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# When May the Accuracy of Expert Estimation Be Improved by Using Historical Data?

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**Abstract**— As expert estimation is the estimation strategy most frequently applied to software projects today, it is important to focus the research on effort estimation methods on it. This is the estimation method used in Agile contexts so we are interested in deeply understanding the value of historical data in this context, in particular when the project domains and the technological environments are new to the team, and when the teams -with little experience in Agile contexts- have recently been created. We designed an empirical study in order to find out when the accuracy of expert estimation made in a context of agile software development may be improved by using historical data. Our empirical study has shown that the use of historical data may improve the intuitive expert estimation method under the following circumstances: when the work experience, the experience in the technologies to be used to develop the application, and the experience in a given domain is low, as well as when the team velocity is unknown.

**Keywords**—*Expert, Expert Estimation, Effort Estimation, Empirical Study, Historical Data.*

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