UNIVERSITY OF CAMBRIDGE
Department of Engineering

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

Manufacturing Location Decision Making: How to Know Where to Go?
A Proposed Decision Making Framework and Case Study of the Precast Concrete Buildings Market

The construction industry is one of the world's largest, currently estimated to account for 13.4% of global GDP and projected to account for 14.6% by 2020. Growth in the industry over the last decade has seen the uptake of off-site manufacture thrive, and it is likely to continue to do so, fuelled by pressures to deliver more sustainable, affordable and better quality buildings and infrastructure.

Today many companies around the world operate in more than one country. In the context of construction companies these operations can include project delivery, manufacturing or a combination of the two. For a manufacturing centric construction company important decisions therefore need to be made as to the location of manufacturing facilities. However traditional production location decisions are mainly based upon economic factors whilst intangible or non-economic factors are often overlooked.

The literature reviewed in this thesis has identified the shortage of a valid and reliable means by which to identify and assess critical factors that need to be considered when making manufacturing location decisions. This thesis attempts to bridge this gap by addressing the following research questions;
1. What are the factors that need to be considered when making manufacturing location decisions?
2. How do decision makers identify which factors align with their business objectives?
3. How are factors assessed to yield an informed positive location decision?

Within this thesis study the author proposes a decision making framework and carries out a case study surrounding the manufacture of precast concrete for the building sector.

Raj Kotecha

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