

***ANALYSIS OF HEAVY EQUIPMENT UNIT COSTS BASED ON
DAILY PRODUCTIVITY IN PROJECTS (CASE STUDY: STADIUM
CONSTRUCTION PROJECT FOR PORPROV DUMAI CITY PHASE
I YEAR 2024)***

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ABSTRACT

this research analyzes the unit cost of heavy equipment based on daily productivity in the construction project of porprov stadium in dumai city phase i, 2024. the heavy equipment studied includes excavator pc 210, vibro roller, wheel loader, and dump truck. the research method uses a quantitative approach with primary data collection (observation, interviews) and secondary data (project documents, equipment specifications). the results show the highest daily productivity was achieved by the excavator (2,062.48 m³/day), followed by vibro roller (626.48 m³/day), dump truck (119.6 m³/day), and wheel loader (68.32 m³/day). the daily operational costs for each equipment were rp6,046,142.4 (excavator), Rp.13,087,713.04 (dump truck), rp5,815,610 (vibro roller), and Rp. 4,069,277.52 (wheel loader). the total costs for site clearing and excavation reached Rp. 25,607,804.83, for spreading and compaction Rp. 3,117,532,795.59, and for gravel backfilling Rp. 45,769,015.78. this study emphasizes the importance of optimizing heavy equipment productivity and costs in large-scale construction projects. the findings can serve as a reference for contractors in budget planning and equipment management, as well as improve the efficiency of similar projects in the future.

Keywords: Heavy equipment, productivity, operational costs, construction project, Porprov Stadium