

## **ABSTRACT**

### **TIME AND COST CONTROL OF A CONSTRUCTION PROJECT IN WEST JAVA USING THREE-VARIANCE APPROACH**

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Good planning and controlling is one of project's key success factors. When executing a project, time and cost are two of many aspects that require careful inspection in project controlling. Earned Value Method (EVM) is one of methods that has been used to control project time and cost. This method takes both cost and schedule variance into account. They are measured in monetary units. However, it is improper to use monetary units to determine time aspect. Otherwise, the result of schedule variance in EVM is difficult to be asserted because there is no separation between work and time. Three-Variance Approach (TVA) is a development from traditional EVM. TVA uses three-variance; cost variance, time variance, and work variance. The measurement of cost and work are still conducted in monetary units, meanwhile the measurement of time uses time units. This research analyzed the use of EVM and TVA, and compared the result from those methods. This research also aimed to identify the strengths and problems that may arise when using TVA as project controlling method. The data used in this research are from construction building project. Bill of quantity, time schedule, project reports, and project cost data are gathered for analysis. The result then be gathered in three different categories; project status, forecasting, and trend. Project status determine the condition of the project in each period. Forecasting enables one to estimate the final condition of a project. The improvement of project condition from a period to the next period can be seen in trend. Based on the research conducted in a case study at a construction project, TVA can give more information about time and work, meanwhile cost information is same with EVM. The shortcomings when using TVA are visualization of the trend is difficult to see in the three-dimension graph, and there is no commercial software to calculate TVA, but EVM has already been in many project management software.

**Keywords:** Cost Controlling, Time Controlling, Earned Value Method, Three-Variance Approach.