

Construction in Developing Countries: A Research Agenda

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Abstract

The International Council for Research and Innovation in Building and Construction (CIB) has launched an international initiative to revalue the construction industry. This paper considers a research agenda which can be adopted to provide the framework for the revaluing of the construction industries in developing countries. It is based on a review of the literature. The paper starts by defining, "revaluing construction," and noting its relevance to developing countries. After highlighting the importance of construction to socio-economic development, it discusses efforts to develop the industries of developing countries. It then considers some of the features of construction and their implications to the revaluing process in developing countries. A research agenda is proposed before some recommendations are made.

Keywords

Revaluing, Developing countries, Performance improvement, Research agenda, Implementation

INTRODUCTION

The Revaluing Construction programme was launched by the International Council for Research and Innovation in Building and Construction (CIB) in 2001 in recognition of the rapid changes in society and in the expectations of clients, users and the community which were expected to place new demands on buildings and physical infrastructure, and how they are designed, constructed and managed. These developments offer opportunities for the construction industry, as well as problems and challenges, and it is essential to find innovative ways and means to address these.

What does "revaluing construction" mean? To Winch et al. (2003), it has three aspects: (a) generating better understanding of how constructed assets add value to their clients and users (they consider this as involving – spatial quality, indoor environmental quality, symbolism, and financial value as a capital asset for exploitation or sale); (b) developing a more effective capture of the value generated through the project life cycle in terms of profits and learning; and (c) as a result of the two "revaluations," a revaluation of the image of the industry and the way it is perceived by those outside it.

The topics covered by the papers presented at the second CIB conference on Revaluing Construction, held in Rotterdam in March 2005, effectively constitute a research agenda (Southeast Asia Construction, 2005): (a) how changes are being promoted in various parts of the world; (b) how client requirements are creating new business opportunities and drivers; (c) the response of firms to changes in the business environment – with new relationships and modes of working; (d) the ways in which organisations in the operating environment of the construction industry (such as those in the legal, financial and insurance sectors) are supporting and promoting changes; (e) behavioural and cultural changes; and (f) how developments in technology will create pressure to changes.

The revaluing of the construction industry, its activities and its products is directly relevant to the developing countries where the industries need to be developed as a matter of priority in order to improve their performance and prepare them to face their current and future tasks, and challenges for the benefit of



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The aim of this paper is to prepare a research agenda for revaluating the construction industry in the developing countries. The objectives are:

1. to discuss the importance of the construction industries in developing countries at this point in time, and in future,
2. to consider current relevant trends which have implications for these industries, and
3. to suggest a research agenda for the strategies and actions which can be taken to improve the performance of the industries in developing countries in order to enhance their value to the societies in these countries.

The classification of nations as “developing” usually follows the World Bank’s classification by considering the level of per capita national income. The World Bank (2004) defines a “low-income” country as one with a per capita gross national income (GNI) of US\$765 or less in 2003; and a “middle-income” country as one with a GNI of US\$9,385. The low-income and middle-income countries are collectively referred to as “developing countries.” It must be noted that the large number of countries in this categorisation does not form a homogeneous group. There is a wide range of incomes and economic prospects (such as inflation, inflow of direct foreign investment and national debt servicing commitments). There are also differences in the level of development of their construction industries, size of industry, resource endowments, level of technologies being applied, practices and procedures, and operating environment. For convenience, the developing countries are considered in this paper as a group but where relevant, the differences are highlighted.

Importance of Construction in National Development

The construction industry is an important sector of the economy which makes a significant contribution to gross domestic product (GDP), capital formation, and employment (Hillebrandt, 2000); and has backward and forward linkage effects with several other sectors (World Bank, 1984). The industry also contributes to capital formation, and hence its products represent a significant proportion of each nation’s savings. As it produces the nation’s physical infrastructure and other productive assets, the industry is of critical importance in the national development of developing countries.

In most developing countries, the construction industry has failed to play its expected role of providing the basis for socio-economic development, and securing improvements in the living conditions of the citizenry. Thus, backlogs of construction needs continue to build up. The industry has not been “the engine of growth” that it is widely considered to be (World Bank, 1984; Wells, 1986) by stimulating activities in other sectors of the economy. Construction should also: (a) create job opportunities; (b) reduce cost and improve quality to contribute towards making the country an attractive place for foreign direct investment (FDI); and (c) its companies should compete with foreign firms entering the markets in the era of globalisation.

DEVELOPMENT OF CONSTRUCTION INDUSTRIES

Studies of Construction in Developing Countries and Development Efforts

The construction industries of developing countries have been studied since the 1950s. Ofori (2001) presents a history of such studies, noting that the first of these took place in the early 1960s; the United Nations’ Expert

...e for developing the construction industry (Department of
the Economic Commission for Africa (1965) recognised that the
construction industry must be strengthened in order to meet the huge volumes of housing needs in Africa. In
the late 1960s and 1970s, researchers on construction industry in developing countries sought to enhance
the capacity and capability of the industries to facilitate socio-economic development (Ofori, 1993a). For
example, Turin (1969, 1973) hypothesised the role of construction in national development by examining the
relationships between value added in construction and GDP; between capital formation in construction
and gross domestic capital formation; and between employment in construction and the total workforce.
Turin then suggested a strategy for improving the construction industry. Other researchers have tried to build
upon Turin's foundations, and several of them have tested and largely confirmed the relationships between
construction and the economy which he first highlighted (a review in Ofori, 1993a, 1993b).

Comprehensive reviews of national construction industries and their performance have been
undertaken in some developing countries. An example was the study on Tanzania by a group of
international experts (Ministry of Works, 1977) which, among other actions, led to the establishment of the
National Construction Council (NCC) to manage the development of the industry. Another review of the
industry in South Africa also led to the setting up of the Construction Industry Development Board in 2002.

Efforts have been made to improve the performance of the construction industries in many
developing countries (Ofori, 1993b). These have taken many forms but studies show that the industries
continue to face problems including poor cost, time and quality performance; lack of work opportunities;
poor level of professionalism and entrepreneurship; obsolescence of some statutes and codes;
ineffectiveness of implementation of existing statutes and codes; and bureaucracy in formal procedures
relating to project planning and administration. In terms of performance, the industries in developing
countries fall short when compared with other sectors of the economy, as well as with their counterparts in
elsewhere with regard to productivity, quality, safety and health, and environmental performance. Most of
these shortcomings were noted in Tanzania's Construction Industry Policy (Ministry of Works, 2003). Whereas
construction industries in all countries face problems and challenges (Ofori, 2000a, 2001), those in the
developing nations face the additional general difficulties of economic stress, resource shortages, and
institutional and legal weaknesses. These make the task of improving their performance even more
demanding.

Clients, governments and the community are dissatisfied with the performance of the industries, and
the procedures and practices they adopted (Ofori, 1994). Opening the Task Group 29 (TG29) conference in
Gaborone, Botswana in 2000, the country's Minister of Finance highlighted the government's assistance
programmes for local construction firms, including a funding scheme, a training programme and a contract
reservation policy; and then expressed the public client's dissatisfaction with the performance of local
contractors. The performance of the industry in Malaysia has come under public scrutiny following failures on
several large construction projects, including cracks in columns supporting a highway flyover, leading to
road closures and heavy traffic disruption; a hospital which had to be closed a few months after its opening,
because defects in the air-conditioning system led to a serious fungal outbreak; and a major public office
building which is 7 years behind schedule (The Straits Times, 2004; Ahmad, 2004).

Previous Research Agendas

Research continues to be undertaken to develop new knowledge to facilitate the efforts in developing
countries to improve the construction industries. Several research agendas have been proposed. In 1997,
the CIB TG29 on Construction in Developing Countries was established. TG29 became a working commission
(W107) in 2002. The aim of W107 is to help build the body of knowledge on the construction industries in
developing countries, and to develop and disseminate the ideas, tools and techniques which can be
applied to improve the performance and prospects of these industries. The research agenda of W107 upon
its formation comprised:

- b. sustainable construction in the context of developing countries,
- c. safety and health in construction, including community health, especially the relationship between construction and the propagation of HIV/AIDS,
- d. implications of privatisation on construction enterprises and practitioners in developing countries,
- e. merits of a central agency for managing construction industry development and potential of regional groupings of such national agencies,
- f. implications of globalisation on local construction enterprises in developing countries,
- g. application of information technology (IT) for construction in developing countries,
- h. appropriate construction management and economics techniques for developing countries, and
- i. post-disaster reconstruction.

Among other authors who have proposed a research agenda for the development of construction industries in the poorer countries is Ofori (2000b) who considered challenges on facing the industries and presented a research agenda for improving the performance of the construction industries of the developing countries in the light of their resource constraints and administrative weaknesses. At the W107 meeting in Stellenbosch, South Africa, a number of issues were identified as relevant research topics. They included: globalisation, post-disaster reconstruction, gender issues, human resource development, and technology transfer.

Finally, at the W107 meeting in Bangkok, Thailand in 2004, issues highlighted as being of current relevance to the construction industries of developing countries were:

- a. public and private partnership (PPP) in a developing country environment, including equity and efficiency considerations, and technical issues relating to the maintenance and operation of such projects,
- b. business ethics in construction, which is an important topic parallel to the focus of good governance and the need to eliminate corruption in developing countries,
- c. improving housing, particularly social housing which remains a critical issue in the urban areas in developing countries,
- d. effective utilisation of information and communication technology (ICT) which, in developing countries, faces several barriers. Thus, research on this topic should be structured to address different levels of ICT needs and availability of different countries, and
- e. importance of total quality management (TQM) in construction, including involvement of all stakeholders, and effective transfer of the knowledge developed among them.

REVALUING CONSTRUCTION

ective of Developing Countries

Assessing the nature of the construction industries from the perspective of developing countries will help to identify its inherent strengths and problems it poses, and the foundations on which its development can be based. Dubois and Gadde (2002), and Koskela (2003) use the characteristics of construction to analyse aspects of the industry.

The need to build constructed items in the locations where they are required poses managerial issues relating to logistics, the influence of local legal, regulatory and cultural issues, and technical considerations concerning the need to design for, and operate in unfamiliar physical environments. These are usually considered to be problems inherent in construction (Hillebrandt, 2000). However, for developing countries, this location specificity offers many developmental opportunities. First, that built items cannot be imported offers opportunity for local participation in all types and sizes of projects. The limits are imposed by technology and business considerations. Second, as work can take place in all parts of the country, there is a potential for job creation for firms and individuals in construction and allied industries, as well as ordinary citizens, especially given the labour-intensive characteristic of construction activity. This also enables new technology to be diffused to all parts of the country.

Third, the foreign firms which may be involved in a construction project must "act local," and consider the legal, cultural and resource context of the site. There is potential for technological and knowledge flows, as the foreign firms seek to reduce their transaction costs by engaging local business partners and employees, and these local companies and individuals gain from the transfer of technology and enhancement of skills. Fourth, the activities on the projects, and the completed projects, can have a direct impact on the economy. The extent of leakages from the national economy can be limited through conscious policies.

Fifth, the way in which construction work is procured as discrete, limited, and packaged projects, each of which is unique, is viewed as leading to short-term considerations among firms and practitioners in the industry. This hinders investment in technology (such as acquisition of equipment, and research and development), in training, and in other forms of corporate development. The procurement arrangement for the project can take various forms. It typically involves several organisations participating in the project at different stages. This fragmentation is considered to militate against productivity and innovation, and to adversely affect project and team performance, because it is difficult to integrate the contribution of the participants. However, in developing countries, the temporary organisations which are formed to undertake construction projects enable different organisations in all parts of the country to participate in projects.

Finally, construction activity and constructed items can have an impact on public health and safety. This makes it necessary for the regulation and control to be effected. This also is seen as an inhibitor of technology development and innovation in construction (Nam and Tatum, 1988). In the developing countries, most of the statutes and codes date from the colonial era, and many are quite inappropriate to the physical, administrative and technological contexts of the countries. In particular, they are adjudged to be hindering the usage of appropriate materials and technologies. In most developing countries, there is a gap between legislation and implementation owing to institutional weaknesses, and it is important to find ways and means of bridging this gap. However, in developing countries, the need for regulation and control again offers an opportunity as it enables the government to take charge of the industry, set standards, and take action to facilitate the realisation of what must be done if the industry is to be able to attain the stated requirements. In some countries, the regulation has extended beyond technical requirements. For example, Tanzania's Public Procurement Act 2004 (Government of the United Republic of Tanzania, 2005) seeks to establish good governance on public projects. While the trend towards deregulation and policy liberalisation everywhere is welcome, many aspects of construction must remain under governments for public health and safety reasons. Thus, appropriate policies and administrative frameworks must be adopted in each country to make the government an enabler. To achieve this, governments must be



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s of their construction industries.

Previous research on the utilisation of local resources has concentrated on materials and techniques (Ofori, 1993a). This should be extended. Two relevant issues are those of culture, and financing. Each developing country has a range of distinct cultures. These should influence, and be reflected in, the way in which the construction industry operates. Thus, firms in developing countries can utilise the features of their culture to develop longer-term strategic alliances, and to secure the integration of the contributions of project participants.

In most developing countries, individual construction clients are unable to obtain financial assistance from the banks to invest. However, with the common human desire to satisfy the basic need of housing, individuals find practical ways to organise funding for their housing units. Community leaders are also able to mobilise funds for social development projects, through donations, contributions by members of the community, or fund-raising events. It is necessary for the construction industry to understand, further develop and utilise these funding systems, and seek to work well in such circumstances.

Globalisation and Private Sector Participation

Globalisation is relevant to construction in developing countries. First, at the level of the broad economy, as the World Bank (2004) advises, these countries should improve their investment environments in order to position themselves to benefit from globalisation. Second, many of the constructed items which such nations need for their socio-economic development are beyond the capacity and capability of local industries to undertake; owing to the size, novelty and complexity of those projects. Therefore, foreign firms play a significant role in the developing countries. It is estimated that foreign contractors and consultants have about 70% share of the construction market in Southern Africa (Ofori, 2001). Muhegi and Malongo (2004) estimate that foreign contractors, which constitute 4% of registered contracting firms in Tanzania, undertake more than 80% (by value) of projects in that country.

The prospect of the transfer of technology from foreign firms to aid the development of the construction industries in developing countries is often highlighted (Moavenzadeh and Hagopian, 1984; Abbott, 1985). However, measures adopted by many countries to achieve such transfer, including making joint ventures between local and foreign contractors mandatory and requiring that minimum proportions of projects be sublet to local firms, have not been successful (Carrillo, 1994; Ofori, 1996). Tanzania's Public Procurement Act 2004 provides local firms to participate in all public-sector projects, and for them to be offered the tendering preferences.

Another aspect of globalisation is the participation of the private sector in public projects. The World Bank's (2004) data show an increasing trend of such participation in infrastructure projects in developing countries. Many countries see this as an opportunity to meet their construction needs for budgetary and other reasons (Ministry of Finance, 2004). However, developing countries lack the framework and expertise for ensuring the success of privatised projects. For example, the governments of the developing countries cannot conduct a proper evaluation of privatised projects, nor assess their risks from such projects.

Thus, globalisation and its consequences offer advantages for construction industries in developing countries to develop their capacities, capabilities and prospects for the future. They also pose problems and challenges. It is necessary to reviews previous and existing measures in various countries, and develops proposals of new thinking by firms from both the developing and industrialised countries, and novel enabling frameworks from governments; and hence, opportunities for targeted research. Moreover, as Ofori (2004) suggests, efforts should be made to educate developing country authorities on privatised projects; and to undertake research on the risks faced by developing country clients and consumers on privatised



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Project Procurement and Administration

The industry structures, systems, practices and procedures in the developing countries remain those which were introduced by the former colonial countries, although they originated from a response to cultures, value systems, and market imperatives which are different from those of the developing countries. Moreover, major changes have been made in the industrialised countries. For example, developing countries which are former British colonies mainly use standard forms of contract which are similar to, or the same as, the 1973 edition of the Joint Contracts Tribunal form; and many public-sector forms of contract remain those drafted by the colonial architects and engineers.

The project procurement and administrative arrangements used in construction determine the documentation, procedures and practices in the industry, the roles of the participants, and the relationships among them. Again, there have been much changes in the countries of origin of the procurement methods. For example, in the United Kingdom, Latham (1994) advocated the building of trust and a spirit of partnering in an industry which is characterised by mistrust and adversarialism. Thus, in the UK, there is an active search for models favouring strategic long-term relationships among participants. Moreover, the more adversarial and legalistic procedures, such as arbitration and litigation, are being replaced with adjudication and alternative dispute resolution modes. Rwelamila et al. (1999) found that in some Southern African countries, failure to consider the culture of the nations in choosing project procurement arrangements contributes to the poor performance on construction projects. Liu and Fellows (1999), and Ang and Ofori (2001) suggest that the culture of "the East," and China in particular, are conducive to the successful application of partnering in construction. Thus, there is scope for research on suitable project procurement and administration arrangements in developing countries. As culture is unique to particular groups of people, efforts should be made to devise practices, procedures and relationships which are suited to the culture of each country; and thus, facilitate measures to improve performance on projects.

RESEARCH AGENDA

Procurement

The developing countries should develop and apply appropriate procurement systems which suit their culture and business traditions. Research should be undertaken on a set of criteria for contractor selection including price, which is suitable for the context of each developing country. Given the nature of the culture of most developing countries, where trust and goodwill are valued, partnering appears to have scope in these countries, as business relationships in the construction industries are, as yet, less adversarial than in the industrialised countries.

In order to reflect culture in project procurement and management, there should be research studies on the culture of construction and construction-related firms, projects and workers in each developing country. The findings would: (a) help project managers to integrate the contributions of the participants; (b) reveal incentives and actions which can steer construction firms to deliver the best possible product; (c) help managers in contracting and consultancy organisations to understand how to communicate with, and motivate, their workers; and (d) provide insights into the most effective way to transfer technology to local construction firms.

Project Management

The industries in developing countries should develop mechanisms to enable them to continually monitor trends in the industrialised countries and to draw lessons from them. Ways of doing this most effectively must

Identify the new developments, adaptation of the new concepts in the developing countries, and monitoring of the results of the application of these measures. The way in which projects are managed should also be studied from a fundamental viewpoint in order to find better approaches in the circumstances of the developing countries.

The approach of the evaluation of project feasibility in developing countries should be reconsidered. In these countries, the concept of land value is bound up in the cultures of the different peoples. Thus, the imputation of value should be based on a different set of issues. Moreover, the majority of the populations of these countries earn their living from the land. Thus, the impact of development projects should be assessed by determining and taking into account the concerns, and aspirations of as wide a constituency of stakeholders as possible. These will avoid the current situation where several major infrastructure items, such as dams, have been the subject of much controversy and public protest. In most countries, environmental impact assessment of all major construction projects is a mandatory requirement. Whole life-cycle assessment should be a common approach to project evaluation. Other approaches which should be part of the development project include value management. A method of project assessment which combines these concepts should be developed.

The project planning and implementation process should include an exercise to align the interests of construction project stakeholders. A workshop involving the key project participants could explore the objectives and motivations of all the stakeholders, and find ways of meeting them.

Developing countries should build up capacity among public administrators in the evaluation and management of construction project implementation, especially that of privatised works. Managerial and technical expertise should also be built up to enable local firms to operate the privatised projects upon their transfer to the government at the end of the concession period.

Industry Development

Corporate development is a key issue in developing countries, and the availability of suitable work opportunities is important. Local construction firms should be enabled to participate in as wide a range of the projects undertaken in their home markets as possible. Research into the most appropriate approach to the development of this capability in each country is required. Innovative schemes will be necessary, and involving the potential beneficiaries in the design of the programmes would help.

Institution building is also relevant. The best mechanism for administering the development of the construction industry in each country should be found. Developing countries adopt different approaches here. A few of them have agencies dedicated to this task such as the National Construction Council of Tanzania (formed in 1982); Building and Construction Authority, Singapore (set up in 1984); Construction Industry Development Board, Malaysia (established in 1994); and Construction Industry Development Board, South Africa (set up in 2002). Some of these organisations have made progress but the, as yet, small number shows that developing countries are not convinced that they are beneficial. Research should be undertaken on the merits and disadvantages of such central agencies.

The construction industries in the developing countries should form effective professional institutions and trade associations with a progressive agenda. Also worth considering is the formation of umbrella organisations embracing these institutions and associations to play a championing role in the development effort, and to speak with one voice in representing the industry's needs and concerns to the government. An example is the Construction Industry Joint Committee in Singapore. Research should also be undertaken on how to form international groups of the construction industries within geographical regions to share experiences and ideas, and develop mutually beneficial programmes for improving the performance of the individual industry.

The developing economies should target their investments in education and training at the best programmes aimed at producing professionals, technicians and skilled tradespersons suited to deliver the best possible projects in the context of the country. Research on national plan for construction human resource development in each country is required; the strategy. The studies should develop the relevant curricula, based on a review of models and recent developments elsewhere. For example, UK introduced four-year engineering degree programmes a few years ago. Research should also determine how developing countries can institutionalise continuous learning to ensure that practitioners as well as administrators improve and maintain their knowledge; and how firms can adopt a strategic approach to human resource management.

Efforts should be made to further enhance the relationship between the construction industries and the universities which are currently strong. Research on how this linkage can be strengthened should be undertaken. The establishment of a research and development (R&D) network; industry think tanks; and establishment of an industry-based scholarship scheme for undergraduate and graduate education could also be studied. An example of such an R&D network is the Competitive Building Programme in Sweden, Norway and Denmark under which leading construction and client organisations sponsor employees to study for research-based graduate degrees at top universities.

CONCLUSION

The construction industries of developing countries must be improved as they are of critical importance to national socio-economic development. These industries have failed to meet the expectations of governments, clients and society as a whole. A comprehensive research programme is necessary to facilitate the development of appropriate policies and strategies for improving the performance of the industries. W107 is in a position to lead, and monitor this programme. Effective dissemination of the results of the research is also necessary. W107 must find suitable channels of communication with the implementing agencies in the various countries.

It should be acknowledged that the proposals and recommendations to be applied in each country must be country-specific, and take into account of the cultural and resource contexts, as well as the governmental mechanisms and the business networks. However, the countries can learn from each other's experiences. Thus, periodic meetings to share experiences under the aegis of W107 would be useful.

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E-mail: bdgofori@nus.edu.sg

REFERENCES

- Abbott, P.G. (1985). *Technology Transfer in the Construction Industry*. London: The Economist Intelligence Unit.
- Ahmad, R. (2004). KL fines contractor \$35m for project delay. *The Straits Times (Singapore)*, October 23, p. 21.
- Ang, Y.K. and Ofori, G. (2001). Chinese culture and successful implementation of partnering in Singapore's construction industry. *Construction Management and Economics*, 19: 619–632.
- Carillo, P. (1994). Technology transfer: A survey of international construction companies. *Construction Management and Economics*, 12: 45–51.
- Department of Economic and Social Affairs (1962). *Report of the Ad-Hoc Group of Experts on Housing and Urban Development*. New York: United Nations.

- ational construction system. *Habitat International*, 25(1): 69–79.
- construction industry as a loosely coupled system: Implications for
productivity and innovation. *Construction Management and Economics*, 20: 621–631.
- Economic Commission for Africa (1965). *Housing in Africa*. New York: United Nations.
- Edmonds, G.A. and Miles, D.W.J. (1984). *Foundations for Change: Aspects of the Construction Industry in Developing Countries*. London: Intermediate Technology Publications.
- Government of the United Republic of Tanzania (2005). *The Public Procurement Act 2004*. Dar es Salaam.
- Hillebrandt, P.M. (1999). Problems of larger local contractors: Causes and possible remedies. Paper presented at Second Meeting of CIB TG29, Kampala, Uganda, 25–26 June.
- _____. (2000). *Economic Theory and the Construction Industry*, 3rd Edition. London: Macmillan.
- Koskela, L. (2003). Is structural change the primary solution to the problems of construction? *Building Research and Information*, 31(2): 85–96.
- Latham, Sir M. (1994). *Constructing the Team*. London: Her Majesty's Stationery Service (HMSO).
- Liu, A.M.M. and Fellows, R.F. (1999). The impact of culture on project goals. In Ogunlana, S. (ed.). *Profitable Partnering in Construction Procurement*. pp. 523–532, London: E & FN Spon.
- Ministry of Finance (2004). *Public Private Partnership Handbook: Executive Summary*. Singapore: Ministry of Finance.
- Ministry of Works (1977). *Local Construction Industry Study*. Dar es Salaam.
- _____. (2003). *Construction Industry Policy*. Dar es Salaam.
- Moavenzadeh, F. and Hagopian, F. (1984). The construction industry and economic growth. *Asian National Development*, June/July, pp. 56–60.
- Muegi, B. and Malongo, J. (2004) Globalisation: A challenge to developing countries. Paper presented at International Symposium on Globalisation and Construction, Bangkok, Thailand, 17–19 November.
- Nam, C.H. and Tatum, C.B. (1988). Major characteristics of constructed products and resulting limitations of construction technology. *Construction Management and Economics*, 6: 133–148.
- Ofori, G. (1993a). Research in construction industry development at the crossroads. *Construction Management and Economics*, 11: 175–185.
- _____. (1993b). *Managing Construction Industry Development: Lessons from Singapore's Experience*. Singapore: Singapore University Press.
- _____. (1994). Practice of construction industry development at the crossroads. *Habitat International*, 18: 41–56.
- _____. (1996). International contractors and structural changes in host-country construction industries: Case of Singapore. *Engineering, Construction and Architectural Management*, 3(4): 271–288.
- _____. (2000a). Challenges for construction industries in developing countries. *Proceedings of the Second International Conference of the CIB TG 29*, Gaborone, Botswana, November, pp. 1–11.
- _____. (2000b). Globalisation and construction industry development: Research opportunities. *Construction Management and Economics*, 18: 257–262.
- _____. (2001). Challenges facing the construction industries of Southern Africa. Paper presented, Presented at Regional Conference: Developing the Construction Industries of Southern Africa, Pretoria, South Africa, 23–25 April.
- _____. (2004). Construction project risks from perspective of developing countries. *Proceedings of the Annual Conference 2004 of King's College London*, 1–2 July, Vol. 1, pp. 44–59.
- Rwelamila, P.D., Talukhaba, A.A. and Ngowi, A.B. (1999). Tracing the African project failure syndrome: The significance of 'ubuntu.' *Engineering, Construction and Architectural Management*, 6(4): 335–346.
- Shakantu, W., Zulu, S. and Matipa, W.M. (2002). Global drivers of change: Their implications for the Zambian construction industry. *Proceedings of the First CIB W107 International Conference*, Stellenbosch, South Africa, 11–13 November, pp. 133–143.
- Southeast Asia Construction (2005). *Revaluing Construction*, January/February, pp. 37.
- The Straits Times* (Singapore) (2004). Samy Vellu under siege over shoddy projects, October 16, p. A1.
- Turin, D.A. (1969). *Construction and Development*. London: Built Environment Research Unit, University College London.
- _____. (1973). *The Construction Industry: Its Economic Significance and Its Role in Development*, 2nd Edition.



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..., University College London.
Developing Countries: Alternative Strategies for Development.

London: Greenleaf.
Winch, G.M., Courtney, R. and Allen, S. (2003). Editorial: Re-valuing Construction. *Building Research and Information*, 31(2): 82-84.

World Bank (1984). *The Construction Industry: Issues and Strategies in Developing Countries*. Washington D.C
World Bank.

_____. (2004). *World Development Report 2005: A Better Investment Climate for Everyone*. Washington, D.C:
World Bank and Oxford University Press