



HOW MUCH WILL YOUR NEW HIGH-RISE COST?

'Twenty per cent of the elements account for 80 per cent of the total cost.'



The cost of building is a critical issue for construction companies as they tender for jobs.

How accurate are construction estimates? And which elements – the floors, the walls, the foundations – contribute most to the eventual cost?

These are important questions says Deakin construction management PhD student Ivy Blackman, who is developing a model to look at the accuracy of cost estimation in construction.

And the answers may assist bidders for large-scale construction projects to more accurately estimate the projected cost before tendering.

Ivy plans to analyse the 'Bill of Quantity' – a standard document used during the tendering phase of a construction project to itemise the materials, parts and labour and their associated costs – to identify which elements of a high-rise building comprise the majority of the costs involved. "Typically, a small proportion of the elements will account for the majority of the costs," Ivy says.

"I am basing my model on the Pareto Principle, which is also known as the 80-20 rule, that is, the idea that 20 per cent of the elements account for 80 per cent of the total cost," she explains. "While the ratio may change slightly, the principle should hold."

Initially, Ivy will look at which elements typically account for the majority of the cost to work out the appropriate ratio for her model. She hopes to have data from the construction of enough high-rise buildings in a major metropolitan region such as Melbourne to be able to analyse the data for statistical significance.

Then she will apply her model to the data to test its validity. The pre-tender cost estimates will also be compared to the final costs of construction, to see how close the two figures are.

"Ultimately," says Ivy, "the model should be applicable to a wide range of construction projects, not just high-rise residential buildings."

"Our model will increase the accuracy and efficiency of cost estimation for the construction industry," Ivy says. "It's also a good teaching and learning tool for a construction management education program."

High rise construction is likely to follow the Pareto Principle – 80 per cent of the cost arises from 20 per cent of the components. Image: David Iliff, shared under licence (<http://creativecommons.org/licenses/by-sa/3.0/>)

Ivy Blackman

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