SUMMARY

At the onset, there had been an observation of the lack of utilization and even the limited emergence of technological innovations and advances within the construction industry, as measured up with the banking and manufacturing industries. This was so despite the highly and extremely technological environment of the industry. Moreover, it was believed that the mere essence of technology existence was to improve performances. Because of this observation, this dissertation was motivated to examine the relationship between technology utilization and project performance in the construction. Basically, this dissertation aimed to provide grounding for the existence of the relationship. If proven that technology utilization improves project performance, this dissertation would promote technology utilization within the construction industry.

This dissertation specifically investigated the relationship between the sophistication level of formwork technologies representing technology utilization and the formwork unit cost representing project performance. It was hypothesized that there will be a significant and inverse relationship between technology utilization and project performance. A higher sophistication level will turn out a lower unit cost.

A sample of twenty-four cast-in-place concrete construction projects with combined structures of beams, slabs, columns and walls was used. Thirty-three competent and expert survey respondents subjected a total of eleven different formwork technologies to technology rating of its sophistication level.

A series of linear multiple regression analyses was performed to test the significance and inversion of the relationship between the sophistication levels and their unit costs. Although the results proved a significant relationship between the sophistication level and unit cost, it also showed a direct relationship.

This dissertation discussed a challenge of technology emergence; on providing grounds for new and emerging technologies within the construction industry;
methodological and procedural development of sophistication-rating index for construction technology evaluation and assessment; implications on technology acquisition by construction firms and technology design development by construction technology innovators and designers; and uplifting and promoting technology utilization within the construction industry.

It is hoped that this dissertation still serves as a reference point for future studies of the relationship between technology utilization and project performance in the construction.