

## Abstract

Facilitating the adoption of software process improvement methods in the English-speaking Caribbean: A simplified process assessment framework

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Organizations now rely increasingly on information systems (IS) to support business processes and mission-critical systems, and enhance their competitive positioning. This development has challenged the IS community to deliver higher quality business applications with the required functionality and reliability. Many scholars believe that careful analysis and design of the IS delivery process is the most impactful of all the factors that influence IS quality. This view is largely responsible for the popularity of software process improvement (SPI) methods.

Most SPI approaches are designed for larger IS delivery projects that are typically associated with developed countries. Small enterprises in developing countries such as those in the English-speaking Caribbean (ESC) have not adopted SPI initiatives, mainly because of the high cost and complexity of implementing such programmes. In a two-stage research, this thesis sought to: (1) use the nominal group technique (NGT) to simplify a popular and well established software process improvement framework, the Capability Maturity Model Integration (CMMI), to increase the likelihood of its adoption within the ESC, and (2) validate the simplified process assessment framework and the resulting research model using structural equations modelling (SEM) techniques.

The research which was conducted in Barbados, Guyana, Jamaica and Trinidad & Tobago, validated our proposed simplified framework and confirmed both the *a priori* notion that people, technology and process contributed to IS quality and the belief that, of the three, process was the most influential. These results are useful to both researchers and practitioners. The former can adapt and use this research model for further study in this area and the latter, particularly in small organizations in developing countries, can now employ this simplified framework to cost-effectively implement SPI programmes.

**Keywords:** Capability Maturity Model Integration (CMMI), IS quality, IS success, PLS/SEM, Simplified CMMI, Software Process Assessment Framework, Software Process Improvement, SPI in Small Firms, SPI in the English Speaking Caribbean