview these businessmen so as to determine their credit worth

Mwaniki[22] outlined the procedure of obtaining loans from ICDC. He pointed out that the loan application forms are bought for ten shillings by the applicants. In these forms basic details regarding the proposed project are filled in. This includes personal data of the applicant, amount of loan required, nature of proposed project and its costs and production targets, number expected to be employed, whether the applicant has received previous loans, the nature and value of the property currently held including that to be offered as security for the loans. The application is then forwarded to the I.C.D.C. Provincial Officer who interviews the applicant. He then confirms the information on the application form with more emphasis on whether the applicant knows well the project he proposes to embark on. He will also be expected to comment on the adequancy of the security. These forms are then sent to ICDC in Nairobi for analysis by the project officers. Initially the provincial officer details are analysed and then compared to details given by the applicant. Then follows an analysis of the capital requirements of the proposed project; variable costs, fixed costs, and operating costs. Also the viability of the project is looked at very carefully. Also considered is the managerial competence and know how of the loanee. More emphasis is put on the analysis of security offered. The security must cover 25% of the amount of the loan given with the remaining portion being taken care of by the machinery. The property which forms acceptable security include land and permanent building which have a proper title.

Those applications which are declared successful in above analysis are passed on to the Board of the I.C.D.C. if the amount involved is Shs.50,000/= and above. Where less amount is involved

the management committee will handle the matter. After further consideration, the loan application can be either rejected, withdrawn, accepted or deferred for further analysis. On the approval of the application, the applicant is so informed in a "letter of offer". This letter sets out clearly the specific conditions of the loan. These conditions include terms of repayments and a rate of interest. The I.C.D.C. finances not more than 70% of all financial requirements of the project. The proprietor therefore must raise 30% of these requirements. The letter of offer also asks the applicant to forward titles of properties pledged to secure the loan.

The procedure of obtaining loans outlined above indicates that Industrial and Commercial Development Corporation (ICDC) takes great care in arriving at any decision of giving loan to any developer. One of the outstanding aspects of this procedure is the interviewing of the applicants. This is of vital importance because it is possible to ascertain whether the loan applicant understands his project well. These findings will benefit both parties. Where the applicant does not fully understand his project, he may be assisted, through the interview, to understand it and therefore be in a position to re-assess his position and then make a decision as to whether to go on with the project or not. Where he decides not to continue with the project, the Corporation would have saved its finance. Where the project is continued the Corporation would also benefit because its finances are likely to be put into good use resulting in success of the project.

Decision making

The word decision has been described by I.D.J. Bross[23] as "the process of selecting one action from a number of alternative

courses of action. Some decisions can be described as simple where the issue involved is easy such as deciding whether to walk or drive to some place. Other decisions may be complex such as deciding what type of treatment may be appropriate for a particular patient. This may require the assistance of tests, X-rays and secondly examinations by consulting other doctors. The hospital forms the organisational setting in which complex decisions are made.

Decisions can also be further classified into three main types:- The automatic decision, the memory decision and the cognitive decision. An example of the automatic decision is the reflex action which cannot be significantly changed. It is a decision based on the biological mechanism. The memory decision is quite susceptable to improvement in both technique and accuracy. Examples include teaching non-reasoning animals complex directional decisions through stimulation and repetition. And lastly a cognitive decision involves cultural environmental influences, Education and experience provide much of the data base for proper decision-making. In an organisational setting decision-making is part of the whole process which includes setting organisational goals, performance criteria, problem identification, various alternatives, decision testing, implementation and control and possibly feedback, comparison and correction. Decision may be made at any of the above levels.

There are a number of frequently used decision models namely: probability and expected value, decision trees, indifference curve analysis, preference and finally simulation. Simulation approach involves a design of a model comprising many variables. Then through the use of a computer all possible outcomes are simulated by allowing all the variables to be altered systematically within their possible ranges.

Industrial Development Bank[24] follows a detailed procedure in reaching a decision on whom to advance loans to. Under normal

circumstances the request for finance comes from the proprietor of the proposed industrial development. The request is accompanied by a complete proposal report on the development. This report is then passed on to a section of the bank called Appraisal Team. This is a team of engineers, economists, business experts and administrators, etc. The team evaluates the technical and financial viability and the general standing of the proposed development and finally writes a report based on their findings. The above report is then passed on to what is called Management Committee which in turn discusses the report generally. Their recommendation is then passed on to what is called Investment Committee. It is this Committee which will decide whether this report should be passed on to the Board of Directors of the bank. The Board of Directors would then have a discussion on the report and if they are convinced that the proposed development is viable then it is approved. However where finance for the proposed development would come from outside lenders such as World Bank, African Development Bank and also Bank of India, the Board of Directors of the Industrial Development Bank would forward their approved proposal to the financier for a final approval.

Once an approval of the proposal has been given an agreement is signed betwee the project proprietors and the Bank. In this agreement terms of the loan are put down very clearly. There is generally a grace period of two years before loan repayment starts. The loan is disbursed as and when it is necessary. The bank has a policy of not funding more than 51% of any proposed project value. This therefore means that the project promoters must contribute 49% of the project cost.

In the Barclays Bank of Kenya Ltd.[25], there exists a procedure which is followed in making a decision as to whether or not a loan is given to a client. First whoever wants a loan must apply for it. He must meet all the banks requirements if he expects to obtain the loan.

The requirements include: he has to be a customer of some branch, he must conduct the account satisfactorily and finally depending on the amount of loan requested, he must offer security which in most cases is more than the loan requested. Besides loans which are advances available to the customer all at once and repayments are fixed for a certain agreed period, there exist overdrafts. An overdraft is a facility at the disposal of a customer for a period generally of one year The customer uses the facility when he needs it. If he does not require it he may not use the facility at all. The overdraft is paid on the expiry date.

Loan approval system in this bank is based on the amount of loan requested for and on the seniority of the officers/managers. The senior the officer/manager the higher the amount of loan he is empowered to approve. At branch level and particularly bigger branches where there are several advance managers within one branch each manager is allocated with the ceiling of loan application he or she can handle under the control of the branch manager. Any loan application above the branch manager's ceiling is submitted to head office for action. At smaller branches where there is only one branch manager, loan applications within his ceiling are handled by him or her. Those above are procedurally forwarded to head office for consideration. All branches therefore submit to head office all loans and overdrafts which are over their discretionary limits. At head office there exists also a structure of advances (loans) managers who scrutinise the loan application forwarded to them according to their seniority an amounts. The more senior the officer is the higher the limit of advances under his control. This limit goes up to the chief executive of the Bank who has the highest limit. Loans which are under head office sanction are forwarded when the respective branch managers are satisfied that the loan applications are in order and carry their recommendations.

It would be wrong if a branch manager submits a loan application to the head office for consideration which he would have declined were it not outside his authority. All loan applications to head office must carry the branch manager's recommendations.

Having been received at the head office the loans or overdrafts are scrutinised by the respective officers who approve them as submitted or approve them subject to certain conditions which should be complied with before the loan is available to the loan applicant. The third option is where the loan application has to be clarified or certain details required before the loan is approved. The branch concerned has to supply the required details or clarification before approval is given. At the worst, the loan application may be rejected outrightly. In this latter case, the branch may appeal to head office to rescind its decision, if the branch is not fully satisfied with the reasons for declining the loan application. If the head office is convinced by the appeal the loan is approved and the decision communicated to the branch. There are various reasons for this pattern of loan approval. The major one is to control the issue of loans by head office for branches and control of senior managers over the junior managers on loans and overdrafts. Also this system of approval ensures that only loans which conform to the bank's lending policy are given. The system also ensures that more senior, experienced managers handle bigger loans and overdrafts which are usually complicated and also carry higher risks. Accountability is set out in a precise manner and is upward.

Decision making is a very important aspect of business. Where proper decisions are made business is likely to succeed and vice versa. In Industrial Development Bank, the procedure of decision making follows a thorough scrutiny of the proposed project in various aspects including financial and technical viability. This scrutiny

is of great importance because the element of risk is drastically reduced. The question which can be posed here is whether the National Construction Corporation has a suitable policy and procedure which it follows in reaching some decision as to whether or not any project should be financed. It is important that the Corporation establish the viability of the project before any financial commitment is done.

In the Barclays bank it is interesting to note that its policy is strictly followed. It is also interesting to note that the branches have got powers to approve some loans. This is of great importance because at the branch level it is possible to know many details about a loan applicant and hence reach a proper decision. It is an aspect which perhaps the National Construction Corporation should look into since it would be in line with the district focus strategy for rural development. Therefore instead of all decisions being made in Nairobi the Corporation should delegate powers to the provincial or district officers so that decisions can be made at that level. This would reduce the time taken by the corporation in making such decisions and also would make work easier for head office staff so that they can have enough time to think about other issues.

However the question of decision making especially in the important area of financing business is a very critical one. Besides assessing the technical and financial viability of a project, security offered and the rest, there is a very important decision to be made and that is how much in terms of figures and subsequently to whom. It is therefore important that some type of model be it mathematical or otherwise be formulated. This model can then be used after all components of the model have been assessed and established. With the model the actual figures in terms of loan can be possible to ascertain. However for this mathematical model to be of any use it must take into account all aspects which do influence the amount of loan to be given. One of these

components is security which is pledged for the loan. This is one of the most important ones because in the event of the project going wrong or the proprietors disappearing the bank or any other institution which gave loan can have recourse to the security given. Therefore the question of security is to reduce the risk of loosing the finance advanced in the event of something going wrong.

The other component of the model is the competence of the loan applicant. The loan applicant must be competent enough to do whatever he intends to do with the loan. The work experience for example must be proved before giving any loan to contractors. If for example the contractor has been doing projects worth one million shillings or thereby and he all of a sudden gets a project of one hundred million shillings one might have to be very careful before making any decision of financing him. This is mainly because he is not experienced in handling that volume of work. Indeed he does not have the managerial capability and therefore any loan given is likely not to be put into good use.

The project to be financed also must be considered before any finance is advanced. The viability of the project must be established. Therefore the viable amount must be taken into account when working out the amount of loan to be given. The amount of loan applied for must be compared to the viable project value so as to avoid a situation where the amount of loan approved exceeds the project value.

Another important aspect as far as the model is concerned is what is referred to as the amount of finance the project Proprietors have to contribute towards the development of the proposed project. This is also called equity finance. It is important that the proprietors do invest some amount of finance in the project. It is only then that the proprietor can be committed to the project since he has also something at stake.

It is also important that the model must include the amount

requested for by the project proprietors. Where the proprietors ask for certain amount it would not be advisable to give more than the same. If this happened the proprietors would be tempted to misuse the surplus funds to the detriment of the projects. Finally the model must also include a component of intuitive influence.

Therefore an ideal model for determining whom to give loan and how much must contain the above mentioned important variables i.e security for the loan, the work experience or technical know-how, the equity finance, the amount of loan applied for and intuitive factors.

Loan administration

In 1976 Kaplinsky[26] undertook a study on the I.C.D.C's small industrial loan commitments. In his findings he pointed out that many of the loan commitments do go to urban centres. He also noted that the enterprises funded are closely related to farming with the result that high loan commitments occured in Central, Western and Rift Valley Provinces. He also found out that loans from the I.C.D.C. are given only when the security offered is adequate to cover the loans. Most of the loan applicants had land as their security. He argued that the degree of land adjudication in a province is an important factor which explains the distribution of loans. In this study an attempt would be made to find out whether the loans of the National Construction Corporation are only given where there is adequate security to cover them.

Another study which has been undertaken is the one by Jorgensen.[27] His main task was to examine the purpose and performance of the I.C.D.C. He decided to get information from the businessmen who have benefited from the loans of I.C.D.C. He got various responses. Some said that application processing procedure was lengthy and hence it takes too long; that the loans given were small and short-term; that repayment started even before machines were properly installed; and that the borrowers were forced to purchase the wrong machines when they were tied

to the suppliers of such machines. An attempt would be made to find out what the indigenous construction businessmen feel about the performance of the National Construction Corporation especially in connection with its financial assistance.

In 1976 Mwaniki[28] undertook another study whose main objective was to find out how the policy of Africanisation is implemented through I.C.D.C's small industrial loans. He worked with a sample of 213 files from the defaulting section of this scheme. His data showed that the value of security was always in excess of the value of the loan offered. The ratio of value of security to I.C.D.C. loan ranged from 1.11 to 1.88 implying that businessmen tied excess assets which could be used to secure additional funds. He finally found out that land accounted for about 19% to 50% of all assets of various types pledged in securing loans in the period 1967 - 1973.

As already mentioned the issue of security is a very important one. In this study examination and analysis of the value of securities offered, if any, as opposed to the amount of loan issued to the indigenous construction businessmen by the National Construction Corporation will be made. Also an attempt would be made to establish the most common security offered and its effects, if any, on the performance of N.C.C.

Another study carried out is that of Kimuyu.[29] He set out to find the effect of some of the I.C.D.C's credit policies and to what extent it served as an effective link between supported business and other financial network. He worked with a sample of 250 successful applications of I.C.D.C's loans. In his findings he concluded that the value of security as would be expected is a crucial determinant of the amount that an applicant would be offered. He went on to conclude that greater loans tend to be offered to applicants from Nairobi, Central and Rift Valley Provinces than to the other provinces taken together.

Generally he found out that the amount requested for are significantly higher than those offered. He argues that lack of adequate security is one thing that would force the corporation to reduce amounts requested for to the amounts that would be commensurate with value of property pledged as collateral. He found out that 43% of the businesses pledged either land with coffee, tea or both or land and plots. 37.15% pledged plots only. The rest pledged either buildings or plots with buildings. He found out that I.C.D.C is serving as a link between businesses it supports and Commercial Banks.

Okelo[30] looked at both the District Joint Loan Boards (DJLB) and Industrial Commercial Development Corporation (ICDC). The DJLB deals in small loans of up to ten thousand shillings whereas ICDC is involved in larger loans. He pointed out that loans from these sources are only made against the security of a landed property such as land with a title deed. As already pointed out elsewhere, the question of security will be examined in detail to determine whether any is given for the loans advanced by the National Construction Corporation.

Ofori's paper[31] outlines the activities of the Bank for Housing and construction of Ghana. This is a bank which was established in 1972 to take care of the financial needs of the construction industry. What is of relevance to us is how loans are administered by this bank. There are conditions which must be adhered to if one has to get any loan from this bank. First and foremost the contractor must have won a job from the government, parastatal organisation or a reputable private organisation. The contractor is also required to open a joint account in the bank in the names of the contractor and the bank. All interim payments are made into this account. Also any loan approved is channelled through

the same account . Any withdrawal from the account is controlled by the bank. This includes paying only on submission of payrolls and invoices from reputable suppliers. Payroll usually includes Contractor's office rent, other periodic expenditures, salary for the contractor fixed by an agreement between the contractor and the bank. Creditors and suppliers are usually paid direct by the bank on behalf of the contractor. The contractor is also required to provide a collateral in form of landed property to secure the loans.

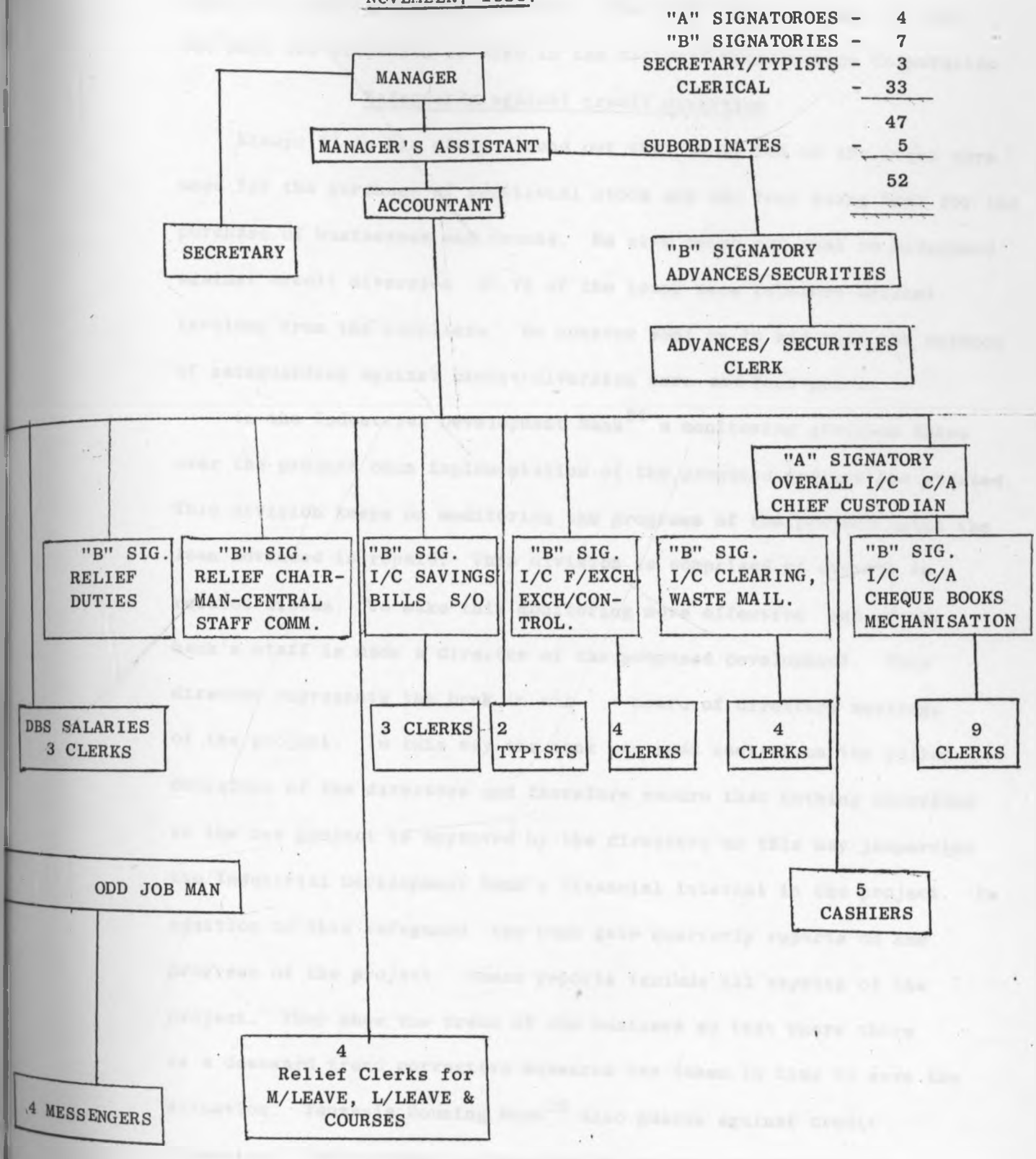
The issues and procedure outlined above are acceptable because of various reasons. The question of the client of the project to be financed is of vital importance. It is suggested that the National Construction Corporation should at least attempt to establish whether a client of a given project has funds before any of the corporation's funds is committed. The above procedure of issuing loans is also acceptable because of its ability to control and monitor their usage. Experience has shown that there is little or no measures which safeguard the usage of the loans issued by the National Construction Corporation. This leaves room for the indigenous contractors to use the loans for other businesses leading to non-repayment of the same.

In the Barclays Bank[32] the administration of loan which has been approved wholly rests with the branch manager. He must ensure that the conditions under which the loan was approved are observed. As shown on chart 1 below, the westlands branch Nairobi has a section which deals only with loans. This section falls under the Assistant Manager and the Accountant. This is the section which ensures that all loan conditions are met. One of the conditions which they look into is the issue of securities. They verify all documents related to security and also the value of the same. They then make sure that the securities are charged. The above points show that the bank is

BARCLAYS BANK OF KENYA LIMITED, WESTLANDS BRANCH, NAIROBI.

PRESENT BRANCH ORGANISATION - CHART I

NOVEMBER, 1980.



SOURCE: BARCLAYS BANK OF KENYA LTD.

FIGURE I

most careful in its loan administration. It has a separate section which deals with the loan administration. The study would attempt to find out what the situation is like in the National Construction Corporation.

Safeguards against credit diversion

Kimuyu [33] in his study found out that about 80% of the loans were used for the purchase of additional stock and the rest being used for the purchase of businesses and trucks. He also found out that to safeguard against credit diversion 91.7% of the loans were released against invoices from the suppliers. He however went on to add that the methods of safeguarding against credit-diversion were not fool-proof.

In the Industrial Development Bank[34] a monitoring division takes over the project once implementation of the proposed project has started. This division keeps on monitoring the progress of the project until the loan advanced is repaid. This division is comprised of experts in related fields. To make this monitoring more effective one of the bank's staff is made a director of the proposed development. This director represents the bank in all board of directors meetings of the project. In this way the bank has some control on the policy decisions of the directors and therefore ensure that nothing injurious to the new project is approved by the directors as this may jeopardise the Industrial Development Bank's financial interest in the project. In addition to this safeguard the bank gets quarterly reports on the progress of the project. These reports include all aspects of the project. They show the trend of the business so that where there is a downward trend corrective measures are taken in time to save the situation. Tanzania Housing Bank[35] also guards against credit diversion. The borrower is required to use his contribution to the same project before he can be given credit. After he has financed the project to some stage, he then obtains loan from the bank. This loan is paid out in well defined stages which number as much as fifteen.

Through this stage payment the bank is able to track down the utilisation of the loan by the borrower. This sounds acceptable method of safeguarding against credit diversion though it has its own weaknesses such as slowing down construction.

Indeed the question of safeguarding against credit-diversion is of crucial importance to the success of National Construction Corporation. Once the corporation has given financial credit it should be able to ensure that this credit is used for the intended use. An attempt would be made in this study to find out whether this is done.

The performance of the National Construction Corporation

In the contribution by Wamae[36] to the vote of the Ministry of Works, Housing and Physical Planning, he pointed out that the performance of the National Construction Corporation was below expectations. He specifically pointed out that the local purchase order (LPO) system cannot be honoured by any supplier. It is possible that these local purchase orders are not honoured due to the fact that the corporation has not been able to pay for the materials obtained through this system. This can easily lead to lack of confidence in the Corporation on the part of the suppliers.

In another contribution to the same vote, Shikuku[37] expressed concern on the non-African domination of the performance of the construction industry. What this implies is that the performance of the National Construction Corporation which can be measured in terms of the number of indigenous contractors who have attained high categorisation or most appropriately in terms of the share in money form of the indigenous contractors in the industry, has not measured up to the expected standard. Kimosop, Cheboiwo and Ombundo[38] while contributing to the above mentioned vote complained of the performance of both the National Construction Corporation and the indigenous contractors.

They pointed out that there was need to improve on the services of the Corporation especially financial. However the question of financial services would be examined in detail to establish whether the problem is its inadequacy or the administration of the same.

While on the same vote Maina[39] touched on the issue of shortage of finance. He noted that the Ministry of works, Housing and Physical Planning of the Government of Kenya would consider advancing the indigenous construction businessmen more money. He however went on to blame the indigenous construction businessmen that their inability to participate in the Construction Industry effectively was due to their misuse of funds given to them by the National Construction Corporation. This comment indicates that the indigenous construction businessmen may have in the past mismanaged finance advanced to them by the corporation. This might be due to their lack of financial management or alternatively because of the laxity of the Corporation control machinery. Therefore the suggestion that more funds be advanced to these businessmen may not be acceptable because the chances are that the funds would be misappropriated again. As already noted elsewhere the Ministry of Works, Housing and Physical Planning should ensure that these businessmen are taught the relevant financial management before any more funds are given to them. In addition the loan administration policies and practices of the Corporation should be re-examined with a view to establishing the loopholes through which these businessmen misappropriate the funds. These policies would then be re-adjusted to wipe out the loopholes so as to avoid any more misappropriation of the funds. Matiba[40] pointed out that the National Construction Corporation has not performed well. "The National Construction Corporation is the sick child of his Ministry but I am trying to get it out of the sick bed and avoid its transfer to the mortuary". However it was finally dissolved. He went on to say that the Corporation had made a false start by financing everybody who came to the

Corporation with anything which resembled a proposal. As already noted the above comments do indicate that the National Construction Corporation has not performed to the expected standards generally and in particular in the financial administration. It is therefore felt that proper measures should be employed so as to improve on the performance of the Corporation.

FOOTNOTES

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C H A P T E R T H R E E

CASE STUDY

The background

The National Construction Corporation* of Kenya is one of the organisations which have been created to indigenize construction industry in Africa. Its existence dates to mid 1967, four years after Kenya had gained her independence.[1] This is the time when a company in the name of National Construction Company was created. This was a fully government owned company which was directly under the Ministry of Works, Housing and Physical Planning. The main objective of this company was to give assistance to indigenous contractors of african origin. This was done through the provision of credit facilities, training, by helping these contractors in obtaining work and more so in the public sector and lastly the company provided advisory services. The company however had no power to engage in direct construction activities.

At the time of the creation of this company the government of the Republic of Kenya was busy implementing the policy of Africanisation in other businesses. Since there were very small number of indigenous contractors it is safe to assume that the creation of National Construction Corporation was through the policy of 'Africanisation'. It is through this policy that the government wanted to counteract the dominance of the construction industry by the foreign firms and those of the asian community. Indeed firms of the african origin faced many constraints to the market entry as already noted elsewhere and therefore the creation of the company was a good step in looking for solutions to these constraints.

It is also worthy noting that a foreign agency by the name Norwegian Agency for International Development (NORAD) played some role in the creation of the company. Initially NORAD provided the first technical assistance which was required by the National

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*The National Construction Corporation was dissolved while the study was at an advanced stage. See page 63.

Construction company. This assistance consisted of technical specialists from a prominent Norwegian contracting company. These specialists were first seconded for five years. Their main task was to set up the National Construction company advisory services. They teamed up with the local experts who were drawn from the parent ministry i.e Ministry of Works, Housing and Physical Planning. NORAD also was involved in the creation of a revolving fund in the year 1968. This was to become the main source of working capital to the indigenous firms against specific contracts they had obtained. NORAD contributed two million shillings towards this fund and the rest of the contribution was met by the Government of Kenya.

Initially the National Construction Company never gave loans directly to the indigenous contractors. It only acted as a guarantor for loans issued by the Industrial and Commercial Development Corporation (ICDC) which was an existing parastatal organisation. However with the creation of the revolving fund, the National Construction company started giving out loans directly to the indigenous contractors against specific contracts won by them. In the period between 1978 and 1981 a total number of 251 contractors benefited from the loans issued by the National Construction Company. The company also issued performance bonds to contractors.

The corporation as a legal entity

The National Construction Corporation was created through a parliamentary Act.[2] Various aspects of the corporation are taken care of by this Act.

Board of directors

The corporation is allowed to have directors who must number a minimum of four or maximum of six. These directors are appointed by the Minister for Works, Housing and Physical Planning. Various qualities of these directors have been stipulated by the Act. At least

one of them must be knowledgeable in accounting. Another must be a civil Engineer. There should also be one who is well versed with building construction knowledge. And lastly one should be an advocate. All these qualities are to assist the members of the Board in performing their duties. On top of the above specified qualities one of the directors must be a permanent secretary to the Treasury. Another must also be the Permanent Secretary to the Ministry of Works Housing and Physical Planning. From among the members of the Board the Minister for Works, Housing and Physical Planning would appoint the chairman of the Board. The chairman and other members of the Board would then appoint a vice-chairman who would normally act when the chairman is not available. All the directors are legally in office for a maximum period of three years after which they are legible for reappointment.

The managing director

The Board of directors normally appoints the Managing Director. However this appointment has got to be approved by the Minister for Works, Housing and Physical Planning. He does his duties according to the general and special directions given to him by the Board. Where the Managing Director would be unable to perform his duties, the members of the Board would appoint another person to the same post and of course with the approval of the Minister.

Board meetings

These meetings are convened by the Chairman of the Board. A minimum number of four meetings per year is allowed for. There may be need for special meetings which can be convened by the chairman. However these special meetings must be requested by at least three directors. Where the chairman is absent, the vice chairman shall preside over the meetings. However if both are absent then the rest of the members of the Board are allowed to elect one of themselves

to preside. Whoever is elected shall have all the powers of the chairman. The chairman has both a casting as well as a deliberative vote. The quorum of the meeting shall be four. A majority vote must be obtained if any resolutions passed by the Board is to be effective.

The corporation's business

The Corporation is a corporate body which is not subject to any of the provisions of the Companies Act or the Banking Act. All its business is conducted under a common seal. The corporation has power to sue and be sued. It has also powers to purchase, hold, manage and dispose of land and any other property. It has powers to enter into contract as it may consider necessary.

The functions of the National Construction Corporation

The corporation has been given powers to carry out certain functions as outlined in the National Construction Corporation Act.[3] First the corporation had been authorised to engage in the construction industry. This is a more general and wide function. It gives the corporation freedom of even doing the actual construction unlike the prevailing situation where actual construction is not done.

The corporation also has been authorised to manufacture or deal in materials, plant and equipments which are used in the construction industry. Through the authority of this function the corporation could even be a supplier of these materials and equipments. In this connection the corporation has established a "plant pool" consisting of excavators, dumpers, concrete mixers, tippers, lorries. rollers and the like. These are hired out to contractors at some competitive rates. This service is of great assistance to these contractors since they do not have the necessary funds which will enable them to purchase the plants. Even if they did have enough funds the bought plant might not be used economically. The corporation has embarked on the manufacturing of precast concrete units. These units include

concrete blocks of various sizes, paving slabs, road kerbs, channels, invert blocks and many more. Many of these precast concrete units are also sold to the indigenous contractors as and when the need arises

The corporation also has been authorised to establish equip and maintain education and training establishment for the benefit of persons employed or to be employed in the construction industry. This is one of the functions of the corporation which has not been developed fully. To date no establishment has been created by the corporation. However the corporation do sponsor school leavers to a number of technical training institutions on yearly basis. The corporation also trains technicians using on-the-job training basis. A good deal remains to be done to enable the corporation to perform this function effectively.

Another function of the corporation is that of furnishing managerial, technical and administrative advice to the indigenous contractors. This function has also not been realised fully. What has been done so far include various seminars organised by the corporation. Through these seminars the indigenous contractors are given these advices. The corporation also sends out its technical 'experts' to assist the indigenous contractors on their sites. The contractors also are free to call at the offices of the corporation to get any advice they might require at any one time. This function requires more improvement if it is to be realised. This would for example involve employing the right staff as far as managerial, technical and administrative expertise is concerned.

The corporation is also authorised to enter into partnership with or acquire the whole or any part of the interest in any company or firm. This is yet another function which has not been exploited by the corporation. It is a function which allows the corporation to say, partner up with indigenous construction firms. Through

partnership the corporation would have some control over the affairs of these indigenous construction firms and hence it could safeguard all its interests.

The corporation also is authorised to invest money in some interest earning deposits with any public body. This is a function whose main purpose is to improve the financial position of the corporation. This has been performed to some limited degree.

Awarding contracts to the indigenous contractors is yet another function of the corporation. The corporation normally tenders for projects and once these tenders have been awarded to it, it then sub-contracts them to the indigenous contractors. These awards are done through a works committee as explained elsewhere. This function has been actively performed and is very popular with the indigenous contractors.

Lastly the corporation has the authority to give out loans to persons engaged in the construction industry. These loans are given out upon such terms and conditions as to security, interest and repayment or otherwise and in such a manner as the Board of directors may decide. This function has been performed very considerably. However the performance of the corporation in this function may call for some improvement if the indigenous contractors are to benefit fully as expected.

Organisation and staffing

The corporation staff consist of mostly the locals. None of the NORAD specialist is working with the corporation. However there are two expatriates who are currently working with the corporation. The two have been supplied under the British supplementation scheme (BESS) which is run by the Overseas Development Administration. These two expatriates work under the Building Division of the corporation.

NATIONAL CONSTRUCTION CORPORATION ORGANISATION CHART

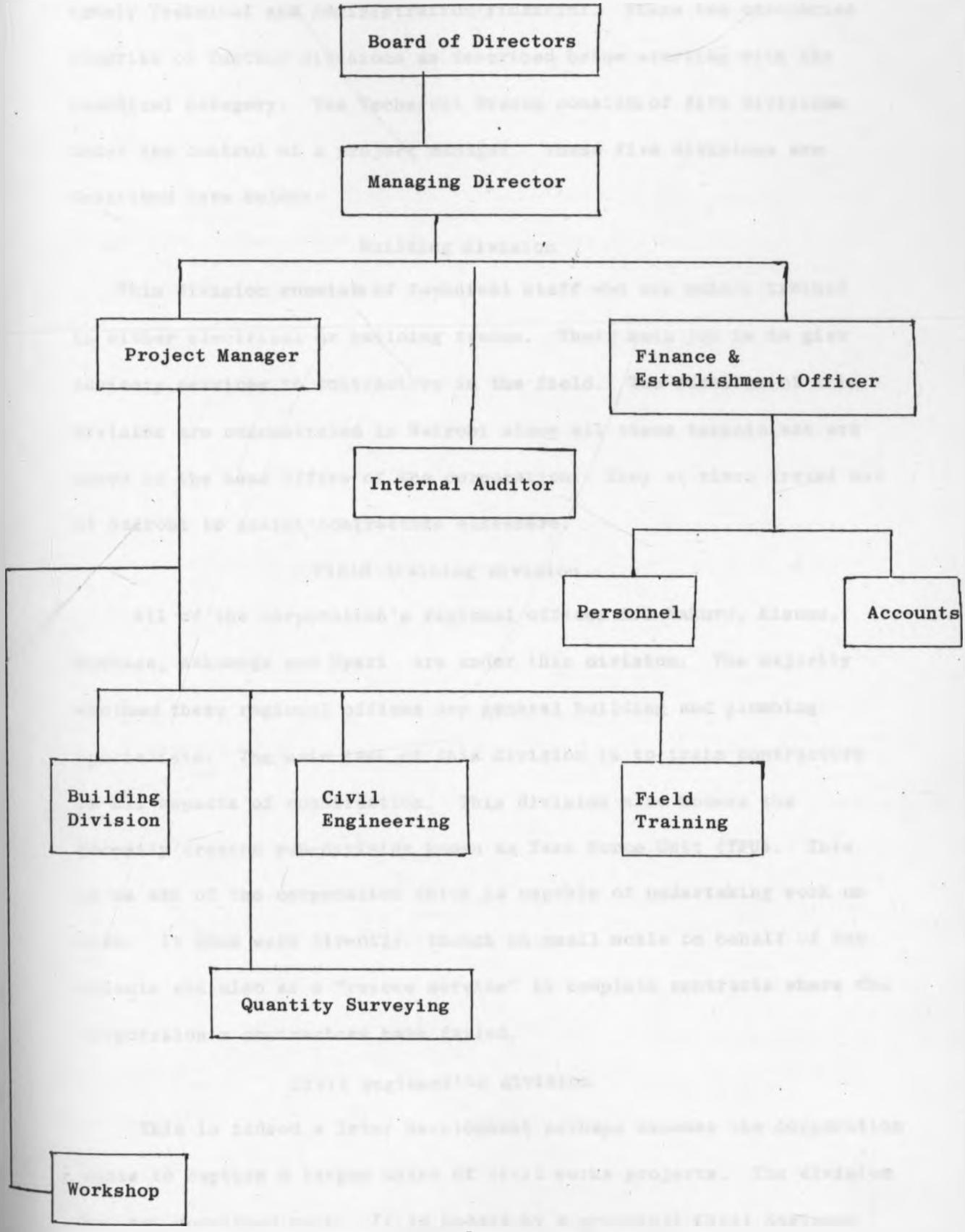

FIGURE 2

SOURCE: Organization structure as published in the corporation official documents such as management wall charts etc.

As shown on the chart on page 52 the corporation's organisational structure is broadly divided into two, main functional categories namely Technical and Administration/financial. These two categories comprise of further divisions as described below starting with the technical category. The Technical Branch consists of five divisions under the control of a project manager. These five divisions are described here below:-

Building division

This division consists of technical staff who are mainly trained in either electrical or building trades. Their main job is to give advisory services to contractors in the field. The services of this division are concentrated in Nairobi since all these technicians are based in the head office of the corporation. They at times travel out of Nairobi to assist contractors elsewhere.

Field training division

All of the corporation's regional offices i.e Nakuru, Kisumu, Mombasa, Kakamega and Nyeri are under this division. The majority who head these regional offices are general building and plumbing specialists. The main task of this division is to train contractors in all aspects of construction. This division also houses the recently created sub-division known as Task Force Unit (TFU). This is an arm of the corporation which is capable of undertaking work on site. It does work directly though on small scale on behalf of the clients and also as a "rescue service" to complete contracts where the corporation's contractors have failed.

Civil engineering division

This is indeed a later development perhaps because the corporation wants to capture a larger share of civil works projects. The division has not developed much. It is headed by a principal Civil Engineer with two other staff.

Quantity Surveying Division

This division takes care of all Quantity Surveying matters. It houses all the Quantity Surveyors. The planning and programming section also falls under this division.It is headed by a Chief Quantity Surveyor. The Quantity Surveyors in this division perform two main functions. They mainly spend most of their time in tendering i.e pricing Bills of Quantities for projects on which the corporation tenders on its own right. Once the contracts are won through tendering the Quantity Surveyors give advice on the selection of sub-contractors. The other function of these Quantity Surveyors is to check on the priced Bills of Quantities prepared by the indigenous contractors. Contractors are always encouraged by the corporation to consult this office before they submit their tenders. This is more so because the corporation is always reluctant to extend loan facilities to the contracts which are under priced. At times the indigenous contractors do get assistance from the corporation in compiling the bill rates.

The workshop division

This division contains most of the corporation's ancillary technical staff. These staff include carpenters, concrete specialists, metal workers and also mechanics. One of the main functions of this division is to maintain the plant and equipment pool.

Contractor registration

The corporation runs registration[4] of the indigenous contractors and it is only after this that it can be able to give assistance. This registration exercise takes a number of stages. The first step in this registration is for the contractor to submit an application form giving full details of the contractor such as the location, past experience, resource, preferred type and size of work and also the area in which contracts can be carried out. This form is then

accompanied with two hundred shillings as registration fee. The corporation may refuse to approve registration if the information given is inadequate. Under such circumstance the contractor would be asked to furnish the corporation with additional information.

A categorisation system has been developed by the corporation. This has five well defined classes as follows:-

Category A - Contractors who are capable of standing on their own without the corporation's assistance.

Category B - Those contractors who are capable of tendering and obtaining their own work but who come to the corporation for occassional financial support and/or provisions of performance bond.

Category C - Those contractors who require some formal training assistance in tendering and/or obtaining work, financial support and minimum technical assistance.

Category D - Those contractors who require maximum training, technical guidance and financial support.

Category E - Those contractors who have recently applied for registration within the corporation and are not known to the corporation except for the information given in their application forms.

Normally contractors are first registered in Category E. In this category the contractors may seek assistance from the corporation's Quantity Surveyors who are stationed at the corporations head office. They may also obtain projects on their own and then come to the corporation for assistance. After a contractor has gained some experience he may apply for upgrading to say category D. Once the application is approved the contractor then stands a good chance of being selected as possible sub-contractor on a project which has been awarded to the corporation.

However for a contractor to get maximum assitance he must strive to be registered in Category C. Under this category he can expect greater continuity of turnover through better access to loan facilities and to sub-contracts from the corporation.

There are two main categories of contractors who are registered with the corporation namely building contractors and electrical contractors. Looking at 1981 register many interesting features are revealed. In table 3 below it is revealed that over fifty six per cent of the total number of the indigenous building contractors are based in Nairobi. The remaining forty four per cent is for all other areas in Kenya. The table shows that of the fifty six per cent found in Nairobi less than one per cent are in category B, five per cent in category C, fifteen per cent in category D and seventy nine per cent in category E. This means that there are no contractors registered in category A. The highest concentration of contractors in Nairobi could be explained by the fact that Nairobi is the capital city of Kenya. And since most of the projects are planned here, it is safer for the contractors to be near the planners, consultants and all those who are involved in project implementation. The headquarters of the National Construction Corporation is also situated in Nairobi and this is likely to be an influential factor for the same. However with the decentralisation of the project planning and implementation the situation is likely to be reversed so that most of the indigenous contractors would be found at the district headquarters. In table 4 it is shown that approximately fifty seven percent of the total number of electrical contractors are once again concentrated in Nairobi leaving only forty three per cent for other areas. Of the fifty seven per cent found in Nairobi, four percent in category B, fifteen percent in category D, thirteen percent in category C and sixty eight percent in category E. Also there are no contractors registered in category A.

Table 3

Distribution of Indigenous Building Contractors by Category and Location 1981.

	Nairobi	elsewhere	total
Category A	(0%) 0 (0%)	(o%) 0 (0%)	0 (0%)
Category B	(0.7%) 3 (0.4%)	(0.3%) 1 (0.1%)	4 (0.5%)
Category C	(5%) 20 (2.55%)	(5.5%) 19 (2.45%)	39 (5%)
Category D	(15%) 67 (8.05%)	(17.2%) 60 (8.45%)	127 (16.5)
Category E	(79.3%)346 (45%)	(77%) 268 (33%)	614 (78%)
Total	(100%) 436 (56%)	(100%) 348 (44%)	784 (100%)

Source: Author's Field Research. (1985)

Table 4

Distribution of Indigenous Electrical Contractors

by Category and Location. 1981.

	Nairobi			elsewhere			total
Category A	(0%)	0	(0%)	(0%)	0	(0%)	0 (0%)
Category B	(4.3%)	2	(2.5%)	(0%)	0	(%)	2 (2.5%)
Category C	(13.0%)	6	(7.4%)	(14.3%)	5	(6.2%)	11(13.6%)
Category D	(15.2%)	7	(8.6%)	(25.7%)	9	(11.1%)	16(19.7%)
Category E	(67.5%)	31	(38.3%)	(60%)	21	(25.9%)	52(64.2%)
Total	(100%)	46	(56.8%)	(100%)	35	(43.2%)	81(100%)

Source: Author's Field Research (1985)

The same factors explaining the concentration of the building contractors in Nairobi do apply for the electrical contractors.

Sources of work

The corporation works in an environment which can be clearly divided into two sections namely; public sector and Private sector. Looking at the public sector one finds that all of the construction contracts are administered by the Ministry of Works, Housing and Physical Planning. Other public works such as water supply developement, transport and communications are administered by Ministry of Water Development and Ministry of Transport and Communications respectively.

The policy of Africanisation to which the corporation owes its creation, as already noted elsewhere, has been maintained in the past. There has always been the need to further the involvement of the indigenous contractors in the building industry. The Ministry has provided for the reservation of contracts under 10.0 million shillings for competition amongst indigenous contractors. This has yet to be implemented. An aspect which could be of interest to note at this point is the delay of payments to contractors. Since the Ministry of Works, Housing and Physical Planning only provides consultancy service to other ministries leaving all budget and budgetary control to the client ministries, there has always been a problem of delay of interim payments. This has obviously created serious effects on the stability of the african contractors. Consequently this has also affected the corporation's revolving fund. On the private sector, the policy of 'Africanisation' has not had any influence. This sector is not affected much by tendering rules which govern the public sector. The indigenous contractors and the corporation have obtained a small number of projects from this sector. This has mainly been through personal contacts and even direct negotiations.

Loan administration

Policy guidelines

Various policies have been formulated by the Ministry of Works, Housing and Physical Planning to assist the corporation in its function of giving out loans to the indigenous contractors.[5] One such guideline is that the loan applicant should possess adequate security for loans. The word adequate is used here to mean that the value of the security must be equal to or be more than loan to be issued. This is a policy which is intended to reduce the risk of losing the loans. It is also a policy which enhances the sense of commitment required on the part of the borrower. This is more so because he would continously remember that his security is at stake hence his determination to succeed in his work will be increased. The corporation also has a policy which restricts the amount of loan to be given out. The loans are normally restricted to a maximum of 25% of the contract value. This is a policy which is meant to take care of the need for money so that a situation does not arise where one has more funds than he requires as this would increase chances of misappropriation. The recovery of loans is also taken care of by stipulating that all loans issued must be recovered in full as at seventy two per cent completion of a given project. This is a policy which is intended also to safeguard the interest of the corporation by ensuring that outstanding loans do not arise. The corporation is also required to ensure that all outstanding debts of any applicant to the corporation have been cleared before new credit can be issued. Its main objective is once again to increase sense of commitment so that whoever gets a loan would work harder to complete repaying the same so that he can increase his chances of getting more loans. Lastly all those who apply for loans from the corporation must be registered members for the corporation. This is understood because it is only safer to assist those contractors who are known to the

corporation.

Procedure of issuing loans

The corporation has developed a procedure through which loans are issued. The procedure is to be followed from time to time whenever contractors who have won contracts on their own want loans. Once a contractor has won a tender, he brings the tender documents to the Chief Quantity Surveyor's office of the National Construction Corporation. This office which consist of a number of Quantity Surveyors examines the documents. The examination involves checking on each of the contractor's rates and comparing the same with the current rates of the industry. An overall viability opinion is then given by this office. The contractor is then asked to sign a letter of irrevocable authority to the effect that all contract payments from the client of the project would be made directly to the corporation. This is necessary because it is only through this way that the corporation would lay hands on the contractor's money so that it can deduct a portion of it to cover its financial commitment. The contractor is also required to sign an agreement that the corporation would be granted access to all contract accounts for inspection. After fulfilling the above procedural requirements, the contractor then prepares a loan application. This is done by filling a form for the same issued by the corporation (See appendix 2). The information required include, the history of the firm in question, details of the security the amount of loan required and for what purpose and also banking details of the firm. The loan application form is then forwarded to an internal loans committee comprising of 18 members of the corporation chaired by the project manager. This committee meets on monthly basis. After examining each loan request, the committee then gives its recommendations which are then forwarded to the finance sub-committee. This sub-committee which consist of two members of the Board of

Directors of the corporation and the Managing Director gives the final approval. This committee then informs the applicants of their decisions accordingly. Once the loans have been approved, the successful applicants are free to apply for these loans stating the amount they require and for what purpose(s). The loan is normally given in two forms namely cash and materials. As for cash the contractor is given a cheque which is in his name. With this cheque the contractor obtains cash from corporation's bank and he can do anything with this cash since after this point there is little or no control over it. Materials are on the other hand given through a local purchase order system (LPO). Through this system a contractor is given an order which enables him to get materials from some supplier. The supplier is then paid at a later date by the corporation. The amount of loan approved is paid out in bits till all of it is paid up. The corporation charges some interest on the loans issued. However apart from the approved loans contractors do apply for short-term finance to assist them in solving their cash flow problems. This category of finance is given out at the discretion of the Managing Director through the advice of the Project Manager.

The recovery of loan is ensured through the repayments formula[6] given below:-

$$R_1 = \frac{P_i \times V_1}{0.8V_c}$$

Where,

R_i = The ith reduction of the loan.
P_i = Value of the interim payment.
V_1 = Value of the loan.
V_c = Value of the contract.

In our equation model on page 66 we argue that the amount of loan approved is a function of many factors namely value of contract, value of

security offered, amount applied for, amount to be invested by the loan applicant and also the work experience of the loan applicant. Assuming that the amount of loan the contractor actually obtains from the corporation is same as the amount approved then the above formula will be re-written as follows:-

$$R_i = \frac{P_i \cdot f\ (C,S,R,T,D)}{0.8V_C}$$

Where,

R_i = The ith reduction of the loan.
C = Value of contract.
S = Value of security.
R = Amount of loan requested.
T = Amount of funds to be invested by the contractor.
D = Work experience of the contractor.

The above formula however assumes that the contractor remains on site, that he completes the job and that the client makes all necessary interim payments. The remaining portion of the interim payment is then passed on to the contractor in cash form. By this formula the loans account should be cleared when the contractor has finished seventy two per cent of the contract after allowing for ten per cent retention.... The corporation also gives performance bonds to the indigenous contractors. It charges a bond fee which must be recouped from the first three interim payments unlike Commercial Banks and Insurance Companies which require the fee to be paid in full before the bond can be given.

The death of National Construction Corporation

The National Construction Corporation was dissolved in 1986 when the thesis was nearing completion. One of the reasons advanced for its dissolution is its mismanagement. This has been confirmed by the study as in chapter 4.

However the purpose for which the National Construction Corporation was created i.e to assist indigenous construction businessmen so that they can play a more active role in the construction industry, still exists. The indigenous construction businessmen have not yet achieved a level of advancement which will enable them to play a more active role in the construction industry. This means that these businessmen would have to be assisted in some way or alternatively there is some need to create another organisation which can perform the functions of the National Construction Corporation. Therefore the death of National Construction Corporation does not mean the death of this thesis. The findings o and recommendation of this study can still be used where the government or any other organisation will be assigned the duty of assisting these contractors.

FOOTNOTES

1. Colin Relf. Helping Towards Self Reliance. An Analysis of Government Sponsored Assistance to Small Scale Contracting Enterprises in Kenya, Swaziland and Botswana. International Labour office 1981 P. 9-12

2. The Kenya Government. National Construction Corporation Act Chapter 493 of the laws of Kenya; Government Printers Page 4-8 1972

3. Ibid P. 8-9

4. The National Construction Corporation; Register of the approved Contractors 1981,P. 1-59, P. 1-9

5. Colin Relf. Helping Towards Self Reliance. An analysis of Government Sponsored Assistance to Small Scale Contracting Enterprises in Kenya, Swaziland and Bostswana, P. 23

6. Ibid P. 32

C H A P T E R F O U R

DATA ANALYSIS

Introduction

As already noted earlier in chapter two it is important that some model be developed to assist the management of the National Construction Corporation in decision making. One of the easiest models to use is the mathematical one. With all the variables of the model established it would be possible to establish the genuine amount of loan which can be approved for a particular indigenous construction businessman. If the model is realistic it would be a more useful tool for the management to rely on rather than making decisions which have no base. For example once an indigenous businessman has applied for a loan from the National Construction Corporation it would be very difficult for someone to make a decision as to how much to give without some model.

The model

In analysing the sample data for this study multiple regression technique was used because of the many variables involved in the model to be established. Several statistics were produced using the computer programme SPSS in which 50 cases of each of the following variables were included:-

L_a = Amount of loan approved. This is the dependent variable.

R = Amount of loan requested by the indigenous businessmen.

S = Value of security pledged by the indigenous construction businessmen.

C = Value of contract to be financed.

₸ = Amount of money to be invested in the contract by indigenous construction businessmen (equity finance).

D = Work experience of the indigenous construction businessmen.

The model could either be additive or multiplicative in nature as

noted in chapter one. The additive nature would take the following form:-

$$L_a = Q + X_1R + X_2S + X_3C + X_4T + X_5D$$

Where, Q is a constant and X_is are the regression coefficients. The above equation has been established as follows:-

$Q = 22.11628$ $X_1 = 0.74669$ $X_2 = 0.02651$

$X_3 = 0.02511$ $X_4 = -0.42288$ $X_5 = -4.39058$

Therefore,

$$L_a = 22.116 + 0.747R + 0.027S + 0.025C - 0.423T - 4.391D \quad (1)$$

The multiplicative will take the form of:-

$$L_a = R^{X_1} S^{X_2} C^{X_3} T^{X_4} e^{(X_5D + Q)}$$

The above equation has also been determined as follows:-

$Q = -0.022$

$X_1 = 0.77225$ $X_3 = 0.17281$

$X_2 = 0.00529$ $X_4 = -0.00578$

$X_5 = -0.01323$

Therefore,

$$L_a = R^{0.772} . S^{0.005} . C^{0.173} . T^{-0.006} . e^{(-0.013D - 0.022)}$$

However to decide on which of the two models is a better predictor a statistic called R square which is the percentage of L_a explained by the independent variables is used. For the additive form the aggregate R^2 is 96.167 This means that the independent variables given in the predictor model explain 96.167% of the L_a.
In the multiplicative model the R^2 is 95.906%.
Therefore for this analysis we take the additive model since its R^2 is better than that of the multiplicative model.

Two important questions have to be answered if the selected additive model is to be confidently put into any practical use. The first question is to find out how accurate is the model a predictor of L_a. Secondly we should find out whether the regression coefficients i.e X_is

are statistically significant. The answers to both questions are provided by the multiple regression program. This program has various statistics which have assisted the researcher in answering the two questions. The actual calculation of Q and X_i's requires a set of simultaneous equations derived by differentiating $(L_a - L'_a)^2$ and equating the partial derivatives to Zero where L'_a is the predicted L_a. This ensures that $\Sigma(L_a - L'_a)^2$ (i.e sum of squared residuals) is minimal. This makes multiple regression technique appropriate to:-

(a) Find best linear prediction equation and more important evaluate its prediction accuracy.

(b) Control for other confounding factors so as to evaluate the contribution of a specific variable or a set of variables.

Notes on regression coefficients

A regression coefficient say X_I in equation (I) stands for the expected change in L_a with a change of one unit in R when S, C, T and D are held constant. To be more precise it indicates the expected change in the amount of loan approved between two groups that happen to differ on the amount requested (R) by one unit but equal on all other independent variables. This interpretation justifies calling these regression coefficients partial regression coefficients. Another important view of regression coefficient is that of the "combined additive effect". This simply means that the combined 'effects' are additive e.g suppose we change each value of R,S,C,T and D by one unit then the expected change in L_a would be $(X_1 + X_2 + X_3 + X_4 + X_5)$. In other words if there are two indigenous construction businessmen applying for loan from the National Construction Corporation and the independent variables of the two differ by one unit on all of them, the expected difference in the amount approved for the two businessmen would be $(X_I + X_2 + X_3 + X_4 + X_5)$.

Prediction accuracy

The accuracy of the predictor model is done by analysing the residual or the difference between the estimated value of the amount of loan approved (L_a) and its actual value as approved by the National Construction Corporation. In this analysis the technique used is one of the most widely used statistic. The standard error of estimate (S_{ee}) which simply means the standard deviation of actual amount of loan approved values from the amount of loan predicted (L'_a) values. The formula for calculating the S_{ee} is shown below:-[1]

$$S_{ee} = \sqrt{\frac{\sum (L_a - L'_a)^2}{N}}$$

Where,

L_a = actual loan amount approved.

L'_a = loan amount predicted.

N = sample size.

The division of residual sum of square ($(L_a - L'_a)^2$ by the sample size N (which in this particular case is 50) gives the average of squared residuals and the taking of square root makes S_{ee} a sort of "average residual" or"average error" in L_a from the regression equation. This gives the average difference between the amount of loan actually given and the amount of loan predicted by the model. The standard error of estimate in the Prediction equation (2) is = ± 37,269.63 units of L_a. This figure is taken from page 4 print out A when all the independent variables are in the equation. In other words the predicted amount averagely differ from the actual amount of loans approved by Kshs.37,269.63 plus or minus. Considering that the average amount of loan approved is 178,080 the S_{ee} of Kshs.37,269.63 which is 20.93% is on the higher side. It can therefore be argued that the predictor model is not acceptably accurate.

Contribution of an independent variable in the explained variation in L_a

The technique of multiple regression can be viewed both as a means of evaluating the overall contribution of the independent variables and a means of evaluating the contribution of a particular independent variable with the influence of other independent variables controlled (This gives the partial correlation coefficients which would have otherwise been given by a partial correlation analysis).

The easiest way of telling how much an independent variable has contributed to the explained variation in L_a is by R square (R^2) statistic. This can be defined as follows:-

$$R^2 = \frac{\text{Variation in La explained by an independent variable}}{\text{Total Variation in La}}$$

From page 4 of printout A the summary table shows these individual (appendix 6) R^2s in the second column. The interpretation of R^2 is simple and indeed straight forward. For instance the figure of 0.95179 appearing for variable R means that 95.179% of the variation in L_a is explained by the amount of loan requested by the indigenous construction businessmen. Since the R^2 is cummulative (as per print out A page 4) the contribution of other independent variables can be obtained. The R^2 for the combined amount of loan requested (R) and the contract value (C) is 0.95802 but since R value is 0.95179 then C = 0.00623. This means that the contract value (C) explains only 0.623% of the total variation of the amount of the loan approved by the corporation. Following the same procedure the amount of finance invested by the indigenous construction businessmen (T) contributes or explains only 0.216% of the total explained variation, security pledged explains 0.086% and lastly the experience of the indigenous contractor applying for loan explains only 0.063% of the total explained variation.

But the overall accuracy of the prediction equation is also reflected by R^2. The overall R^2 which is defined as follows:-

$$R^2 = \frac{\text{Variation in La explained by the combined linear influence of the independent variables}}{\text{Total variation in La}}$$

This figure is also found on page 4 of printout (A) as 0.96167 which means that 96.167% of the variation in L_a is explained by R,S,C,T and D.

Statistical inferences

Can certain variable be deleted from the regression equation?

The answer to this question involves a systematic decomposition of the explained sum of squares into components attributable to each independent variable in the equation. Basically there are two ways of doing this:-

(a) The standard regression method.

(b) The hierarchical method. (step-wise multiple regression)

In the standard regression method each variable is treated as if it has been added to the regression equation in a separate step after all other variables have been included. Then the increment in R^2 (or in the explained sum of squares) due to the addition of a given variable is taken as the component of variation attributable to the variable. This method has not been used in this analysis.

In the hierarchical method (used in this analysis) the variables are added into the equation in an order controlled or predetermined by the researcher (with a twist). The twist is the order option that was used for the computer to determine the importance of each variable and then enter the variables into the equation one at each step in the order of their importance (or contribution). This method is also called Step-wise Multiple Regression. The increment in R^2 or in the

explained sum of squares at each step is taken as the component of variation attributable to the particular variable added on that step.

Overall test of the predictor equation

The overall F-test (which can also be used as an overall test for goodness of fit of the regression equation) uses statistical inference procedure to test the null hypothesis that the multiple correlation coefficient is zero in the population from which the sample was drav i.e it indicates whether the (assumed random) sample of observations analysed have been drawn from a population in which the multiple correlation coefficient is equal to zero and that any observed multiple correlatio is due to sampling fluctuation or measurement error. The statistic used for this overall test is:[3]

$$F = \frac{R^2/R}{(1-R^2)/(N-R-1)}$$

Where,

R= is the number of independent variables in the question so far.

N= is the sample size.

R^2= is the explained variation in L_a which has been discussed elsewhere.

The overall F is one shown at the beginning of each step and not the F shown for individual independent variables. The F ratio is distributed approximately as the F distribution with degrees of freedom R and N - R - I. At page 4 step 5 of printout A (appendix 6) overall F is given by:-

$$F = \frac{R^2/R}{(1-R^2)/(N-R-1)} = \frac{0.96167/5}{(1-0.96167)/44}$$

$$= 220.79782$$

Reference to the F distribution in a statistical table indicates that the probability of getting an F ratio equal or greater than 220.79% is less than 0.01. It can therefore be concluded that it is unlikely that the sample was drawn from a population in which multiple R = 0.

Test of significance of the correlation coefficient for each individual independent variable.

This is again through an analysis of the F ratio computed for each independent variable. This is worked out as follows:-

$$F = \frac{\text{(Incremental SS due to D)/1}}{SS_{res}/\ (N-R-1)}$$

Where,

SS = Sum of squares

D = Is last variable to be included in the equation.

Therefore incremental SS due to D is the R^2 change for the particular variable in the equation at that step. SS residual is the sum of squares for the residuals. Using the hierarchical method for all the independent variables the values are obtained:-

For R,

$$F = \frac{0.95179/1}{(I - 0.96167)/44} = 1092.63$$

For C,

$$F = \frac{0.00624/1}{(1-0.96167)/44} = 7.163$$

For T,

$$F = \frac{0.00215/1}{(1-0.96167)/44} = 2.468$$

For S,

$$F = \frac{0.00086/1}{(I-0.96\ 167)/44} = 0.987$$

For D,

$$F = \frac{0.00063/1}{(I-0.96167)/44} = 0.723$$

By comparing these values with the critical F value from F tables (F_c=4.06) for I and 44 degrees of freedom, it is found that only the amount of loan requested by the indigenous contractors (R) and the value of contract (C) are significant at 0.05. It is also interesting to note that the same independent variables are significant when use is made of the standard regression method for which the F values are given in the schedule of variables in the equation at each step.

The second sub-hypothesis is also accepted since the work experience of the indigenous construction businessmen (D) is not significant. This therefore means that the stated sub-hypothesis cannot be rejected. What is more interesting however is the third sub-hypothesis in which the amount of loan requested by the indigenous contractors (R) is statistically significant at 0.05. This means therefore that these indigenous construction businessmen do obtain the amount they apply for. This is not good practice because if every indigenous construction businessmen obtains what he requests then chances are that he would not bother about other requirements which influence the amount of loan approved. This can therefore perhaps explain the non-significance of the security offered by the businessmen. The fourth sub-hypothesis that the contract value plays a very insignigicant role in determining the amount of loan approved for the indigenous construction businessmen cannot be accepted since (C) is statistically significant. This means that the National Construction

corporation takes into account the value of the contract when approving loans for businessmen.

Conclusions

Checking on the F values various comments can be made on the stated hypotheses. Looking at the first sub-hypotheses i.e it is found out that the security pledged by the indigenous construction businessmen is not statistically significant with respect to the amount of loan approved by the corporation. It therefore means that the stated sub-hypotheses is accepted. This is indeed contrary to what other financial institutions do. Under normal practice the financial institutions normally lay major emphasis on the security before any credit can be approved and advanced. This, as stated earlier, is understood because in the event of things going wrong so that loan repayment is not effected then the institutions can have recourse in the security provided. In these financial institutions and banks, the security provided normally is more than the loan advanced with the result that there is always a safety margin.

In the case in point, that is the National Construction Corporation and the indigenous construction businessmen one may argue that since the objective is to develop the indigenous construction industry some risk must be torelated. It is indeed acceptable because most of the indigenous construction businessmen might not be having enough security to offer.

Sensitivity analysis

On examining table 5 below it is found that there is a very high correlation between the amount of loan requested by the indigenous construction businessmen (R) and the amount approved (La). The same applies when amount requested is correlated to security. The actual correlation values are 0.97560 and 0.82337 respectfully. One of the main tasks of this study is to develop a model

Table 5

Correlation coefficients

	L_a	S	C	R	T	D
L_a	1,00000	0.82818	0.69224	0.97560	0.58596	-0.37616
S	0.82812	1.00000	0.67056	0.82337	0.61462	-0.37656
C	0.69224	0.67056	1.00000	0.64789	0.46590	-0.26329
R	0.97560	0.82337	0.64789	1.00000	0.63129	-0.36673
T	0.58596	0.61462	0.46590	0.63129	1.00000	-0.39165
D	-0.37616	-0.37456	-0.26329	-0.36673	-0.39165	1.00000

Source: individual research

Where, L_a = Is the loan approved

S = The value of security

C = The value of Contract to be financed

R = Amount of loan requested

T = Amount to be invested in the project by the contractor

D = Dummy variable for work experience of the contractors

which would be used as a financial management tool. The amount of loan requested (R) was dropped from the original model and the effect was analysed. The results of this second analysis are in the second print out labelled B.

The general format of analysis follows closely the first analysis. The only difference being the figures and the loan predictor model has no R (amount of loan requested). The predictor equation would take the following format:-

$$L_a = Q + X_1S + X_2C + X3T + X_4D \qquad (5)$$

This equation has been determined as follows:-

$$L_a = 52.88988 + 0.30648S + 0.06146C + 0.50165T - 0.0896359D$$

The R^2 statistic for the above model is 0.72905. This means that the independent variables in the model only explain 72.905% of the amount of loan approved.

There are two important questions which must be answered as in the previous analysis. These questions are; is the predictor model accurate enough? Are these regression coefficients (X_s) statistically significant? To be able to answer these questions we would consider the standard error of estimate (S_{ee}) and the F - ratios for each coefficient. These have been covered in more detail in the first part of this analysis. How accurate is the predictor equation of L_a? S_{ee} which is the "average residual" or the "average error" in L_a from the equation is determined by:-

$$S_{ee} = \sqrt{\frac{\sum(L_a - L_a')2}{50}}$$

This value is obtained from page 4 of the second print out (appendix 7) and is

equal to 97.986. This is approximately 98. This means that the predictor equation (5) above predicts the amount of loan approved by the National Construction Corporation with an accuracy of 98 plus or minus units of loan approved (L_a) on average. It should be noted here that S_{ee} is given at every step of regression that is each time a new variable is added into equation for example in step I the equation is:-

$L_a = Q + XS$ which works out to be

$L_a = 40.161 + 0.428S$

The S_{ee} of the above equation is 102.16898. This is a very bad predictor especially when we note that on average terms loan approved by the Corporation (L_a) = 178.08.

In general the overall predictor model has a standard error of estimate of 55.06%. The independent variables also leave some variations unexplained. From page 4 of the second print out the overall R^2 statistic is equal to 0.72905. This means that the named independent variables only explain 72.905% of the variations of the amount of loan approved (L_a). Comparing the same with the corresponding figure on page 4 of the first print out that is 96.167% it is found that 23% of the explanations of the variation is lost. Are the regression coefficients statistically significant?

To answer this question the F-statistic value for each coefficient is first compared by using the formula below:-

$$F = \frac{R^2/R}{(1-R^2)/(N-R-1)}$$

To start with, the above equation can be used to determine whether there is any relationship in the whole sample (overall F) that is whether the hypothesis multiple R = 0 statistically holds. From page 4 of the second print out

$$F = \frac{0.72905/4}{(1 - 0.72905)/45}$$

$$= 30.2706$$

Reference to the F distribution statistical table for F with degrees of freedom 4 and 45 shows that the probability of getting an F ratio equal to or greater than 30.27 is less than 0.01. We therefore conclude that it is unlikely that the sample was drawn from a population in which multiple R = 0 statistically. What of each individual coefficients?

Calculation of the F-statistic for each coefficient is the same as in the first part of this analysis. These values work out as follows:-

For S,

$$F = \frac{0.68578/1}{(1-0.72905)/45} = 113.896$$

For C,

$$F = \frac{0.03407/1}{(1-0.72905)/45} = 5.6584345$$

For T,

$$F = \frac{0.00656/1}{(1-0.72905)/45} = 1.0895019$$

For D,

$$F = \frac{0.00264/1}{(1-0.72905)/45} = 0.438358$$

By comparing these values with the critical F value (F_c=4.06) from F-tables

for 1 and 45 degrees of freedom we see that only S and C are significant at 0.05. What this would mean therefore is that the corporation takes into consideration the value of security (S) and value of contract (C) when approving loans. This seems to be acceptable though some explanation of the variation is lost by removing the variable R from the first model.

Test for auto-correlation

There are problems which can arise in model estimation. One such problem is one in which what happens in one period affects others in the future periods. This can have serious effects on the regression coefficients and hence the significance and non-significance of the same may not be valid.

The statistic which is used to test for this problem is called Durbin-Watson statistic (d). This statistic is defined as follows:[5]

$$d = \frac{\sum_{i=2}^{n} (e_i - e_{i-1})^2}{\sum_{i=1}^{n} e_i^2}$$

Where

e_i = is the difference between the observed and estimated ones.

n = is the total number of observations.

Where this statistic is significant then we can accept the hypothesis that the effects of the auto-correlation have affected our models.

In our first model, K=5 (number of independent variables) and n=50 (number of observations of the independent variables). From the Durbin Watson tables we find that at 1% level of significance

$d_L = 1.16$ $d_V = 1.59$.

The calculated from the computer print-out A is equal to 2.15264. (see appendix 9). Therefore $d=2.15264 < d_L=1.16$ and hence we conclude that the null

hypothesis that there is no auto-correlation among the independent variables is accepted.

For the second model the same analysis is used. For k=4 and n=50 at 1% level of confidence the Durbin - Watson tables give us the following:-

$d_L = 1.20$ $dv = 1.54$.

When these figures are compared to the figure in the computer print out B, which is 1.86987 (see appendix 10) we find that:

$d = 1.86987 > d_L = 1.20$.

Hence the null hypothesis that there is no auto-correlation effects in the model estimation can be accepted. Therefore the earlier conclusions concerning the significance or non-significance of the correlation coefficients for both models still hold.

The loan predictor model

As already noted the first predictor model is not acceptable because the amount of loan requested by the indigenous construction businessmen is the dorminant factor of the amount of loan he obtains from the National Construction Corporation. Therefore the indigenous construction businessmen already know how much they would obtain from the Corporation even before their cases are considered. In addition important components of the model such as the value of the security offered by these businessmen are insignificant. This model would not produce the kind of practice which is acceptable to the researcher.

On the second model which is developed after eliminating the amount of loan requested (R) from the first model, one would say that it is an acceptable one. This is so because although some explanation of the variations is lost by dropping the amount of loan requested by the indigenous businessmen the value of security and that of the contract are now significant indicating that these are now the main determining factors of the amount of loan which is approved

by the corporation. This is in line with what happens in the commercial banks and other financial institutions. In these two the nature and value of security pledged together with the value and viability of the project in question plays a very significant role in determining whether a loan should be given and how much it should be. The model also indicates that the more one invests the more he should obtain from the corporation.

This is indicated by the plus sign for the independent variable (T) in the model. This is understood because it will provide additional security for the loan given. This is because the indigenous construction businessman would always be remembering that he has also something more at stake and hence he would work hard to ensure that he successfully completesthe project. This is in agreement with what Tanzania Housing Bank does. This particular bank as already pointed out in earlier (page 40), requires that the loan recipient finances a project to some stage before he can expect to obtain a loan. Also the Industrial Development Bank as pointed out on page 30 of chapter two funds only 51% of any proposed project and the remaining 49% is funded by the project promoters. Therefore this is a good practice which can also be applicable in this particular case of the National Construction Corporation. The issue of the experience of the construction businessman is also important as already indicated earlier. The negative sign for the independent variable D is acceptable. It indicates that the more an indigenous construction businessman is experienced the less loan he obtains. This assumes that the experienced indigenous construction businessman must have built his equity base or alternatively he has other areas from which he can obtain funds. These would include areas such as commercial banks where he has been banking his money. Also because of his experience he would have built some good working relations with say suppliers of materials who could easily

give him credit facility unlike his less experienced counterpart.

The predictor model has a general standard error of estimate of 55.06% which we consider to be on the higher side. However given that the standard error of estimate is obtained by comparing the actual amount of loan approved (L_a) and loan amount predicted by the model (L_a') one would safely argue that S_{ee} statistic should not be used as the only arguement for rejecting this model. However to minimise this problem, limitations to the model would be introduced. These limitations would help in controlling cases which are likely to overshoot and therefore create a large standard error of estimate. One of the limitations is formulated from the stated policy of the National Construction Corporation of financing not more than 25% of the contract value. Therefore the limitation would be $L_a \leq 0.25C$. The other limitation which can be useful is that of security and the amount of loan approved. As already noted security should be equal to 100% of the amount of loan approved for any good financial business. However it is important that loan approved be less than the value of security so that there is always a safety margin. The limitation arising from this would be as follows:-

$$L_a \leq S.$$

Therefore the recommended model is as follows:-

$$L_a = 52.88988 + 0.30648S + 0.06146C + 0.50165T - 0.0896359D$$

Subject to:-

$$L_a \leq 0.25C \qquad S \neq 0, \quad R \neq 0,$$

$$L_a \leq S \qquad C \neq 0$$

The model was tested through the computer using a basic program (see appendix 8) and various values of loan approved were generated in form of a table (see table 6).

Table 6: Loans to be approved

La	S	C	T	D	La/S%	La/C%
54764	60,000	550,000	10,000	27500	91	10
70,087	110,000	550,000	10,000	27500	64	13
85,411	160,000	550,000	10,000	27500	53	16
100,735	210,000	550,000	10,000	27500	47	18
116059	260,000	550,000	10,000	27500	45	21
131,383	310,000	550,000	10,000	27500	42	24
137500	360,000	550,000	10,000	27500	41	25
137,500	410,000	550,000	10,000	27500	38	25
137,500	410,000	550,000	10,000	27500	37	25
60,000	60,000	1,050,000	10,000	52500	100	6
98548	110,000	1,050,000	10,000	52500	90	9
113,872	160,000	1,050,000	10,000	52500	71	11
129,196	210,000	1,050,000	10,000	52500	62	12
144520	260,000	1,050,000	10,000	52500	56	14
159,844	310,000	1,050,000	10,000	52500	52	15
175,168	360,000	1,050,000	10,000	52500	49	17
190,492	410,000	1,050,000	10,000	52500	46	18
205,816	460,000	1,050,000	10,000	52500	45	20
60,000	60,000	1,050,000	10,000	77500	100	4
110,000	110,000	1,050,000	10,000	77500	100	7
142,332	160,000	1550,000	10,000	77500	89	9
157,656	210,000	1550,000	10,000	77500	75	10
172,979	260,000	1550,000	10,000	77500	67	11
188,304	310,000	1,550,000	10,000	77500	61	12
203,628	360,000	1,550,000	10,000	77500	57	13
218,952	410,000	1,550,000	10,000	77500	53	14
234,276	460,000	1,550,000	10,000	77500	51	15
				Average	62	15

Source: Author's research.

Where,

La= amount of loan to be approved.

S = value of security pledged.

C = value of Contract.

T = amount of money invested in the project by the contractor.

D = Work experience of the Contractor.

The analysis of the results in table 6

The results in the above mentioned table have been analysed under two major categories namely: loan approved versus the value of security pledged and loan approved versus the value of the contract to be financed. The values of the three independent variables i.e the value of security (S), the value of the contract (C) and the work experience of the indigenous contractor (D) have been varied as indicated in the table while the value of the amount of finance to be injected into the contract by the indigenous contractor (T) has been kept constant. The analysis is as follows:-

Loan approved versus the value of securities pledged

As pointed out in chapter two it is good financial management practice to have the amount of loan approved being less than the value of security pledged. The upper limit of this should be where the amount of loan approved is actually equal to the value of security. The same information is indicated in one of the National Construction Corporation's policies which states that there should be adequate security for every loan approved. Considering the value of loan approved (La) as a percentage of the value of security pledged (S) as indicated in column six of table 6, it is clear that 24 cases are less than 100% while the remaining 3 cases are equal to 100%. For these three cases it can be argued that there is no safety margins so that in the event of the indigenous construction businessmen misusing the loans approved and advanced to them it would not be possible to obtain or recover the same from the securities more so where the securities turn out to fetch less than expected. For the other 24 cases however there is a safety margin and incase things go wrong it would be possible for the loans to be recovered from the securities. On the other hand as indicated in chapter three, the amount of loan approved is not given all at once to the indigenous construction businessmen. It is usually given in small bits as need arises and this minimises the insecurity of the loans. This is particularly so since the indigenous construction businessman starts repaying

the small amount of loan he has received after the first month of the contract period.

On average the amount of loans approved by the National Construction Corporation using the proposed model is 62% of the total value of securities offered by the indigenous contractors. This is indeed acceptable because the remaining 38% provides a comfortable safety margin so that in the event of the values of the securities being less than estimated in the open market it would still be possible to recover the loans approved and advanced to the indigenous construction businessmen.

loan approved versus value of contract

In general the value of loans approved should not exceed the value of the contracts which are being financed. This is understood because the value of the loans above the contract values would not be required unless the projects were underpriced and hence uneconomical. Such cases as indicated in chapter three are rejected at an early stage.

The National Construction Corporation has a policy of financing a maximum of 25% of the contract value.

In connection with this the amount of loan approved has been calculated as percentage of the value of the contracts to be financed and the results entered in column seven of table 6. It is clear that out of the 27 cases none is above 25%. There are three cases which are equal to 25% while the remaining 24 cases are below 25%. As pointed out earlier this forms another safety measure so that the indigenous contractor does not find himself with a lot of money which he would most likely want to use for other purposes unrelated to the construction business.

Security

Types of securities

There are various types of securities which could be offered for the loans issued by the National Construction Corporation. Table below shows four types of securities which were pledged by the indigenous construction businessmen for the loans issued by the corporation in the period between 1978 and 1981. There are five types of securities land/plots, buildings, machinery and lorries. The table shows that in the year 1978 there were a total of forty-one securities. Land/plot took 100% of all securities pledged. In the year 1979, all the above named types of securities were pledged. In total thirty-nine securities were pledged. Of these, land/plottook 87.18%, buildings 5.13%. machinery 2.56% and lorries 5.13%. In 1980, the situation was slightly different. A total of sixty-nine securities were offered. Land/plot took 85.51%, buildings 13.04% and lorries 1.45%. In 1981 only three types of securities were pledged. Out of a total of twenty-nine securities, land/plots took 82.76%, buildings 13.79% and lorries took 3.45%

On the average for the period 1978/81 land/plot took the largest share having 89% of the total number of securities pledged. Buildings took 8% while machinery took 1% and lorries 2%.

The above findings lead us to thinking about the whole question of security for the loans. The findings show that the indigenous construction businessmen have nothing to offer as security other than land/plot. This has got its own problems. Perhaps it should be noted here that since the population of the Republic of Kenya is increasing rapidly, the land/plot owned by an individual is on the decrease. In addition the value of land especially where it is far from urban areas is very low compared to other securities and also to the amount of loans the indigenous contractors got from the corporation.

Securities versus loans approved

One of the policies of the corporation as noted earlier is to ensure that loans are only advanced against adequate security. In the table 8 below very interesting features are revealled. In the year 1978, 22.81% of the loans were approved by corporation against adequate

Table 7

An analysis of the properties pledged as security for loans issued by the National Construction Corporation.

Year	Land/Plot	Building	Machinery	Lorries	Total
1978	41 (100%)	-	-	-	41 (100%)
1979	34 (87.18%)	2 (5.13%)	1 (2.56%)	2 (5.13%)	39 (100%)
1980	59 (85.51%)	9 (13.04)	-	1 (1.45%)	69 (100%
1981	24 (82.76%)	4 (13.79%)	-	1 (3.45%)	29 (100%)
Total Av. %	158 (89%)	15 (8%)	1 (1%)	4 (2%)	178 (100%)

Source: Author's Field Research, (1985.)

Table 8

An analysis of loans approved versus securities pledged.

Year	A	B	C	D
1978	13 (22.81%)	25 (43.86%)	19 (33.33%)	57 (100%)
1979	14 (22.95%)	24 (39.34%)	23 (37.71%)	61 (100%)
1980	15 (16.48%)	49 (53.85%)	27 (29.67%)	91 (100%)
1981	9 (21.43%)	13 (30.95%)	20 (47.62%)	42 (100%)
Total	51	111	89	251
Av. %	(20.31%)	(44.22%)	(35.47%)	(100%)

Source: Author's Field Research, (1985).

Where
A - number of loans approved for which adequate security was pledged.
B - number of loans approved for which inadequate security was pledged.
C - number of loans approved for which no security was pledged.
D - total loans issued.

security pledged by the contractors, 43.86% of the loans were approved against inadequate securities. The remaining 33.33% of the loans were approved against no security at all. The individual amount of loan approved without security at all ranges from twenty thousand to four hundred and fifty thousand shillings.

In 1979, adequate security was pledged for 22.95% of the loans approved. 39.34% of the loans were approved against inadequate security. And 37.71% of the loans were approved against no pledged security. In 1980, also adequate security was offered for 15.38% approved loans. 53.85% loans were approved against inadequate security. The remaining 30.77% of the loans were approved against no pledged security. Lastly in 1981, 21.43% of the loans were approved against adequate security 30.95% against inadequate security and 47.62% against no pledged security. On the average 20.31% of loans were approved against adequate security, 44.22% against inadequate security and 35.47% against no security.

Comparison of loans approved and loans issued

The essence of approving loans is to be able to set targets for control purposes. Otherwise if there is no particular amount of loan approved, it would be difficult to know how much loan to issue to a particular indigenous construction businessman. Therefore our argument is that once the corporation has approved some amount as the maximum loan to be issued, it must be able to ensure that these amounts are not exceeded. Otherwise if this is not possible then the need for approving loans would not be justified.

On examining table 9 below very useful findings came to light. These findings do assist in assessing the competence of the Corporation in controlling the amount of loans issued so that the set targets are not exceeded. In 1978, 42.11% of the total loans issued were within the approved amount leaving 57.89% for those which exceeded the approved

Table 9

Comparison of approved loans to loans issued

year	A	B	C
1978	24 (42.11%)	33 (57.89%)	57 (100%)
1979	29 (47.54%)	32 (52.46%)	61 (100%)
1980	41 (45.05%)	50 (54.95%)	91 (100%)
1981	23 (54.76%)	19 (45.24%)	42 (100%)
Total	117	134	251
AVE.%	47.37%	52.63%	100%

Source: Author's Field Research.

Where A The number of issued loans which were within approved amount.

B The number of issued loans which exceeded approved amounts.

C The total number of loans issued.

amounts. In 1979, the situation improved and 47.54% of the total number issued were within the approved amounts. The remainder which is 52.46% forming those which exceeded the approved amounts. In 1980 things deteriorated and 45.05% of the issued loans were within the approved amounts while the remaining 54.95% is for those issued loans which exceeded limits. Finally in 1981, things changed for the better and it is found out that 84.76% of the issued loans were within the approved amounts leaving 15.24% being above the approved amounts.

On the average 47.37% of the total loans issued were within the approved amounts while the remaining 52.63% is for those issued loans which exceeded the approved amounts. In the above 52.63% there are extreme cases which are worth noting. In 1978 for example 18.18% of the exceeding cases were well over 100% in excess of the approved amount with 6% of these being over 200% in excess of the same. In 1979, 12.50% of the exceeding cases were over 100% in excess of the approved amount of loans. In 1980, 6% of the exceeding cases were over 100% above with 2% of this being well over 558% above the same. Finally in 1981, 10.52% of the exceeding cases were over 100% above the approved amounts of loan. This behaviour of the Corporation can be attributed to the laxity of the control function in its management set up.

The contractors' view

A total of 126 questionnaires were administered to those contractors who obtained loans in the period 1978/81. The questionnaire was intended to obtain the indigenous contractors' views mainly on the financial assistance they obtain from the corporation. Also it was intended to give them a chance of making suggestions on how the corporation's financial assistance to them could be improved. Also included in the questionnaire is what these indigenous contractors think about the corporation's financial assistance as opposed to other financial institutions. Only 33 of them responded and from 9 of them

the questionaires were returned back to the sender (Researcher) because they could not be traced at the last known addresses. Those who responded to the questionaires gave various views on the issues contained in the questionaires (see the appendix1)as discussed below.

On the question of the major problem facing the indigenous contractors, 94% of those who responded indicated that finance is the major handicap. These contractors then went a head to make suggestions of alleviating this handicap. 73% of them suggested that the corporation should work up a lending policy to ensure that many if not all the indigenous contractors benefited from its finances. They also added that the corporation should negotiate and become a guarantor to the contractors banks for overdrafts such that when payments from projects are paid through the corporation, they are paid directly to their accounts. 61% of them also suggested that the government should establish a contractors' bank which would deal with their financial problems. Finally the contractors felt (55% of those who responded) that some of their financial problems would be solved by forming contractors' co-operative savings and credit societies.

The researcher also sought to know what the indigenous contractors thought about the corporation's financial assistance. 58% of those who responded indicated that the corporation's financial assistance is inadequate. They continued to add that the inadequacy is due to various reasons. One of these reasons is the large number of the loan applicants as opposed to the amount of funds available to the corporation. 67% of them indicated also that the corporation's financial assistance is not available when needed and also that the corporation does not establish the stage of the contract at which the financial assistance is required by the indigenous contractors. On the question of recoveries the contractors felt that the loan deductions are too heavy. The loan administration by the corporation was also looked

at. 55% of those who responded felt that the corporation's loan administration is not done perfectly. They pointed out that the corporation does not establish whether the indigenous contractors are ready to invest their own funds before it gives them loans. A situation like this would only encourage the indigenous contractors to default. It can therefore be argued that before any financial assistance is given to the indigenous contractors the corporation should make sure that the contractors themselves have their share. This could be deposited somewhere so as to be sure that it is actually available. Finally 64% of those who responded indicated that the corporation does not establish whether the value of the financial assistance needed by the contractor at certain stage is necessary and adequate. If this is the case then it is possible for these indigenous contractors to obtain excess finances which are likely to be used in less profitable manner.

Opinion was also sought on the Local Purchase Order System (LPO). 76% of those who responded felt that it was not a satisfactory system as it tended to make suppliers inflate the prices of their materials therefore denying them a chance of negotiating for discounts. They went on to add that at times the LPOs are not honoured at all. The contractors also felt that it is easier to obtain bonds from the corporation.

Another aspect of the corporation which was investigated by the researcher is the system through which all payments to the loaned indigenous contractors do pass through the corporation which in turn passes the same to the contractors after deducting its own portion. 67% of the contractors felt that the system is satisfactory with regards to the corporation because it is able to deduct its dues. However on the other side the contractors felt (70% of those who responded) that the system is not satisfactory because it tends to delay them in getting their monies. 67% of them also felt that the system gives the

corporation an opportunity to effect heavy recoveries. The indigenous contractors then made a number of suggestions intended to improve the corporation's financial assistance to them. 85% of them felt that the government should increase the revolving fund so that more funds could be made available to them. 58% of them felt that the corporation could develop a banking section in which the contractors and members of the public can deposit and invest their money. They also felt that the corporation could develop its own professional consultants section. They finally felt that the corporation should be both a manufacturer and supplier of construction materials. In comparing the corporation and other financial institutions 58% of the responding contractors felt that it is easier to obtain funds from the corporation than from these institutions. They gave various reasons for this indication. 39% of them indicated that it is easier because there was no security required and also that the corporation did not check to ascertain whether the need for the funds did actually exist. Finally the responding contractors gave their own reason as to why it is difficult to obtain a loan from a bank. The reasons included security requirements, the length of the approval processes, a lot of information required about the business, lack of competence on the part of the contractors in presenting their cases to the bank, the great number of loan applicants and also the reluctance of the bank managers in assisting the indigenous contractors because of their low opinion about them.

Safeguards against credit diversion

As pointed out in our discussion on loan administration in Chapter three once a loan application has been approved the contractor is free to apply for the same stating the amounts and for what purposes. Also pointed out is that loans are given in two forms namely cash and materials through local purchase order system. Through this L.P.O. system, the corporation officials go fishing around for a supplier who would be

ready to supply the required materials to the contractor and who is willing to be paid later by the Corporation. Alternatively, the contractor is asked to look for a supplier who could supply the materials he wants and agree with him on the prices before the corporation issues a Local Purchase Order.

There are various things which are likely to happen as a result of the above practice. Looking at the cash bit of it it is likely that the total cash issued to the indigenous contractor may not be put into the use mentioned. In the first case the corporation may not bother to establish whether the intended use is worth the amount requested for. However the most interesting bit of it is that this cash is paid in form of closed cheque in the name of the indigenous contractor. This cheque is paid through his bank account. This implies that whatever the indigenous contractor does with the cash after obtaining it nobody knows. There are various options available to the contractor. He may choose to use the same as originally intended if he is honest and committed to his work. He may also choose to use some of the cash in other businesses such as buying land, a vehicle or even in marrying another wife etc. This will of course be to the detriment of the project.

On the side of the local purchase order system there are also a number of things which are likely to happen and which are not in the interest of the Corporation or the project at hand. Where the officials of the Corporation fish around for the suppliers it is likely that they may not necessarily go to the cheapest. There are also all the chances of these officials colluding with the suppliers especially on the prices so that they get kick backs from these suppliers. While on the other side where the indigenous contractor looks for the suppliers himself other things are likely to happen. The indigenous contractor could be one who has a fraudulent mind and he imagines that he could

use part of the loan funds for his other purposes. He then colludes with the material suppliers who prepares invoices for the materials at high unit rates with the extra value going into his pockets. Alternatively he may be invoiced for the whole amount of materials while he takes only a fraction of them with the rest of the money going into his pockets. All these possibilities are done at a consideration to the suppliers. These are possible due to aquaintance networks in business and even at times it is possible to find that the Contractor is related to the suppliers or even he could be a sleeping partner of the supplying firm and all these indeed simplify collusion.

FOOTNOTES

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C H A P T E R F I V E

CONCLUSIONS AND RECOMMENDATIONS

The detailed analysis of data obtained from the National Construction Corporation and also the indigenous construction businessmen who have been lucky to obtain financial assistance from the Corporation has shown various features which have assisted us in making conclusions and various recommendations related to the question of financing by the National Construction Corporation. This has been presented in five sections as detailed below:-

Loan approval decisions

The first part of the data analysis looked at the general behaviour of the National Construction Corporation as a financier, more particularly as to how a decision is made concerning the amount of loan any given indigenous construction businessman should obtain from the Corporation. As established in chapter four after testing the significance of independent variables using F-statistic only the amount requested (R) by the indigenous construction businessmen and the value of the contract (C) to be financed were significant. What this implies is that when the National Construction Corporation is making a decision as to whether to finance a project of a certain indigenous construction businessman only the amount requested by the businessmen and the value of the contract were mainly considered with the amount of loan requested being the more important of the two. This behaviour of the National Construction Corporation is not acceptable to the researcher because it is likely to make the indigenous construction businessmen not to bother much about other variables which should play a more significant role in determining the amount of loan to be approved. This behaviour is indeed unlike what other financial institutions and commercial banks do. In these institutions as pointed out in chapter two security plays a very significant role in determining whether one should obtain a loan and how much

it should be.

Security

The question of security for the loans approved and issued by the National Construction Corporation is of vital importance as already pointed out. However the analysis of data showed that security was not significant in determining the amount of loan approved. This is a situation which has very serious effect on the issue of loan repayment and also indigenisation of the construction industry as a whole. It was established in chapter four that 20.31% of the loans issued had adequate securities pledged, 44.22% had inadequate securities and the remaining 35.47% had no securities pledged. The latter situation is where a loan is approved and issued without any security charged. This is because it is almost certain that loans issued against no security will not be repaid easily. The situation is slightly better where there is inadequate securities pledged. The fact that these two i.e non-security and inadequate security constitute 79.79% of all loans issued shows how the finances of the National Construction Corporation were exposed to dangers and hence the outstanding debt. To worsen the situation the National Construction Corporation never charged almost all securities offered by the indigenous construction businessmen. Therefore most of these securities were never securities as such. According to the details available the National Construction Corporation only went by the figures inserted in the loan application forms and there was no attempt made to call the securities and charge them. This is quite unhealthy situation since it erodes the small commitment which might have existed on the part of the indigenous construction businessmen thereby contributing even more to the non-repayment of credit advanced. This situation could be improved by the National Construction Corporation creating a section which would be in charge of securities as in other financial institutions. This section apart from ensuring that securities play a significant role in deciding on how much loan a particular indigenous construction businessman should get would be in charge of establishing the true value

of securities and finally charging them. It is only by doing this that the National Construction Corporation can hope to raise the commitment of the indigenous construction businessmen. By raising the commitment of these businessmen their performance both in terms of execution of work and loan repayment will tremendously improve. This would eventually lead to the improvemen of the financial status of the National Construction Corporation which would mean more assistance to more indigenous construction businessmen and indeed an increase in their participation in this important industry.

Financial Control

The issue of financial control is also of paramount importance. Without this control nothing much can be achieved. The data analysis revealed that 47.37% of the loans issued were within the approved amount, 52.63% of them exceeded the approved amounts. 18.18% of the exceeding cases were well over 100% above the approved amounts of loan and 6% of the same were well over 200% in excess of the same. These revealations show some negligence on the part of the National Construction Corporation on the issue of financial control. Once the Corporation has approved some loan for a particular project it is only proper for the same to ensure that the amount issued does not exceed the approved target. This is of vital importance otherwise the essence of approving loans would not exist. In addition if this kind of control is not done it is possible to find that the indigenous construction businessmen would obtain funds which they do not require for the project. This is likely to tempt these businessmen to put the "extra" funds to other unrelated businesses. Such finance would be very difficult to recover since the Contractor would not be having enough funds in the project to be able to repay the same. In addition this would most likely encourage the indigenous businessmen to abandon the National Construction Corporation and perhaps the construction business so as to avoid repayment of the loans. This would not be in line with the policy of developing an indigenous construction industry. To minimise this kind of problem the National

Construction Corporation could lay more emphasis on the control part of her financial management. This would perhaps be done by creating a financial controller section in the Corporation's establishement. This section would be to monitor the issue of loans and advise when approved loans have been completely exhausted.

Credit diversion

As pointed out in chapter four there are loopholes which the indigenous construction businessmen exploit in diverting credit given to them by the National Construction Corporation. Once the loans have been advanced to these indigenous contractors the Corporation must do everything possible to ensure that the same is not diverted to other businesses. This is mainly because if this safeguarding is not done the whole idea behind the creation of the National Construction Corporation would be easily sabotaged. Therefore it is recommended that the Corporation do institute some measures which would discourage some of the indigenous businessmen who might not be committed to their construction business from diverting the funds elsewhere. As stated earlier the credit given by the corporation is mainly in two forms i.e cash and materials. There are many options available to the Corporation which can be utilised to curb credit diversion. One such option is that the corporation could operate a joint account with the contractor for a particular project which it will finance. The two parties could be joint signitories of the account. Some detailed agreement would be reached on how this account could be run. For example for any payment to be made some authority from both parties must be given. All interim payments to be chanelled through such an account. Payments out of the account must be carefully scrutinised by both parties. For example if it is salaries for the workers, a payroll must be produced. This must be certified by the Corporation officer in charge of the project. The indigenous construction businessman can also be paid a monthly salary which must be agreed upon prior to the commencement of the project. As

for the suppliers of materials, direct payments to them would be desirable but the details of the cost of materials must be certified by the Corporation. This arrangement would continue up to the completion of the project when the account could be taken over by the indigenous construction businessman alone. This system would give the Corporation a chance to monitor the progress of the contractor more closely and indeed it is likely to play a bigger role in promoting the participation of the indigenous construction businessmen in the construction industry. However the system would very much depend on the faithfulness of the officers of the National Construction Corporation. There are shortcomings which are likely to emerge as a result of using this system such as suppliers by agreement with the indigenous contractor inflating the prices of materials thereby sharing the "extra price" with the contractor after the bank has paid. There is also the possibility of the Corporation employees who are charged with the responsibility of safeguarding against credit-diversion colluding with the contractors and thereby inflating the payrolls and other payments so that the bank could release more money for them to share with the contractors. All these possibilities would be minimised by having faithful Corporation employees. In addition the Corporation could have a mobile inspection team an equivalent of the inspection teams in other commercial banks like Barclays Kenya Limited which would have the responsibility of cross checking all the particulars especially those related to finance. This would considerably reduce the chances of credit diversion and would contribute significantly to the improvement of the present situation.

The National Construction Corporation could also create her own Material Supply Department. This department would stock all major building materials such as cement, roofing materials and general hardware. Also the Corporation should intensify the production of the pre-cast concrete units such as concrete blocks, kerbs, channels and many others.

With all these materials the Corporation would be able to meet the needs of the indigenous construction businessmen and hence minimise any chances of diverting credit.

Indigenous Construction Businessmen View

As indicated in the data analysis the indigenous construction businessmen consider the non-availability of finance as their main problem. They went on to indicate that in trying to solve this problem the National Construction Corporation has not performed well enough more so in the area of financial management. They made various suggestions aimed at improving the financial assistance given by the Corporation i.e increasing revolving fund, establishing banking section within the Corporation and forming credit and savings Co-operatives. The question of financial management knowledge remains crucial if these businessmen have to succeed. Efforts must therefore be made to ensure that these businessmen are well equiped with this knowledge. It is only after this is done that one would hope that any financial assistance given would be properly utilised.

Since there is no formal way of exchanging views between the indigenous construction businessmen and the Corporation except perhaps through very rare seminars, it is important that some method be devised to eliminate this vacuum. One possible solution is for the Corporation to have some organ through which this can be done. This organ can take the form of a periodical publication which could be used to the best advantage of both the Corporation and the indigenous construction businessmen. Through this organ of which the indigenous construction businessmen should be able to obtain a copy monthly or quarterly as the case may be the Corporation could be able to pass on information concerning important issues including financial management. This would assist in educating the indigenous construction businessmen on issues which are of vital importance to their progress. The organ can also be

profitably used by the indigenous construction businessmen by letting their problems and views known to the Corporation and the public at large. This kind of awareness would be quite useful since it would encourage various suggestions and solutions from the Corporation and the public. This would definately contribute immersely to the development of both the indigneous construction businessmen and the National Construction Corporation resulting in more indeginisation of the construction industry.

Areas of Further Research

This study leaves room for further research work. One area where this is possible is in developing further the loan predictor model. More research work can be carried out to find out how more independent variables can be added to the model in an effort to reduce the unexplained variation while at the same time keeping within good and acceptable financial management as practised by the commercial banks and other financial institutions. Some of these variables include the following; cash flow calculations, plant/ tools, contract period versus contract sum, contract period versus loan advanced and intuitive factors.

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APPENDIX 1

P.O Box 67617
NAIROBI.

5th May, 1987

Dear Sir/Madam

A STUDY OF THE NATIONAL CONSTRUCTION CORPORATION FINANCIAL ASSISTANCE TO INDIGENOUS CONTRACTORS

Soon after independence Kenya Government realised the low level of participation of the indigenous contractors in the construction industry and consequently created the National Construction Corporation to promote, assist and develop the construction industry.

One of the functions of the Corporation is to authorise the making of a loan out of its funds to any person engaged in the construction industry upon such terms and conditions as to security, interest and repayment or otherwise and in such a manner as the Board of NCC may deem fit.

I have, through the University of Nairobi, embarked on a study on the financial assistance given by the Corporation to indigenous contractors with a view of coming up with suggestions of improving it.

You have/your firm has been chosen as a resource area for purposes of this study. Please complete the attached questionaire very carefully and return it to the researcher through the above address for further action.

A report will finally be prepared on the research but no mention of names of any particular business as this will be treated confidentially.

Yours faithfully

Suleiman Ondieki Magare
B.A. (Bldg.Econ.) Hons, M.A.A.K. (QS)
The Researcher.

INTRODUCTION

Following hereunder find some questions together with some answers. Please indicate what you consider to be appropriate answers. Please note that one question may have more than one answer.

1. (a) Do you think that indigenous contractors are mostly handicapped due to lack of finance?

Yes ☐ No ☐

(b) If yes, what do you think could be the remedy to such limitation?

(i) NCC Work-up a policy of lending to contractors to enable the scarce resource reach every contractor in need

Yes ☐ No ☐

(ii) NCC select and deal with only a few contractors at a time, who could tie up with the scarce resources.

Yes ☐ No ☐

(iii) Because of scarcity of resources, NCC negotiate and become a guarantor to the contractors banks for overdrafts such that when payments from projects are paid through NCC they be paid to the contractors accounts directly.

Yes ☐ No ☐

(iv) Initiate a contractors' bank which will mostly deal with contractors financial problems.

Yes ☐ No ☐

(v) Form Contractor Co-operative Savings and Credit Society.

Yes ☐ No ☐

(vi) If any other, please specify _____

_____

2. You have known NCC for quite sometime now. What in general terms would you say about its financial assistance to indigenous contractors?

(i) Not adequate Yes ☐ No ☐

(ii) Not available when one requires it Yes ☐ No ☐

(iii) Is satisfactory Yes ☐ No ☐

(iv) Has heavy recoveries Yes ☐ No ☐

3. (a) NCC normally gives financial assistance in two forms namely cash and Local Purchase Order (LPO) System for materials. What would you say about (LPO) System?

(i) Is satisfactory Yes ☐ No ☐

(ii) The LPO System is not satisfactory as it tends to make suppliers to inflate the prices of their materials.

Yes ☐ No ☐

(iii) Is unsatisfactory because sometimes the LPO System is not honoured.

Yes ☐ No ☐

(iv) Is unsatisfactory as it denies the contractor the opportunity to negotiate for discounts.

Yes ☐ No ☐

(v) If other, please specify ----------

(b) What other suggestions would you like to make about supply of building materials?

(i) NCC develop some materials supply Department which should be able to stock most of the major building materials and in turn sell them to the contractors.

Yes ☐ No ☐

(ii) If any other, please specify ----------

---

4. What would you say to the suggestion that the financial assistance by NCC to the indigenous contractors is not adequate?

(i) NCC does not have enough funds to accommodate the number of contractors.

Yes ☐ No ☐

(ii) NCC does not do proper management and recovery of loans from the contractors.

Yes ☐ No ☐

(iii) NCC has no data and guideline as to the priority to financial assistance.

Yes ☐ No ☐

(iv) NCC does not check whether the contractor to be assisted is also ready to invest his own funds to the projects before giving assistance. This leads to the contractor not getting more committed to the project and often could lead to diversion of funds.

Yes ☐ No ☐

(v) NCC does not establish at what time or stage of the contract the contractor needs financial assistance.

Yes ☐ No ☐

(vi) NCC does not establish whether the value of financial assistance needed by the contractor at certain stage is necessary and adequate.

Yes ☐ No ☐

(vii) If any other, please specify ----------

---

5. You must have at one time looked for financial assistance from both NCC and other financial institutions.

(a) Is NCC financial assistance easier or harder to get?

Yes ☐ No ☐

(b) If harder to get, what would you say are the major reasons for this?

(i) It takes too long Yes ☐ No ☐

(ii) It is given in bits and sometimes very late for the works.

Yes ☐ No ☐

(iii) It is sometimes given in LPO form which bounces back when not honoured.

Yes ☐ No ☐

(iv) There are many applicants Yes ☐ No ☐

(v) If any other, please specify ----------

(c) If easier to get, what would you say are the major reasons for this?

(i) Approval takes a short time Yes ☐ No ☐

(ii) No security required for it. Yes ☐ No ☐

(iii) Interest rate is quite small compared to financial assistance from elsewhere.

Yes ☐ No ☐

(iv) The Corporation does not check to ascertain whether one actually wants the money or not.

Yes ☐ No ☐

(v) If any other, please specify ----------

(d) Why do you think it is difficult to get a bank loan?

(i) Security is required Yes ☐ No ☐

(ii) It takes long to approve Yes ☐ No ☐

(iii) A lot of information is required as to what use the loan would be put into.

Yes ☐ No ☐

(iv) Competence in presenting the need for finance to the bank is lacking.

Yes ☐ No ☐

(v) Managers are reluctant in assisting indigenous contractors because of their low opinion about them

Yes ☐ No ☐

(vi) Because there are many other businessmen competing for the same loans.

Yes ☐ No ☐

(vii) If any other, please specify ----------

---

6. What do you suggest to be done to improve NCC's financial assistance to indigenous contractors?

(i) Government to increase revolving fund to NCC.

Yes ☐ No ☐

(ii) NCC to have a banking section where contractors and other members of the public and invest their money

Yes ☐ No ☐

(iii) NCC to form a subsidiary construction company

Yes ☐ No ☐

(iv) NCC to have a professional consultants section

Yes ☐ No ☐

(v) NCC to be suppliers of construction materials.

Yes ☐ No ☐

(vi) NCC to be manufacturers of construction materials

Yes ☐ No ☐

(vii) If any other, please specify ----------

---

7. One of the functions of the corporation is that it issues bonds to indigenous contractors who are registered with it. What do you have to say about these bonds?

(i) Complicated to get Yes ☐ No ☐

(ii) Easy to get Yes ☐ No ☐

(iii) Has higher charges and thus expensive Yes ☐ No ☐

(iv) Is satisfactory Yes ☐ No ☐

(v) It takes long to get Yes ☐ No ☐

(vi) If any other, please specify ----------

---

8. Once NCC has given some loan to a contractor all payments due to this contractor are passed on to NCC who in turn pays the contractor after deducting its dues. What would you say about this system?

(i) Is satisfactory as NCC is also to deduct monies for loans recoveries.

Yes ☐ No ☐

(ii) The system tends to delay contractors in getting their monies in time

Yes ☐ No ☐

(iii) Not satisfactory as NCC gets the opportunity to effect heavy recoveries

Yes ☐ No ☐

(iv) If any other, please specify ----------

---

9. (a) What other sources of finance do you have?

If any please specify ----------

(b) What would you say about obtaining financial assistance from these sources?

(i) Cheaper than NCC Yes ☐ No ☐

(ii) Easier to obtain Yes ☐ No ☐

(iii) If any other, please specify ----------

---

10. NCC also provides construction plant and equipment to indigenous contractors. What would you say about this assistance?

(i) Not adequate Yes ☐ No ☐

(ii) Not available when needed Yes ☐ No ☐

(iii) Complicated to get Yes ☐ No ☐

(iv) Has higher charges and thus expensive

Yes ☐ No ☐

(v) Satisfactory Yes ☐ No ☐

(vi) NCC does not possess some plant and equipment needed to execute some type of works

Yes ☐ No ☐

(vii) Most of the plant and equipment are outdated and they breakdown quite often

Yes ☐ NO ☐

(viii) If any other, please specify ----------

---

11. Finally, you are aware that the task of assisting, promoting and developing the indigenous contractors entrusted to NCC is big and noble. You are also aware that any success in this task will have some good effect on the overall economy of this nation. This will affect every Kenyan you included. What other suggestion would you make to assist NCC achieve its task?

Suleiman Ondieki Magare
B.A (Bldg. Econ.) Hons., M.A.A.K. (QS)
The Researcher.

APPENDIX 2:

(To be completed in duplicate)

N A T I O N A L C O N S T R U C T I O N C O R P O R A T I O N

TELEPHONE 556464 or 554555 P.O BOX 30201, NAIROBI.

APPLICATION FOR LOAN

1. NAME OF APPLICANT (BLOCK LETTERS) .....

   Postal Address: .....

   Telephone No. .....

   Physical Address (in full) .....

   (i.e Plot No. Road Market etc) .....

2. DESCRIPTION AND LOCATION OF CONTRACT FOR WHICH LOAN IS APPLIED

   CONTRACT NO: .....

   AWARDED BY .....

   DESCRIPTION OF CONTRACT .....

   .....

   .....

   LOCATION: .....

   POSSESSION OF SITE (DATE) .....

   COMPLETION TIME (WEEKS/MONTHS) .....

   VALUE OF CONTRACT:- .....

   (a) Builders works .....

   (b) Plumbing .....

   (c) Electrical .....

   (d) Others (specify) .....

   Total value .....

   What part (s) of the contract is/are going to be executed by you?..... .....

.../2

3. DESCRIPTION OF YOUR BUSINESS:

(a) Sole proprietorship Yes/No

Name of Sole Proprietorship .....

.....

Registration No. and date .....

(b) Partnership Yes/No

Names of partners .....

.....

.....

Registration No. and date .....

.....

(c) Limited liability Company Yes/No

Registration No. and date .....

.....

Names of Directors .....

.....

.....

Note: A copy of Memorandum and Articles of Association must accompany this application.

4. PURPOSE OF THE LOAN:

(a) Amount required: Cash Shs. .....

L.P.O's Shs. .....

Total Shs. .....

(b) PURPOSES:

Materials .....

Wages .....

Sub-contractors .....

Transport .....

(c) Other (specify) .....

(d) Do you intend to sub-contract to any Agencies Yes/No.

If yes, give name and address of companies appointed sub-contractors.

.....

.....

(e) How much of your money do you intend to invest in this contract? .....

5. SECURITY: (Please give wholly owned securities which are not mortgaged) What do you offer as security for the loan you are borrowing?

(a) LAND

Location: .....

Acreage: .....

Estimated value Shs. .....

Specify any development on the land and value of such developments.

.....

.....

Who holds the title deeds now? .....

.....

(b) BUILDINGS:-

Size of plot .....

Value of plot Shs. .....

Location of plot and No. .....

Market .....

Cost of building Shs. .....

When Buildings were erected (date) .....

Estimate present value of Building Shs. .....

Who holds the title deeds now? .....

.....

(c) VEHICLES:

Registration Nos (year of Registration) .....

Are the vehicles comprehensively insured? Yes/No

If yes, state:-

Name of Company .....

Value insured Shs. .....

Date of Policy expiry .....

*Only comprehensively insured vehicles will be considered as security.

(d) MACHINERY & EQUIPMENT:

Name & Make .....

.....

Serial No. .....

Price when new Shs. .....

Date Purchased .....

Estimated present value Shs. .....

Is it insured. Yes/No.....

If yes state:-

Name of Insurance Company .....

Value insured .....

Date of Policy expiry .....

(e) ANY OTHER SECURITY:-

Please give all particulars .....

.....

.....

6. BANKING

Do you have a bank account Yes/No

If yes, please state:

(a) Name of Bank .....

(b) Type of account:-

Savings .....

Current .....

7. OTHER BORROWINGS:

1. Have you ever applied for a loan from any other corporation? Yes/No.

2. Was the loan refused or granted Yes/No

If not granted, do you know the reasons?

.....

.....

If granted please state:-

Amount borrowed: .....

Amount outstanding: .....

3. Do you have Bank Overdraft facilities? Yes/No.....

If yes please state:-

(a) Name of Bank .....

(b) Amount of Overdraft authorised ,,.....

(c) Security offered to the Bank .....

(d) Amount presently overdrawn Shs. .....

4. State amount currently borrowed from any other Agency

.....

Amount borrowed Shs. .....

Purpose for which borrowed .....

.....

Amount outstanding Shs. .....

Security offered .....

8. DECLARATION:

I confirm the above answers are correct and truthful to the best of my knowledge. I further confirm and agree that any wilful misrepresentation on my part may render this application

Unconsiderable or cause concellation of loan deceitfully obtained

DATE

_____

COMPANY STAMP

_____

SIGNATURE OF APPLICANT

_____

NAME OF SIGNATORY _____

POSITION IN THE
COMPANY _____

(proprietor, partner or director)

APPENDIX 3: RAW DATA

	L_a	S	C	R	T	D
1	90	155	175	100	10	4
2	150	147	405	150	40	3
3	80	99	226	80	10	1
4	11	60	29	11	3	4
5	908	1032	908	1130	0	1
6	250	175	654	350	50	4
7	200	150	476	250	40	3
8	150	600	468	150	0	4
9	100	200	273	100	5	4
10	200	260	728	200	10	3
11	100	105	251	100	0	4
12	90	260	359	90	8	3
13	100	440	246	140	0	3
14	100	105	250	100	10	4
15	70	150	299	70	0	3
16	50	88	244	50	25	3
17	40	54	99	50	3	4
18	150	150	370	150	20	4

	L_a	S	C	R	T	D
19	130	175	329	130	50	4
20	25	54	61	25	5	4
21	200	99	343	200	40	3
22	200	160	503	200	80	3
23	150	300	998	300	0	1
24	30	625	67	30	0	4
25	600	1425	2230	900	0	3
26	200	200	509	200	0	3
27	100	90	298	150	0	3
28	300	250	800	320	0	3
29	50	54	126	60	0	4
30	70	260	218	70	0	3
31	60	60	304	70	10	4
32	60	66	198	80	5	4
33	150	150	434	250	45	4
34	180	500	590	180	0	3
35	50	350	143	100	0	3
36	150	165	561	200	0	4
37	400	125	960	450	50	1

	L_a	S	C	R	T	D
38	150	150	239	200	5	4
39	50	50	569	50	8	4
40	150	150	566	200	10	4
41	350	250	946	350	75	1
42	100	75	280	140	0	4
43	100	325	590	200	10	3
44	400	800	3031	400	60	3
45	60	66	198	80	5	4
46	800	260	3332	1400	0	2
47	150	150	498	200	10	4
48	150	150	239	200	5	4
49	200	183	903	400	10	1
50	300	350	1100	400	0	3

APPENDIX 4. FINAL MULTIPLE REGRESSION MODEL VALUE

(PRINT - OUT A) - MULTIPLICATIVE

VARIABLES IN THE EQUATION

VARIABLE	B	BETA	STD ERROR B	F
RLOG	0.77225	0.80046	0.07300	111.908
CLOG	0 17281	0.19545	0.05782	8.931
DLOG	-0.01323	-0 00803	0.05452	0.059
TLOG	-0.00578	-0.00635	0.03947	0.021
SLOG	0.00529	0.00547	0.04455	0.014
(CONSTANT)	-0.02200		0.24758	0.008

VARIABLES NOT IN THE EQUATION

VARIABLE	BETA IN	PARTIAL	TOLERANCE	F

MAXIMUM STEP REACHED

FILE MODEL (CREATION DATE = 14/05/86)

MULTIPLE REGRESSION

VARIABLE LIST 1
REGRESSION LIST 1

DEPENDENT VARIABLE.. LOG OF LA

SUMMARY TABLE

VARIABLE		MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R	B	BETA
RLOG	LOG OF R	0.97503	0.95068	0.95068	0.97503	0.77225	0.80046
CLOG	LOG OF C	0.97927	0.95898	0.00830	0.90364	0.17281	0.19545
DLOG	LOG OF D	0.97930	0.95903	0.00005	-0.28298	-0.01323	-0.00803
TLOG	LOG OF T	0.97931	0.95905	0.00002	0.67223	-0.00578	-0.00635
SLOG	LOG OF S	0.97932	0.95906	0.00001	0.72563	0.00529	-0.00547
(CONSTANT)						-0.02200	

MODEL ESTMATION 14/05/86 PAGE 11

FILE MODEL (CREATION DATE - 14/05/86)

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES SPSS - VERSION 5.01 14/05/86 PAGE

THIS VERSION IS DESIGNED TO SAVE PAPER. A NEW CONTROL CARD, 'PAGING STANDARD', IS AVAILABLE IF REQUIRED

RUN NAME	MODEL ESTMATION
VARIABLE LIST	LA S C R T D
FILE NAME	MODEL
INPUT MEDIUM	CARD
/ OF CASES	50
INPUT FORMAT	FIXED (2X,4(1X,F4.0),F3.0,1X,F1.0)

ACCORDING TO YOUR INPUT FORMAT, VARIABLES ARE TO BE READ AS FOLLWS:-

VARIABLE	FORMAT	RECORD	COLUMNS
LA	F 4.0	1	4- 7
S	F 4.0	1	9- 12
C	F 4.0	1	14- 17
R	F 4.0	1	19- 22
T	F 3.0	1	23- 25
D	F 1.0	1	27- 27

THE INPUT FORMAT PROVIDES FOR 6 VARIABLES. 6 WILL RE READ
IT PROVIDES FOR 1 RECORDS ('CARDS') PEP CASE. A MAXIMUM OF 27 'COLUMNS' ARE USED ON A RECORD.

```
IF              (I EQ 0) T = 0.0548*C
COMPUTE         LALOG    = LG10  (LA)
COMPUTE         SLOG     = LG10  (S)
COMPUTE         CLOG     = LG10  (C)
COMPUTE         RLOG     = LG10  (R)
IF              (I NE 0)ILOG = LG10(T)
IF              (D NE 0)DLOG = LG10(D)
VARIABLES       LALOG LOG OF LA /
                SLOG LOG OF S /
                CLOG LOG OF C /
                RLOG LOG OF R /
                TLOG LOG OF T /
                DLOG LOG OF D /
REGRESSION      VARIABLES = LA TO D/
                REGRESSION = LA WITH S TO D (1)   RESID = 0 /
STATISTICS      ALL
READ INPUT DATA
```

APPENDIX 6. FINAL MULTIPLE REGRESSION MODEL VALUES.

(PRINT-OUT A) - ADDITTIVE

MULTIPLE R	0.98065	ANALYSIS OF VARIANCE	DF	SUM OF SQUARES	MEAN SQUARE	F
R SQUARE	0.96167	REGRESSION	5.	1533468.57483	306693.71497	220.79782
STANDARD ERROR	37.26963	RESIDUAL	44.	61117.10514	1389.02512	

VARIABLES IN THE EQUATION

VARIABLE	D	DETA	STD ERROR B	F
R	0.74669	0.90696	0.04569	267.051
C	0.02511	0.09764	0.01051	5.706
T	-0.42288	-0.07447	0.22593	3.503
S	0.02651	0.05123	0.02906	0.832
D	-4.39058	-0.02782	5.15913	0.724
(CONSTANT)	22.11628		23.01706	0.923

VARIABLES NOT IN THE EQUATION

VARIABLE	BETA IN	PARTIAL	TOLERANCE

MAXIMUM STEP REACHED

FILE MODEL (CREATION DATE = 14/05/86)

MULTIPLE REGRESSION

VARIABLE LIST 1
REGRESSION LIST 1

DEPENDENT VARIABLE.. LA

SUMMARY TABLE

VARIABLE	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R	B	BETA
R	0.97560	0.95179	0.95179	0.97560	0.74669	0.90696
C	0.97879	0.95802	0.00623	0.69224	0.02511	0.09764
T	0.97989	0.96018	0.00216	0.58596	-0.42288	-0.07447
S	0.98033	0.96104	0.00086	0.82812	0.02651	0.05123
D	0.98065	0.96167	0.00063	-0.37616	-4.39058	-0.02782
(CONSTANT)					22.11628	

(CREATION DATE = 06/06/86

MULTIPLE REGRESSION

BLE.. LA

SUMMARY TABLE

MULTIPLE R	R SQUARE
0.82812	0.68578
0.84844	0.71985
o.85230	0.72641
0.85384	0.72905

ENTERED ON STEP NUMBER 4.. D

MULTIPLE R 0.85384
R. SQUARE 0.72905
STANDARD ERROR 97.98600

ANALYSIS OF VARIANCE
REGRESSION
RESIDUAL

FINAL MULTIPLE REGRESSION MODEL VALUES

(PRINT-OUT B)

VARIABLE LIST 1
REGRESSION LIST 1

RSQ CHANGE	SIMPLE R	B	BETA
0.68578	0.82812	0.30648	0.59234
0.03407	0.69224	0.06146	0.23893
0.00656	0.58596	+0.50165	0.08834
0.00264	-0.37616	-0.0896359	-0.05679
		52.88988	

DF	SUM OF SQUARES	MEAN SQUARE	F
4.	1162528.39281	290632.09820	30.27016
65.	432057.28717	9601.27305	

VARIABLES NOT IN THE EQUATION

06/06/86

APPENDIX 8

BASIC PROGRAMME

```
 10  PAG=0
 20  L=1
 30  CNT=1
 40  CLS
 41  DIM PG(61,10)
 60  FOR T=10,000
 70  FOR C=50000! TO 2000000! STEP 500000!
 90  FOR S=10000 TO 500000! STEP 50000!
100  D=.05*C
110  LA=52.88988+.30648*S+.06146*C+.50165* T-0.08963589 *D
120  REM IF LA    R THEN LA = R
130  IF LA  .25*C THEN LA=.25*C
140  IF LA   S THEN LA=S
141  IF L   =60 THEN PG(L;1)=LA: PG(L,2) =S: PG(L,3)=C: PG(L,4)=R: PG(L,5)=D
142  IF L   60 THEN PG(L-60,6)=LA: PG(L-60,7)=S: PG(L-60,8)=C PG(L-60,9)=R: PG(L-60,10=D
160  CNT=1
170  L=L+1
180  IF L  120 THEN PAG = PAG+1 : L=1: GOSUB 300
190  NEXT S
200  REM NEXT R
210  NEXT C
230  END
300  REM PRINT PAGE
301  LPRINT : LPRINT: LPRINT "                                                    PAGE ";PAG
302  LPRINT "  LA  ";"  S  ";"  C ";"  R ";"   D";
302  LPRINT "      LA  ";"    S ";"   C  ";"    R";" D"
304  LPRINT
310  FOR I=1 TO 60
320  FOR J=1 TO 10
330  LPRINT USING "";PG(I,J);
340  NEXT J
345  LPRINT
350  NEXT I
361  LPRINT : LPRINT
370  RETURN
```

APPENDIX 9: DURBIN-WATSON STATISTIC

(PRINT-OUT A)

DURBIN-WATSON TEST OF RESIDUAL DEFFERENCES COMPARED BY CASE ORDER (SEQNUM).

VARIABLE LIST 1, REGRESSION LIST 1. DURBIN-WATSON TEST 2.15264

FILE MODEL (CREATION DATE = 14/05/86)

* * * * *PLOT: STANDARDIZED RESIDUAL (DOWN) -- PREDICTED STANDARDIZED DEPENDENT VARIABLE (ACROSS) * * * * * * * *

DEPENDENT VARIABLE: LA VARIABLE LIST 1

REGRESSION LIST 1

AAPENDIX 10: DURBIN-WATSON STATISTIC

(PRINT-OUT B)

DURBIN-WATSON TEST OF RESIDUAL DIFFERENCES COMPARED BY CASE ORDER (SEQNUM).

VARIABLE LIST 1, REGRESSION LIST 1. DURBIN-WATSON TEST 1.86987

FILE MODEL 1 (CREATION DATE = 06/06/86)

* * * * * PLOT: STANDARDIZED RESIDUAL (DOWN) -- PREDICTED STANDARDIZED DEPENDENT

VARIABLE (ACROSS) * * * * * * * * * * * * *

DEPENDENT VARIABLE: LA VARIABLE LIST 1

REGRESSION LIST 1