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Using linear model for learning curve effect on highrise floor construction

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Abstract

The evolution of repetitive scheduling methods led to the introduction of the learning concept in construction planning. It is common knowledge that performing the same activity repeatedly, and in the same conditions, takes less and less time as the activity is repeated (Gates and Scarpa, 1972). This phenomenon is clear in many construction activities and is known as learning experience or learning effect. The increase in productivity is mainly due to the increasing knowledge acquired by work repetition. Graphic representation is through a learning curve that admits duration decreases as the activity is repeated, according to a predictable and constant learning rate. The Linear Model of logarithmic coordinates ($\log_{10}Y = \log_{10}A - n\log_{10}X$) was applied to two repetitive construction processes, frequently used in Portuguese construction. The intent was to examine its applicability and efficiency in predicting future performances, and the interest in incorporating the model in new planning methodologies for repetitive construction. In both cases, learning processes were created.

Keywords:

Learning effect | learning curve | linear model | planning construction | models | repetitive construction

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