Chapter 11
Challenges Facing Building Construction in Developing Countries

Chrispin Pettang
University of Yaoundé I, Cameroon

Marcelline Blanche Manjia
University of Yaoundé I, Cameroon

F. Henry Abanda
Oxford Brookes University, UK

ABSTRACT
It is now well-established that the industry faced enormous challenges. To overcome these challenges and hence improve efficiency and productivity requires a deeper understanding of the challenges. In this chapter, the main challenges related to construction material and equipment, man-power and management will be examined. The consequences of these challenges which often lead cost overruns and delays will be discussed. The aim of this chapter is to provide a deeper understanding of these challenges so as to inform the choice of the decision support systems to be used in the subsequent chapters.

INTRODUCTION
The construction industry has a long standing history of being inefficient. While progress has been made in developed countries, a lot still needs to be done the developing to improve efficiency in the delivery of projects. In the developing countries, the challenges faced by the construction industry are enormous and contributes to this inefficient outcomes of project delivery. The objectives of this chapter are threefold. First, the challenges faced by the construction industry in developing countries are examined. Second, the implications of the challenges vis-à-vis cost overruns and delays are discussed. Third, the relation between challenges and implications are examined with regards to laying the foundation to a decision-making problem.

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BACKGROUND

There are many challenges facing the construction industry in developing countries. While innovative technologies have been invented by the developed countries to overcome these challenges, the problems facing the construction industry in developing countries are significantly more complex, and cannot be solved by some new inventions only. Some of them are historical problems deeply rooted and need time and determination to be solved. In developing countries, especially in the informal sector, the sources of such challenges facing the construction industry are bad practices related to materials supply and equipment supply, manpower management, funding means, planning and control methods. It is therefore not surprising that, the construction industry in developing countries is characterised by low quality of construction projects, economic instability and a substantial inertia in use of modern materials and techniques. These problems have not been addressed by the governments because of poor executive capacity, lack of resources, lack of commitment and neglect of the informal sector of the construction

MATERIALS AND EQUIPMENT RELATED CHALLENGES

Concerning materials, the good quality of materials is essential in achieving a construction project (Caldas et al., 2014). As example, the use of machines could save execution time and potentially lead to a reduction in costs. However, uncertainties in materials supply can increase costs because of speculation, especially during shortage. In developing countries, building materials suppliers are from both the formal and the informal sector. The local materials including gravels, sand, and wood are offered by the informal suppliers, and imported materials including steels, cements, paintings, or sheet metal, are offered by the formal suppliers. There are some major problems facing the building materials supply in developing countries: 1) the imported materials are very expensive, partly due to the transportation fees; 2) on the contrary, the quality of some of local materials is quite disputed. They are perceived in the majority of cases as poor by the population; 3) the late delivery of materials and frequent shortage, partly due to budget constraints are observed in materials’ supply. Therefore, it becomes imperative to set a procurement policy based on the combination of the four criteria in the ensuing paragraph:

- **The Best Price and High Quality Assurance**: the risk for the company is to exceed its projected expenditure, and to see its profits decline;
- **The Availability and Quantity Control**: the provider must be able to ensure that quantities are those which have been ordered. In addition it must be able to meet all orders, with an inexhaustible stock of materials;
- **Adequate Delivery Program**: It is important to deliver materials at the right time. If the materials’ delivery comes very earlier, it could cause additional costs for the company, including the need of more space for storage, and the risk of theft. If the materials supply comes very late, it could have a negative impact on the construction schedule.
- **The Criterion of the Supplier’s Responsibility**: the supplier must be able to justify and to respond for his actions. To assess this, some parameters are regularly taken into account including historical supplier performance, his financial stability, his organizational structure, and his business references.
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