Effort Estimation in Agile Software Development: An Empirical Study in the Sri Lankan Context

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In responding to the dynamic business environments, most software development organizations have shifted towards the practice of agile methodologies, due to their capability in undertaking change in requirements. Accurate and reliable effort estimates usually assist effective project planning. Effort estimation in agile software development differs from traditional approaches due its iterative nature. In this survey-based study, the main objective is to assess the status of effort estimation by agile software development teams in Sri Lanka. Hence, the investigation focuses on finding out the widely adopted agile effort estimation techniques, effort predictors, accuracy level of each technique, and the factors affecting estimation accuracy. The data was collected from software industry professionals using an online questionnaire and was statistically analysed. According to the results obtained, "Expert Judgment", "Planning poker", and "Use Case point" are the most used effort estimation techniques among Sri Lankan agile teams, and it was evident that "Expert Judgment" is the most accurate effort estimation technique among them. Further, a conceptual model on the effect of cost drivers on the accuracy of the effort estimation was proposed based on the results of correlation and linear regression analysis.

Keywords: *agile software development, software estimation, effort estimation, effort estimation techniques*