ABSTRACT

The 1991 Strategic Economic Plan had alarmingly highlighted the comparatively low productivity of the local construction sector. The 1992 Construction Productivity Taskforce had attributed the low productivity of the local construction industry mainly to its visibly low technology image and acute employment of a large number of foreign workers. Comparing site labour productivity level by using the indicator of 'square metre of built-up area per manday', it has been found that Japan's construction industry is 30 percent more productive than Singapore's construction industry, while a highly industrialized country like Finland is 60 percent more productive than Singapore. It is therefore of crucial concern that productivity in the local construction sector be increased if Singapore is to export her construction services to emerging regional economies and join the realm of developed nations by the year 2030.

Following the work of Lim and Low (1992) who examine the feasibility of using the established 'Just-In-Time' (JIT) concept from the manufacturing industry to raise productivity in the construction industry, this research work seeks to further explore the feasible applications of the JIT concept to improve productivity in the 'off-site' prefabrication of precast concrete components. In accomplishing this objective, an industry-wide exploratory study was conducted in 1993 covering 20 local prefabrication firms. The opinion research methodology (comprising survey questionnaire and personal interview) used achieved a response rate of 70 percent (14 respondent firms). In addition to determining the feasibility of JIT application in the local prefabrication industry, this research work also aims to develop a viable JIT-based framework to guide the industry towards boosting its productivity.
Based on the research findings in the light of the JIT philosophy's eight fundamental principles, it was found that there is indeed vast potential for applying the JIT concept to improve productivity in the local prefabrication industry in accordance with the research hypothesis.