

## PROJECT SCHEDULING EVALUATION USING THE PERT (PROGRAM EVALUATION AND REVIEW TECHNIQUE) METHOD FOR THE RECONSTRUCTION OF THE BUARENO – KEDUNGREJO ROAD IN BOJONEGORO

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### ABSTRACT

The Program Evaluation and Review Technique (PERT) method is one of the project scheduling techniques designed to address the uncertainty of activity durations. In this study, PERT is used to analyze the probability of completing the reconstruction project of Jalan Baureno – Kadungrejo, Bojonegoro, which has experienced significant delays from the original schedule. PERT allows for the estimation of project completion time based on three main parameters: optimistic time, most likely time, and pessimistic time. Through this probabilistic approach, the estimated project completion time (expected time), standard deviation, and variance of the project's critical path are calculated. The analysis results show that the use of the PERT method provides important information regarding the possibility of project completion within a certain timeframe and helps in formulating strategies to mitigate the risk of delays. In addition, this method has also proven effective in rescheduling the project based on the level of confidence in its successful completion. The application of PERT in this research provides a realistic picture of the management of complex and dynamic project timelines, and supports more measurable managerial decision-making in construction projects.

**Keyword:** PERT, Project Scheduling, Time Uncertainty, Probability, Road Construction.

### 1. INTRODUCTION

Construction project planning is one of the main pillars in project management aimed at directing the execution of work to align with time, quality, and cost objectives. In practice, various obstacles and challenges often arise that cause project implementation not to always go according to plan (Artigues, 2025). Delays, uncertainty in activity durations, design changes, and dynamic field conditions present unique challenges for project implementers. In this context, the selection of the appropriate scheduling method is crucial for the success of a project, especially construction projects that have complex, non-repetitive characteristics and depend on many unpredictable variables (García et al., 2017).

One of the scheduling methods long known in project management is the Program