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Contractor development in Nigeria: perceptions of contractors and professionals

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Foreign construction firms dominate the major projects in most developing countries as a result of deficiencies in indigenous construction capacity. A plethora of measures have been formulated and implemented to promote development of domestic contractors in these countries, but most attempts have achieved little success. This paper, arising from a larger study on management training needs of contractors in Nigeria, describes findings on constraints on indigenous contractors' performance in the Nigerian industry. Contractor-development programmes perceived as relevant and appropriate to improve their performance in the industry are also reported. The views of indigenous contractors and professionals were compared. There was a strong agreement between both groups on the major constraints in the industry and on the measures perceived as most important for the development of Nigerian contractors. Problems emanating from the business environment were generally perceived by both groups as the most severe constraints. Contractor-development programmes, perceived as very important by both groups, are also the measures required to ameliorate the most important constraints identified: obtaining interim payments, uncertainties in supplies and prices of materials, inadequate access to capital, plant and equipment. Contractor development is inevitably an integral part of a construction industry development programme, given the nature of constraints and development needs emphasized by both groups. The focus therefore should be on establishing a comprehensive programme for the development of the construction industry. More attention should be placed on contractor training to promote management development of trained construction professionals, now emerging as the new crop of construction entrepreneurs.

Keywords: Contractor development, developing countries, Nigeria, SMEs, industry development

Introduction

Deficiencies in indigenous construction capacity in developing countries have resulted in an unwholesome dependence on imported inputs: construction materials, machinery, and the skilled manpower required to implement much-needed infrastructure for economic growth and to improve living conditions. Foreign construction firms dominate the construction industry in most developing countries, executing – almost exclusively – major construction works. The literature is replete with details of deficiencies in these countries (e.g. Ofori, 1980; Edmonds and Miles, 1984; Andrews, 1985; Wells, 1986; Kirmani, 1988). Various international development agencies, such as the World Bank (1984), the United Nations Centre for Human Settlement (UNCHS) (1981, 1984a, 1984b), and the International Labour Office (ILO) (1987), have shown considerable interest and have made significant contributions towards the development of domestic contractors in developing countries.

The intractable foreign debt and balance-of-payment problems of most developing countries have drastically reduced their import capacity, economic growth and infrastructure development programmes. Wells (1985) rightly warned of the need for developing economies to concentrate upon the development of an indigenous construction capacity, as reduced foreign-exchange

earnings and international recession would limit the production of the capital goods required to maintain economic growth in these countries. A decline in oil revenue, and foreign debt problems, forced the Federal Republic of Nigeria to put in place a structural adjustment programme (SAP) to revamp the economy. SAP has enhanced local sourcing of inputs, mainly because of a lack of foreign exchange for imports, and the depreciation of the local currency (Ojo, 1989). SAP should also precipitate a more concerted effort towards the development of the indigenous construction industry, to curtail dependence on imported capacity in the provision of much-needed infrastructure, required to improve living conditions. The primary concern should be establishing appropriate development programmes to ensure sustainable development of domestic contractors, and to promote their effective participation in the local construction industry, thus reducing dependence on imports. This paper identifies constraints on indigenous contractors in Nigeria, and the most appropriate supports required to promote their development and effective participation in the local industry.

Contractor development programmes

A plethora of measures have been formulated and implemented to promote domestic contractor development in developing countries. The ILO (1987) classified under three headings measures that are proposed for small contractor development in developing countries:

1. policies to improve small contractors' access to work;
2. policies to create a more favourable business environment;
3. policies and programmes for training and technical advice.

Policies to improve small contractors' access to work include: planning and formulating public sector demand to minimize abrupt fluctuations in flow of work; price preferences to override the competitive advantage of larger foreign firms in submitting lower bids; and more efficient pre-qualification to promote competence and discipline. Other initiatives include: encouraging larger firms to subcontract more work; providing incentives for small firms to merge to form larger, more viable firms; splitting a single large contract into smaller segments which small firms have the capacity to handle; and reducing the direct labour force. Other measures are: improved tendering procedures, so as to increase tendering opportunities; standardization of design to facilitate skill development, and hence improve the ability to compete; and simplification of tender documents to ease process and technical details.

Policies recommended by ILO (1987) to improve contractors' business environment include various measures to improve their access to finance, such as the provision of mobilization advances, the reduction of retention money, prompt payment for work done, and other measures such as provision of loans or loan guarantee schemes to reduce demand for working capital. Other essential measures include improving small contractors' access to materials, plant and equipment.

It has been observed that the ailments of the construction industry in developing countries are only symptoms of the underlying problems of weak enterprise management (World Bank, 1984). Although training is not prescribed as the panacea to all problems facing contractors in developing countries, it is often chief among programmes recommended for their development in these countries (ILO, 1987). It is also regarded as the single major solution to their difficulties (Hernes, 1988). Very little success has been recorded in most contractor-training programmes (Edmonds and Miles, 1984), though a few successful programmes have been reported (Miles and Neale, 1991).

Ofori (1991) noted that initiating a contractor-development programme is becoming almost synonymous with establishing a contractor-support agency. The package of support measures available varies from agency to agency, and usually includes those aforementioned. Most of these agencies have made little impact, or have had only modest success (Edmonds and Miles, 1984; Andrews, 1985; Ofori, 1991). They are in most instances government-sponsored institutions with a bureaucratic structure that frustrates their efficiency and effectiveness. Small contractors are also encouraged and supported to mobilize themselves into a formidable association for self-help activities. Andrews (1990) and Ofori (1991) recommended that a contractors' association should be more actively involved in the formulation and implementation of contractor development programmes. The ILO (1987) advocated that a contractors' association could take on some of the functions and services of a contractor development agency; Edmonds and Miles (1984) and Ofori (1991) further recommended that it should gradually take over the running of the agency.

There is, however, little evidence that small contractors are actively involved in the formulation of programmes intended for their benefit in most developing countries. This has probably contributed to the failures of previous programmes, in particular lack of motivation for training (Edmonds and Miles, 1984).

In addition, most attempts have achieved little because they were based on programmes that worked in the industrialized countries; they also concentrated on the symptoms and not the root causes (Ofori, 1991). Studies have confirmed that the problems of small contractors in developing countries cannot be generalized at the same level of severity, though similar problems exist in most countries (Karming *et al.*, l994). This underlines the importance of intensive need analysis to diagnose the specific needs of the particular industry rather than prescriptive contractor development programmes. However, little information is available on how to undertake an effective need analysis to establish a successful contractor-development scheme.

Contractor development in Nigeria

Indigenous Nigerian construction firms are predominantly small and medium-sized; their participation in major construction works is very marginal. The larger indigenous construction firms are small enterprises relative to most indigenized foreign firms that dominate the industry. It was estimated that indigenous construction firms undertake only 5% of the purely civil engineering construction and 25% of the building works, while indigenized foreign firms undertake not less than 85% of the civil and building construction combined (FRN, 1991).The indigenized foreign firms are former foreign firms that now have between 40 and 60% Nigerian equity ownership as a result of government indigenization policies. However, expatriates still dominate both the management and the technical functions of most of these firms.

Some efforts have been made to promote indigenous contractors and increase their participation in the industry. They were primarily measures to increase access to work and provision of financial support. However, these programmes have not been successful (Adams, 1993). They were often abused, and invariably failed in their objectives. Concerted effort to ensure an integrated development of the industry was generally lacking. In addition, contractor development was attempted in isolation, in the absence of a more comprehensive programme for the development of the industry, as other measures proposed for integrated development of domestic construction capacity (FRN, 1981) were not implemented, owing to lack of political will. The National Construction Policy (FRN, 1991) is the first real indication, in the author's opinion, of genuine government interest in the development of domestic construction capacity. The policy effectively addressed the major difficulties faced in the industry: lack of construction materials, manpower, equipment and finance. However, the policy failed to address specifically the issue of contractor development. Policy strategies recommended are not explicit or concerted enough to ensure sustainable development of indigenous contractors.

Research objectives

The objectives of this study are to identify the constraints on indigenous contractors in Nigeria, and to determine the most appropriate supports to promote their development and effective participation in the local industry. It is premised that the take-up and subsequent success of any contractor-development initiative depend on contractors, the intended beneficiaries, perceiving proposed programmes as relevant and appropriate to their needs. The perceptions of contractors (owner-managers of indigenous construction firms) on the relative importance of the constraints and contractor-development programmes are identified. The views of experts in the industry – that is, construction professionals (architects, engineers, quantity surveyors and construction owners' representatives) – on these issues are also surveyed. Both groups are surveyed, to assess views across the industry. Hernes (1988) opined that the latter group would be more objective in judging contractors' performance and needs. The information obtained from both groups is integrated in order to identify the most appropriate contractor-development needs in the Nigerian industry.

Need analysis

McKillip (1987) defines needs as value judgements that a target group has problems that can be solved. A problem is defined as a difference or discrepancy between what is (or will be) actually happening and what should (or might) be happening (Kubr and Prokopenko, 1991). It is also an inadequate outcome, or an outcome that violates expectations (McKillip, 1987). Thus problems are identified or diagnosed by comparison of what is with what ought to be. Needs are solutions to address the problems identified.

The problem of bias in need analysis is recognized, however (Rogers, 1992). This seems inevitable. The range of stakeholders involved in assessing intervention needs includes professionals, policymakers, and the potential recipients of services. They may have potentially differing perspectives in the definition of problems, and hence varying perspectives on needs (Rossi and Freeman, 1993). What is seen as a problem by some persons or groups may not be perceived as such by others.

Judgements of needs could be based on the target population's expectations (felt need) or utilization of services (expressed need), experts' opinion (normative need), or expectation based on the performance of a model group (comparative need) (McKillip, 1987). However, judgements of needs can never be absolute. They are value loaded and relative: they vary from context to context, and change over time (Rogers, 1992). There is therefore a real danger of misjudgement. Thus needs based on experts' expectations can lead to elitist programmes that the target population do not want. Studies have repeatedly shown that small business owner-managers display considerable resentment to pre-packaged, 'this is what is best for you' development schemes (Curran, 1993). On the other hand, felt or expressed needs of the target population could be self-serving and unrealistic. Felt needs depend on the target group's level of awareness of their deficiencies, which can arise only by comparing themselves with a known situation. It is always difficult to distinguish between felt needs and wants, as they tend to overlap. Rogers (1992) argued that a want is only one of many ways of meeting a need, and it could be self-serving. Expressed needs are indicated by the target group's use of services that are currently available (McKillip, 1987). Utilization of a service may probably be to maintain a status quo, and not necessarily because the service is the most appropriate solution. Comparative needs are based on the similarity of expectations of a comparison group and that of the target group. There is a danger of imposing externally perceived needs on the target group, as comparative needs assume comparability of groups and ignore the unique characteristics of each group, which invalidate generalizations (McKillip, 1987). As the techniques employed for need analysis will influence the acceptability, efficiency and effectiveness of the solution proposed, and hence the success of the development process, the importance of correct diagnosis of needs of a target group cannot be overemphasized.

Research methodology

The ILO (1987) stressed the importance of a thorough need analysis to identify the major difficulties faced by domestic contractors in the local construction market in which they operate. A wide variety of methods can be used in systematic evaluation of the problems and needs of a target group for purposive, organized intervention programmes. The methods vary in their complexity, costs and diagnostic accuracy. They include resource inventory, use analysis, social indicator analyses, surveys and structured groups. McKillip (1987) recommended the use of multiple methods to reduce bias and increase accuracy. This is similar to the approach recommended by Hernes (1988) for identifying contractor training needs. He recommended that information should be obtained from contractors themselves, from independent construction consultants, who work in the industry, and from clients' supervisory staff, who work closely with contractors. He opined that the last two groups would probably be more objective in judging contractors' performance. Rossi and Freeman (1993) argued that information collected from varying perspectives on needs may eliminate rancorous conflict that may arise, may lead to a reconceptualization of the problem or of the prospective solution, or may even indicate the advisability of abandoning the programme.

Surveys are very popular methods for gathering information for need identification and assessment as they allow inputs from various sources – clients, key informants and target populations – and help to build consensus for solutions (McKillip, 1987). Two sets of self-administered questionnaires were developed and used for the study. The first questionnaire was used to collect information from indigenous contractors (the target population). They are owner-managers of construction firms wholly owned by Nigerians, operating in the formal sector of the industry. The other questionnaire was used for professionals, who included independent consultants as well as clients' representatives (key informants and clients). Both questionnaires consisted of similar open-ended and closed questions on the personal characteristics of respondents and their opinion on 26 constraint items, and the relevance to the Nigerian industry of 20 contractor development items derived mainly from programmes proposed by the ILO (1987). The verbal ratings of the end-points of the six-point numerical rating scale used were indicated (1 for not very important and 6 for very important). Draft questionnaires were discussed with a British expert and four Nigerian researchers. They were also pretested on five Nigerian contractors and professionals respectively to check the suitability and appropriateness of the questions .

A total of 400 questionnaires, comprising 200 of each set of questionnaires, were sent to Nigerian indigenous contractors and construction professionals in three south-western states in Nigeria: Lagos, Oyo and Ogun. Lagos is the commercial nerve-centre of Nigeria, where the majority of companies have their national headquarters. Questionnaires were delivered by hand to samples of respective groups selected by non-random sampling techniques. Lack of comprehensive lists of contractors from which accurate sampling frames could be developed necessitated the use of non-probability sampling techniques. Purposive, convenience and snowballing sampling techniques

were used. Key professionals employed by major public and private clients were identified and used as agents to reach other professionals as well as contractors (snowballing) for inclusion in the sample. Only indigenous contractors known to be actively involved in construction business were selected (purposive sampling) to avoid the experience of the Federal Office of Statistics (1982), when many contractors on the list of the Federal Works Registration Board could not be traced in the field. Contractors available on the researchers' unscheduled visits to contractors' head offices, construction sites or professionals' offices were also included in the sample (convenience or accidental sampling).

A total of 140 questionnaires were returned: that is, 35% of the total sent out. This was made up of 69 from contractors (34.5% of the number sent) and 71 from professionals (35.5% of the number sent). The survey was conducted at a time when the industry was overtly concerned about completing on-going government contracts and obtaining payments prior to a change from military to civilian government. This probably influenced response rates.

Presentation and analysis of results

Frequency distribution of responses based on actual responses, excluding no and missing responses, are used to report the characteristics of respondents. Percentage responses of the importance of the variables (constraints of indigenous contractors and contractor development measures) on the six-point scale are presented. However, responses were collapsed into three groups: 1 or 2, 3 or 4, and 5 or 6, for convenience in data presentation. A rating of 1 or 2 implies that the variable is not perceived as important; 3 or 4 means it is marginally important; while 5 or 6 means it is very important. An importance index is used to rank the relative importance of each variable. This could be expressed mathematically as:

$$\text{Importance index} = \frac{100 \sum (af)}{AF} \tag{1}$$

Where a is the weighting, ranging from 1 to 6, given to each variable; A is the highest weight, that is, 6; f is the frequency of the response; and F is the total number of respondents. When a tie occurs, ranking is in accordance with the percentage of respondents rating the variable as very important (i.e. 5 or 6). A low importance index indicates that the variable is perceived to be of a low importance, while a high importance index indicates a high importance.

For simplicity, the rank agreement factor (Aniekwu and Okpala, 1987, 1988; Okpala and Aniekwu, 1988) was used to measure quantitatively the agreement in the ranking between the contractors and professionals. A rank agreement factor is defined as:

$$RA = \frac{\sum_{i=1}^{N} |R_{i1} - R_{i2}|}{N} \tag{1}$$

$RA_{\max}$ is defined as

$$RA_{\max} \frac{\sum_{i=1}^{N} |R_{i1} - R_{i2}|}{N} \tag{2}$$

The percentage agreement, PA, is

$$PA = 100 - PD \tag{3}$$

while the percentage disagreement, PD, is

$$PD = \frac{\sum_{i=1}^{N} |R_{i1} - R_{i2}|}{\sum_{i=1}^{N} |R_{i1} - R_{j2}|} \times 100 \tag{4}$$

where for any two groups, the rank of the ith item by group 1 is R_{i1} and group 2 is R_{i2}; $i = 1, 2, \ldots, N$; $j = N - i + 1$. RA can be greater than 1; a lower value implies a closer agreement between the two groups, while a factor of zero implies perfect agreement, and complete disagreement would give $RA_{\max}$.

McKillip (1987) recommended the use of multi-attribute utility analysis (MAUA) for integrating information from various sources. It is used to synthesize the results of needs assessment from the contractors and the professionals. The importance index obtained from each group is rescaled to utility values (utilities) that range from 0.0 to 1.0 to reflect and indicate the extent of need. The lowest attribute score is assigned a utility of 0.0, and the highest is assigned 1.0. Utility values of intermediate scores are equal to

$$n_{ij} = \frac{X - L}{H - L} \tag{5}$$

where n_{ij} is the utility value of option i on attribute j, X is the intermediate attribute score, L is the score of attribute j assigned the utility of 0.0, and H is the score of attribute j assigned 1.0.

Weights, w_j, are assigned to attributes to reflect the relevance of the source of information. The most important attribute is assigned a weight of 100, and the weights assigned to other attributes reflect their relative importance: the larger the weight, the more relevant the attribute. Weights are standardized by adding all weights and dividing each weight by this sum:

$$w_j = \frac{\text{Raw weight for attribute}}{\text{Sum of all importance weights}} \quad (6)$$

$$N_i = \sum (w_j \times n_{ij}) \quad (7)$$

Need index, N_i, ranges from 0.0, indicating no evidence of need, to 1.0, indicating the maximum plausible evidence of need. The need index N_i for each option i is equal to the sum over all attributes of the product of the weight of the attribute, w_j, and the utility of the attribute score for the option, n_{ij}.

Characteristics of contractors responding to the questionnaire

Two women were among the 69 contractor respondents. The respondents are all owner-managers of their respective firms. The age distribution of the sample was mostly between 25 and 54; the mean age was 41 and the modal age group was 35–44 years. Sixty-two per cent of respondents were under 45 years. Eighty-three per cent had formal education beyond secondary school level while 75% had construction qualifications and 44% had degree and postgraduate qualifications. Fifty-eight per cent of the contractors sampled had less than 25 employees. Further analysis showed that 74% of the sample had at least one other management staff apart from the owner-manager. Sixty-two per cent of the respondents have been in business for less than ten years. Fifty-five per cent operated as limited liability companies, while the rest of the respondents were sole proprietorships (23%) or partnerships (22%). The average number of owners in partnerships or limited liability companies was found to be 3. Seventy-two per cent of respondents indicated that they were involved in both building and civil engineering works, while 86% were registered to tender for small/medium-sized contracts valued under 2 million Naira (1 Naira was equivalent to $1.50 in 1982 when the contractor registration categories was last reviewed). Sixty-six per cent of contractors sampled indicated that new works predominated their works, while government was the main client of the majority (56%). Fifty-seven per cent were involved in other business activities, including 33% who were involved in other construction-related businesses: mainly construction consultancy, materials supplies and retailing.

Characteristics of the professionals

Respondents included a good cross-section of professionals in the construction industry. All the respondents had tertiary education, with 26%, 28%, 27% and 19% having qualifications in building, architecture, engineering and quantity surveying respectively. Seventy per cent had degree qualifications, while 80% were corporate members of their respective professional bodies. About 90% had seven years' or more experience in the industry, including 60% with over 10 years' experience and 10% with over 25 years' experience. All respondents had worked closely with at least one indigenous contractor, and 62% had worked closely with five or more indigenous contractors in the past five years. Thirty-two of the respondents indicated employment in the public sector while an equal number were employed in the private sector.

Major constraints on indigenous contractors' performance

Respondents' perceptions of the impact of 26 variables on the performance of indigenous contractors in the Nigerian industry are presented in Table 1. The four most important constraints identified by both groups were uncertainties in supplies and prices of materials, obtaining payments, procuring work, and access to capital. Earlier studies (Wahab, 1977; Aniekwu and Okpala, 1987, 1988; Dlakwa and Culpin, 1990) also identified these variables as the major difficulties in the industry. Other major constraints perceived by both groups included procuring and maintaining plant and equipment, and meeting contract deadlines. Additional constraints (importance index greater than 50) identified by the professionals related to personal deficiencies of contractors, while those identified by the contractors related to problems emanating from the professionals. This reflects the adversarial relations between the two groups – a typical problem in the construction industry of most countries, both developed and developing economies. However, the professionals' importance index rating of most of the variables was higher than those of the contractors.

Additional constraints identified by the respondents in the open-ended section are shown in Table 2. Corruption includes kickbacks and fraudulent practices, which Okpala and Aniekwu (1988) also identified among the major factors resulting in construction cost overrun in Nigeria. Indigenous contractors were shunned on the pretext that the nation was in a hurry to develop, and only good and well-established contractors, who could complete projects in a short time, were to be considered (Olugbekan, 1991). Such prejudice against Nigerian contractors has deprived them of a right to participate effectively in the country's construction industry. Double taxation is a problem arising from tax deductions at source on payments by public clients in addition to corporate tax.

There is a reasonable agreement between both groups in the ranking of all the constraints. The

Table 1 Constraints on indigenous contractors' performance

Variables	Contractors					Professionals				
	Percentage responding					Percentage responding				
	5 and 6	3 and 4	1 and 2	Importance index	Rank order	5 and 6	3 and 4	1 and 2	Importance index	Rank order
Uncertainties in supplies and prices of materials	75.4	17.4	7.2	81.7	1	55.7	35.7	8.6	74.8	2
Obtaining interim payment	57.3	33.8	8.9	74.5	2	52.9	35.7	11.4	72.9	4
Procuring work	52.2	34.3	13.5	73.9	3	49.3	43.7	7.0	73.0	3
Access to capital	50.7	36.2	13.1	73.2	4	67.6	31.0	1.4	82.4	1
Negotiating variation payment	43.5	33.3	23.2	68.4	5	35.2	42.2	22.6	61.5	14
Access to plant and equipment	46.4	33.3	20.3	66.4	6	43.6	45.1	11.3	70.6	6
Inappropriate contract conditions	36.2	42.0	21.8	62.8	7	34.3	41.4	24.3	61.4	15
Maintaining plant and equipment	31.9	36.2	31.9	58.9	8	37.1	47.2	15.7	64.5	9
Resolving contract disputes	30.5	21.7	47.8	53.4	9	21.1	38.0	40.9	51.2	22
Meeting contract deadlines	17.7	48.5	33.8	52.9	10	52.9	33.8	13.3	71.3	5
Design changes	16.2	45.6	38.2	52.0	11	16.0	44.9	39.1	49.8	23
Incomplete contract documents	18.8	39.2	42.0	49.8	12	18.5	50.0	31.5	55.0	21
Transporting materials and equipment	16.1	40.5	43.4	48.6	13	11.3	52.1	36.6	49.8	24
Materials control on site	14.5	49.3	36.2	47.8	14	34.3	44.3	21.4	60.5	17
Providing reliable tenders	18.9	28.9	52.2	46.6	15	24.6	43.5	31.9	56.3	19
Communicating with client/ representatives	16.0	21.9	52.1	45.4	16	9.8	42.2	48.0	45.1	26
Shortages of skilled labour	14.5	27.6	57.9	43.0	17	22.1	55.9	22.0	55.6	20
Public image	11.7	33.9	54.4	42.6	18	30.0	47.2	22.8	59.8	18
Accounting of financial management	8.6	37.7	53.7	41.1	19	38.4	38.4	23.2	64.6	8
Inadequate supervision by client	8.7	26.1	65.2	40.3	20	9.8	45.1	45.1	46.0	25
Project planning and site management	5.9	28.9	65.2	38.2	21	33.8	49.3	16.9	64.3	10
Technical know-how	11.6	18.8	69.6	37.9	22	31.4	45.7	22.9	62.8	11
Commitment to construction	5.9	30.9	63.2	37.5	23	32.8	48.6	18.6	62.6	13
Company organization	5.8	30.4	63.8	37.4	24	35.7	52.8	11.5	66.9	7
Personnel management	5.8	29.0	65.2	36.9	25	28.5	55.8	15.7	62.8	12
Providing quality workmanship	5.8	29.0	65.2	36.8	26	26.8	53.5	19.7	61.0	16

Table 2 Additional constraints on contractors' performance

Constraints	Contractors	Professionals
Corruption	5	4
Changes in government and economy	1	4
Prejudice against indigenous contractors' competence	5	2
Theft and fraud by own employees	1	–
Double taxation	2	–
Breach of contract by public clients	1	2

constraints are classified into three categories: difficulties emanating from the business environment; difficulties emanating from clients and/or their representatives; and difficulties due to contractors' incompetence, as shown in Table 3.

The rank agreement factor and percentage agreement for the categories and all constraints are shown in Table 4. There is a close agreement between both groups in their perceptions of the severity of the constraints emanating from the business environment, and a closer agreement in their perceptions of constraints emanating from clients and clients' representatives. Both groups substantially disagreed in the way they perceived the severity of constraints arising from personal deficiencies of the contractors. It is not surprising that the contractors failed to admit personal shortcomings. Studies have shown that small business owner-managers in general, and small contractors in particular, are usually very optimistic of their competence, and often blame external factors for their business problems (Dandridge and Sewall, 1978; Franklin and Goodwin, 1983; Norris, 1984; Mahmood, 1992). The professionals also may have been over-critical of the contractors' competence.

Table 3 Categories of constraints on contractors' performance

Constraints	Importance index	Rank	Importance index	Rank
Constraints emanating from the business environment				
Procuring work	73.9	3	73.0	3
Access to capital	73.2	4	82.4	1
Shortages of skilled labour	43.0	17	55.6	20
Uncertainties in supplies and prices of materials	81.7	1	74.8	2
Access to plant and equipment	66.4	6	70.6	6
Meeting contract deadlines	52.9	10	71.3	5
Negotiating variation payment	68.4	5	61.5	14
Communication with client	45.4	16	45.1	26
Resolving contract disputes	53.4	9	51.2	22
Transporting materials and equipment	48.6	13	49.8	24
Maintenance of plant and equipment	58.9	8	64.5	9
Constraints emanating from client or representatives				
Obtaining interim payment	74.5	2	72.9	4
Inapprorpriate contract conditions	62.8	7	61.4	15
Incomplete contract documents	49.8	12	55.0	21
Inadequate supervision by client	40.3	20	46.0	25
Design changes	52.0	11	49.8	23
Constraints resulting from contractors' deficiencies				
Providing quality workmanship	36.8	26	61.0	16
Technical know-how	37.9	22	62.8	11
Providing reliable tenders	46.6	15	56.3	19
Planning of work and site	38.2	21	64.3	10
Materials control on site	47.8	14	60.5	17
Company organization	37.4	24	66.9	7
Personnel management	36.9	25	62.8	12
Accounting and financial management	41.1	19	64.6	8
Public image	42.6	18	59.8	18
Commitment to construction	37.5	23	62.6	13

Table 4 Comparison of relative importance of all constraints and categories

Source of constraints	Rank agreement *RA*	Maximum rank agreement, RA_{max}	Percentage agreement
All constraints combined	7.00	13.0	46.2
The business environment	1.64	5.4	70.0
Client or client representatives	0.40	2.4	83.3
Contractors' deficiencies	4.20	5.0	16.0

Constraints emanating from the business environment were generally perceived as most severe by both groups. Uncertainties in supplies and prices of materials were perceived as the most important constraint by the contractors, while it was perceived as the second most important by the professionals. The major factor creating shortages of materials, and hence intractable fluctuations in prices, is overdependence on imports, either as finished products or as raw materials for local production. Both groups agreed that obtaining work regularly is the third most important constraint. Fluctuations in construction workload in the Nigerian industry are exacerbated by the industry's overdependence on public contracts. For example, output of the industry fell by 50% in value from 1981 to 1985, and by a further 5% in 1986; the largest single construction project since 1982 has been the building of a new federal capital at Abuja, but progress of work is adversely affected by the reduction in budget allocations and general government cutbacks on all construction projects (Smith, 1991). Indigenized foreign firms dominate the large projects, while the proliferation of small indigenous construction enterprises reduces each contractor's capacity and access to

the few jobs that are within their capacity, resulting in little or no jobs for most of them. An analysis of over 1100 construction contracts awarded by federal and state governments between 1974 and 1984 showed that while indigenous contractors obtained 875 contracts – that is, 77% of the total number of contracts considered – the total value of the contracts awarded to them was less than 7% of the total volume of works involved (Olateju, 1991). Access to capital was perceived by professionals as the most important constraint, though this variable ranked fourth with contractors. Most indigenous contractors are limited to their own capital resources, and they lack access to adequate finance for both working capital and investment in essential equipment. Construction is a high-risk venture; financial institutions tend to be more critical in assessing loan applications from contractors. Lack of collateral, and bad financial management habits of most Nigerian contractors (especially good accounting records) frustrate their applications (Adeyemo, 1974; Akeredolu-Ale, 1974; Olayide, 1976).

Construction plant and equipment and spares are mostly imported, and very few indigenous contractors could afford equipment ownership. Uncertainties in availability of regular jobs do not even justify such investment. But those who invested in machinery have shown gross ineptitude in equipment maintenance and management (Opara, 1988). Unfortunately, plant and equipment hire and leasing facilities are generally inadequate; the hiring rates are exorbitant, and conditions are unfavourable to indigenous contractors (Olugbekan, 1991).

Delays in payment to contractors for work done was perceived in both groups as the most severe constraint emanating from the client. Public clients were observed as the worst culprit (Aniekwu and Okpala, 1987, 1988). Factors that contribute to delays include lack of adequate funds to meet government financial obligations as a result of inadequate financial planning, unforeseen economic problems, or blatant mismanagement and misappropriation of public and project funds (Anekwe, 1987). Corrupt government officials further exacerbate notoriously slow bureaucratic payment procedures, intended to ensure checks and controls for accountability in government expenditures for selfish personal gains. Some contractors are also unaware of public administration procedures so as to facilitate payments due to them (Okoronkwo, 1987). Deficiencies in contract conditions, documentation and administration received mixed responses from both groups. Aniekwu and Okpala (1987, 1988), however, highlighted the significant impact of these variables on project cost and time in the industry. These factors were not perceived by the respondents as important constraints on indigenous contractors' performance.

Lack of skilled labour, as well as deficiencies in technical and managerial skills, are often highlighted in the literature as the major constraints on indigenous contractors in most developing countries. Similar observations were made about Nigerian contractors (Intermediate Technology, 1970; Diatchavbe, 1974; Schatz, 1977). Neither group perceived shortages of skilled labour as major obstacles to contractors' performance. Though Aniekwu and Okpala (1987, 1988) highlighted the importance of this variable, a later study (Elinwa and Buba, 1992), however, marginalized its importance as an important factor in project cost and time overrun. Economic recession has caused a lull in construction activity, resulting in considerable under-employment in the industry. The contractors did not perceive deficiencies in technical know-how, company organization, accounting and financial management or planning of work and site management as major constraints on their performance. Though these variables were among the 12 most severe constraints identified by the professionals, none was rated as very important (5 or 6 on the scale) by the majority of the professionals. The majority of the contractors sampled were trained construction professionals. Olateju (1991) similarly observed the entry of a new cadre of trained professionals in the industry. The performance of this new crop of construction entrepreneurs has probably improved the images of technical and managerial incompetence that were associated with Nigerian contractors in the past.

Appropriate contractor-development measures

The responses of contractors and professionals on the relevance of the contractor development measures to the situation of Nigerian contractors are shown in Table 5. All variables have an importance index greater than 50. Thus they were all perceived as important contractor development measures by both groups. However, the professionals' rating of most of the programme was generally higher than those of the contractors. Notwithstanding, programmes perceived as very important by both groups are also those required to ameliorate the most important constraints identified: obtaining interim payments; uncertainties in supplies and prices of materials; and inadequate access to capital, plant and equipment.

Analysis showed a very close agreement between the two groups on the appropriate contractor-development programmes to ameliorate the constraints faced by indigenous contractors in the Nigerian industry. The rank agreement factor is 5.0 (maximum rank agreement = 20), and percentage agreement is 75%. Both

Table 5 Contractor-development measures for indigenous contractors in Nigeria

Variables	Contractors					Professionals				
	Percentage responding					Percentage responding				
	5 and 6	3 and 4	1 and 2	Import-ance index	Rank order	5 and 6	3 and 4	1 and 2	Import-ance index	Rank order
More efficient payment procedures	88.4	11.6	0.0	92.5	1	93.0	7.0	0.0	92.0	1
Planned government demand for construction	79.7	15.9	4.4	87.9	2	71.4	24.3	4.3	83.3	3
Improved access to materials	84.1	11.6	4.3	87.7	3	82.9	10.0	7.1	84.3	2
Provision of loan/loan guarantee schemes	79.7	18.8	1.5	87.7	4	73.2	18.3	8.5	79.8	6
Provision of plant hire	79.7	18.8	1.5	86.5	5	75.7	18.6	5.7	82.9	4
Provision of mobilization allowances	71.0	24.6	4.4	84.8	6	57.7	31.0	11.3	73.7	9
Training and advisory services	72.5	18.8	8.7	80.9	7	68.1	29.0	2.9	80.0	5
More efficient contractor registration procedure	65.2	26.1	8.7	79.2	8	58.0	26.1	15.9	73.4	11
Improved tendering procedures	63.8	29.0	7.2	79.2	9	48.6	38.6	12.8	71.9	13
More equitable contract conditions	56.5	37.7	5.8	78.0	10	50.7	36.6	12.7	72.1	12
More subcontracting by larger firms	62.7	22.4	14.9	75.9	11	63.4	25.3	11.3	76.3	7
Standardization of contract documents	62.3	21.7	16.0	74.9	12	42.3	35.2	22.5	65.7	14
Lower retention money	55.1	29.0	15.9	72.7	13	16.9	28.2	54.9	45.5	20
Incentives for small firms to team up	61.8	17.6	20.6	72.3	14	62.0	25.3	12.7	74.7	8
Tendering preferences	50.8	34.3	14.9	70.7	15	36.9	43.1	20.0	64.9	15
Standardization of design	46.4	33.3	20.3	69.1	16	33.8	36.6	29.6	61.3	17
Contract splitting	42.0	40.6	17.4	68.1	17	38.6	37.1	24.3	64.5	16
Lesser use of direct labour	47.1	25.0	27.9	65.0	18	35.2	35.1	29.7	73.7	10
More active contractors' association	42.0	30.4	27.6	63.3	19	31.0	46.5	22.5	59.4	18
Government sponsored contractor development agency	35.3	35.3	29.5	60.1	20	29.6	36.6	33.8	56.1	19

$RA = 5.0$, $RA_{max} = 20$, $PA = 75\%$

groups emphasized provision of support to improve the business environment in which contractors operate.

Table 6 presents the utility values, weights and need index of the support items. Self-assessment is often emphasized in needs analysis, as ownership of needs increases commitment towards proposed remedies (Oppenheimer, 1982; McEnery and McEnery, 1987). Hence a greater weight is assigned to contractors' attributes. The weight of 100 is assigned to contractors' self-rating of needs, while 60 is assigned to that of the professionals. The ratio of 100:60 yields standardized weights of 0.625 and 0.375 respectively.

The MAUA presents a slightly different rank order of needs from that obtained from either of the groups, but it closely resembles that of the contractors. The most important measures in descending order of importance are: a more efficient payment system, to ensure prompt payments for work done; planned government demand for construction works to facilitate a regular flow of work; improved access to materials, to overcome uncertainties in supplies and fluctuations in prices of materials; and provision of loans or loan guarantee schemes to improve access to capital. Other measures with a high need index include: provision of plant hire services, to ameliorate difficulties in equipment ownership; provision of mobilization allowances, to minimize working capital requirements; and provision of training to enhance technical and managerial capacity.

Indigenous contractors' participation in the Nigerian industry is quite marginal (Olateju, 1991; and Olugbekan, 1991). Programmes such as improved tendering procedures, standardization of contract documents, subcontracting by larger firms, and incentives to form larger firms will enhance indigenous contractors' access to work, and these were perceived as very important by the majority of contractors. However, only the last two were perceived as very important by the majority of the professionals. But the majority of the respondents in both groups agreed that less use of direct labour, contract splitting, and special preference for indigenous contractors in contract price

Table 6 MAUA of contractor development measures

	Contractors			Professionals				
Support programmes	Attribute score	Utility values	Utility × weight (0.625)	Attribute score	Utility values	Utility × weight (0.375)	Need index	Rank
More efficient payment	92.5	1.00	0.625	92.0	1.00	0.375	1.00	1
Improved access to materials	87.7	0.852	0.532	84.3	0.834	0.313	0.845	2
Planned government demand for construction	87.9	0.858	0.536	83.3	0.813	0.305	0.841	3
Provision of plant hire	86.5	0.815	0.509	82.9	0.804	0.302	0.811	4
Provision of loan/loan guarantee	87.7	0.852	0.532	79.8	0.738	0.277	0.809	5
Pay mobilization allowances	84.8	0.762	0.476	73.7	0.606	0.227	0.704	6
Training and advisory services	80.9	0.642	0.401	80.0	0.742	0.278	0.679	7
More efficient pre-qualification	79.2	0.590	0.368	73.4	0.600	0.225	0.593	8
Improved tendering procedures	79.2	0.590	0.368	71.9	0.568	0.213	0.581	9
More equitable contracts	78.0	0.552	0.345	72.1	0.572	0.215	0.560	10
More subcontracting by big firms	75.9	0.488	0.305	76.3	0.662	0.248	0.553	11
Incentives for firms to merge	72.3	0.377	0.235	74.7	0.628	0.235	0.471	12
Standard contract documents	74.9	0.457	0.285	65.7	0.434	0.163	0.448	13
Price preference/tendering bias	70.7	0.327	0.204	64.9	0.417	0.156	0.361	14
Lesser use of direct labour	65.0	0.151	0.095	73.7	0.606	0.227	0.322	15
Contract splitting	68.1	0.247	0.154	64.5	0.409	0.153	0.308	16
Standardization of design	69.1	0.278	0.174	61.3	0.340	0.127	0.301	17
Lower retention money	72.7	0.389	0.243	45.5	0.00	0.00	0.243	18
More active contractors' association	63.3	0.099	0.062	59.4	0.299	0.112	0.174	19
Government sponsored contractor development agency	60.1	0.000	0.000	56.1	0.228	0.085	0.085	20

or in tendering exclusively for some contracts are modestly important in improving indigenous contractors' participation in construction works. The majority of the respondents in both groups did not perceive an institution such as a contractor development agency or a contractors' association to coordinate and promote contractor development and channel government support to contractors to be a desirable support programme in the Nigerian context.

It is, however, interesting that a majority of the contractors perceived provision of training and advisory services (73%) and more efficient contractor-registration procedures (65%) as very important. These variables have been identified as the catalyst required for meaningful development of Nigerian contractors (Adams, 1987, 1988) as lapses in these areas have encouraged incompetence and the proliferation of 'emergency contractors', who are not usually committed to construction entrepreneurship. They operate sporadically in the industry whenever circumstances are favourable to facilitate easy access to construction contracts.

Conclusions

There is a consensus among the contractors and the professionals on the major constraints on performance of indigenous contractors and the most appropriate programmes needed to promote development of Nigerian contractors. Both groups agreed that the most severe constraints emanate from the business

environment and the client. These are typical problems of small contractors in most developing countries: uncertainties in supplies and prices of materials, obtaining interim payments, obtaining regular jobs, access to finance for working capital, and investment in plant and equipment. The professionals indicated that other important constraints emanate from the managerial deficiencies of contractors, while the contractors highlighted the modest impact made by shortcomings in the professionals' activities in the construction process.

Both groups, however, agreed that the most important support required is that to mitigate the critical constraints: primarily, improved access to regular work, as well as provision of basic resources – money, materials and machinery required to implement jobs obtained. There was a consensus that intractable delays in payment for work done are most detrimental, and the situation demands urgent attention to ease the difficulties caused. The impact of this critical problem will be considerably minimized if mobilization advance is paid by public clients: with necessary measures to curtail any abuse, however. The study shows that the provision of training, and a more efficient contractor registration procedure, which have hitherto been neglected, were perceived as very important by the majority of respondents in both samples. Training was ranked next in importance to the primary support required to ensure access to basic inputs and regular work.

The importance of the correct diagnosis of the needs of a target group cannot be overemphasized. The findings of this study validate many other studies, which showed that small business owner-managers are reluctant to admit their own deficiencies. The findings further substantiate the need for assessment by others to verify self-assessment of problems and needs by contractors. This approach was suggested by Hernes (1988) in respect of training need analysis; it could also be adopted for assessing contractor-development needs. It would ensure a more objective assessment of contractors' performance, problems and needs, so that proposed intervention programmes are adequate and appropriate to the problems identified. This will also promote the target population's acceptance of and commitment towards programmes, and hence the effective take-up and utility of programmes to ensure the success of the development process.

As past efforts to create a more favourable operating environment for indigenous contractors have not been successful, future development programmes for Nigerian contractors should emphasize the provision of appropriate training programmes, to enable them learn how to deal effectively with the emerging constraints in their business environment. The study also shows conclusively that there is a general dislike in the Nigerian industry for an institution or agency for contractor development, such as is the case in many developing countries. This was appropriately left out in the National Construction Policy. Though inefficient contract conditions, documentation or tendering processes were not perceived as major constraints to contractors' performance, the need for urgent review in the existing systems and practices should be emphasized.

The findings of the study also show that a new crop of contractors is emerging in Nigeria. They are not 'emergency contractors', as they have relevant professional education and training in construction. They have the potentials to become larger and more efficient construction firms if appropriate supports are provided. They would probably be more committed to utilizing supports provided effectively to improve their firms' performance in the industry. It is recommended that more emphasis should be placed on promoting management development of this category of contractors, using appropriate education and training approaches. The National Construction Policy paid little attention to this aspect. Further research will be required in this area.

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References

Adams, O.A. (1987) Contractors' registration requirements in Nigeria: need for a critical review. *Journal of Construction in Nigeria*, **4** (2), 24–31.

Adams, O.A. (1988) Towards the improvement of indigenous executive capacity in Nigeria's contracting industry. Paper presented at the National Construction Policy Workshop (November, 1988), Badagry, Nigeria.

Adams, O.A. (1993) Management training needs of Nigerian indigenous contractors and their preferred delivery systems, unpublished PhD thesis, University of London.

Adeyemo, M.A. (1974) Financing the construction industry: problem and prospects, in *Construction in Nigeria, Proceedings of the 1974 Annual Conference*, Nigerian Economic Society, Ibadan, pp. 235–61.

Akeredolu-Ale, E.O. (1974) Prospects for indigenous enterprise in Nigeria's construction industry, in *Construction in Nigeria, Proceedings of the 1974 Annual Conference*, Nigerian Economic Society, Ibadan, pp. 135–45.

Andrews, J. (I985) Construction industry development: a comprehensive programme for strengthening the construction industry in developing countries, unpublished manuscript, University College, London.

Andrews, J. (1990, May) Building strategy: how to win, structure and manage projects, paper presented at the first ASEAN International Symposium on Construction and development, Kuala Lumpur.

Anekwe, C.M. (1987) Contract award – Nigerian experience. *Journal of Professional Issues in Engineering*, **113**, 229–35.

Aniekwu, A.N. and Okpala, D.C. (1987) Contractual arrangements and the performance of the Nigerian construction industry (the structural component). *Construction Management and Economics*, **5**, 3–11.

Aniekwu, A.N. and Okpala, D.C. (1988) The effect of systemic factors on contract services in Nigeria. *Construction Management and Economics*, **6**, 171–82.

Curran, J. (1993) *Can TECs reach the small firms other strategies have failed to reach?* Kingston University Small Business Research Centre, Kingston.

Dandridge, T.C. and Sewall, M.A. (1978) A priority analysis of the problems of small business managers. *American Journal of Small Business*, **3** (2), 28–36.

Dlakwa, M.M. and Culpin, M.F. (1990) Reasons for overrun in public sector construction projects in Nigeria. *Project Management*, **8**, 237–41.

Diatchavbe, O. (1974) Indigenization of construction industry in Zaria. A case study, in *Construction in Nigeria, Proceedings of the 1974 Annual Conference*, Nigerian Economic Society, Ibadan, pp. 167–85.

Edmonds, G.A. and Miles, D.W. (1984) *Foundations for change, aspects of the construction industry in developing countries* Intermediate Technology, London.

Elinwa, A.U. and Buba, S.A. (1992) Construction cost factors. *Journal of Construction Engineering and Management* **119**, 698–713.

Federal Office of Statistics (1982) *Report of Building and Construction Survey 1980*. Federal Office of Statistics, Lagos.

Federal Republic of Nigeria (FRN) (1980) *Fourth National Development Plan 1981–85*. Federal Ministry of National Planning, Lagos.

Federal Republic of Nigeria (FRN) (1981) *Report of the Ministerial Committee on the Causes of the Excessively High Cost of Government Contracts in Nigeria*. Federal Government Press, Lagos.

Federal Republic of Nigeria (FRN) (1991) *National Construction Policy*. Federal Government Press, Lagos.

Franklin, S.G. and Goodwin, J.S. (1983) Problems of small business and sources of assistance. *Journal of Small Business Management*, **21** (2), 5–12.

Hernes, T. (1988) *Training Contractors for Results: A Guide for Trainers and Training Managers*. ILO, Geneva.

ILO (1987) *Guidelines for the Development of Small-scale Construction Enterprises*. ILO, Geneva.

Intermediate Technology (1970) *Nigerian Building Contractors: Practices, Problems and Needs*. Intermediate Technology, London.

Karming, P.F., Olomolaiye, P.O., Corbett, P. and Harris, F.C. (1994) A framework for the strategic development of the construction industry in developing countries. *Building Research and Information*, **22**, 325–31.

Kirmani, S.S.(1988) *The Construction Industry in Development Issues and Options*. Report INU 10, World Bank, Washington.

Kubr, M. and Prokopenko, J. (1991) *Diagnosing Management Training and Development Needs: Concepts and Techniques*. ILO, Geneva.

Mahmood, A (1992) Educational interests and needs of owner-managers of small building firms, Unpublished PhD thesis, Heriot-Watt University, Edinburgh.

McEnery, J. and McEnery, J. (1987) Self-rating in management training needs assessment: a neglected opportunity? *Journal of Occupational Psychology*, **60** (1), 49–60.

McKillip, J. (1987) *Need Analysis: Tools for the Human Services and Education.* Sage, Newbury Park.

Miles, D. and Neale, R. (1991) *Building for Tomorrow: International Experience in Construction Industry Development*. ILO, Geneva.

Norris, K. (1984) *Small Building Firms – Their Origins, Characteristics and Development Needs*. The Chartered Institute of Building, Ascot, UK.

Ofori, G. (1980) The construction industries of developing countries. The applicability of existing theories and strategies for their improvement and lessons for the future: the case study of Ghana, unpublished PhD thesis, University of London.

Ofori, G. (1991) Programmes for improving the performance of contracting firms in developing countries: a review of approaches and appropriate options. *Construction Management and Economics*, **9**, 19–38.

Ojo, M.O. (1989) An appraisal of the socio-impact of structural adjustment policies in Nigeria. *Central Bank of Nigeria: Economic and Financial Review*, **27** (1) 38–57.

Okoronkwo, E.K. (1987) An analysis of causes of delayed payment to the contractor in the construction industry, unpublished MSc research report, University of Lagos.

Okpala, D.C. and Aniekwu, A.N. (1988) Cause of high costs of construction in Nigeria. *Journal of Construction Engineering and Management*, **14**, 233–44.

Olateju, B. (1991) An evaluation of the level of participation of indigenous contractors in the construction industry in Nigeria between 1974 and 1984. *Nigerian Engineer*, **26** (3), 1–15.

Olayide, S.O. (1976) *Economic Survey of Nigeria 1960–75*, Aromolaran, Ibadan.

Olugbekan, O.O. (1991) The construction industry and the Nigerian engineer, paper presented for the Tenth October

lecture (October, 1991), Nigerian Society of Engineers, Lagos.

Opara, C.P. (1988) The need for standardization of the construction plant and equipment used by the Nigerian contractors, unpublished Bachelor of Env. Studies degree research report, University of Lagos.

Oppenheimer, R.J. (1982) An alternative approach to assessing management development needs. *Training and Development Journal*, **36**(3), 72–6.

Rogers, A. (1992) *Adults Learning for Development*. Cassell, London.

Rossi, P.H. and Freeman, H.E. (1993) *Evaluation: a systematic approach*, 5th edn., Newbury Park.

Schatz, S.P. (1977) *Nigerian Capitalism* University of California Press, Berkeley, California.

Smith, P. (1991) Nigeria: economy in *Africa South of the Sahara*, Europa, London, pp. 774–84.

UNCHS (1981) *Review of the Role and Contribution of the Construction Industry in Human Settlements Programmes and National Economic and Social Development*. (Report HS/C/4/3). UNCHS, Nairobi.

UNCHS (1984a) *Construction Industry in Developing Countries* (Vol. 1), *Contributions to Socio-economic Growth*. UNCHS, Nairobi.

UNCHS (1984b) *Government Policy Guidelines to Improve the Efficiency of the Construction Industry*. UNCHS, Nairobi.

Wahab, K.A. (1977) Improving efficiency in the building sector. *West African Technical Review*, May, 81–9.

Wells, J. (1985) The role of construction in economic growth and development. *Habitat International*, **9**, 55–70.

Wells, J. (1986) *Construction Industry in Developing Countries – Alternative Strategies for Development*. Croom Helm, London.

World Bank (1984) *The Construction Industry – Issues and Strategies in Developing Countries*. World Bank Publications, New York.