

RESEARCH BRIEF

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Singapore Government's Policy to Diffuse Prefabrication to the Private Sector

The Singapore construction industry has recently undergone low productivity and negative growth. Facing this problem, continuous governmental efforts have been made by introducing new policies to enhance construction performance. Prefabrication has emerged as one of the solutions to the industry problems. However the attempts in diffuse prefabrication were unsuccessful in the private sectors.

OBJECTIVES

This research aimed to find an effective way of implementation of the Singapore government's policy to diffuse prefabrication to the private sector. The research objectives are:

- To develop a model for construction policymaking.
- To recommend strategies for the diffusion of prefabrication technology to the private sector in Singapore through the proposed model.
- To identify factors that limit the practice of prefabrication technology by the private sector.

MAJOR FINDINGS

The system Dynamics modelling approach in this research found important and counter-intuitive policy implications. The main findings are:

- If the government continues the current effort to decrease dependency on foreign labour by regulating the number of foreign workers and moderating the demand for them (although it was originally made for enhancing the industry's competitiveness), the use of prefabrication could be increased as well. In addition, the Singapore government needs to be consistent in executing the foreign labour control policies, even if the industry loses its cost competitiveness for the time being.

- Progressively raising the required minimum buildability score could lead to higher use of prefabrication with a less time delay than in the foreign labour control policy. However, the increased use of prefabrication for relatively shorter time periods could result in initial quality problems. Thus, the government has to continue encouraging the private sector to establish the infrastructure required for prefabrication. The government also needs to support infrastructure building and skill enhancement for construction professionals.
- Encouraging design-build contracts for private projects does not seem to increase the use of prefabrication by the private sector. Instead, further increasing the current ratio of design-build for public projects is likely to contribute to increasing the use of prefabrication for private projects by establishing prefabrication infrastructure. In addition, the government needs to continue its effort to increase the perceived advantage of prefabrication by providing financial incentives.
- Once the level of prefabrication increases, the diffusion of prefabrication would be facilitated by economy of scale, established infrastructure, and design diversity.

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