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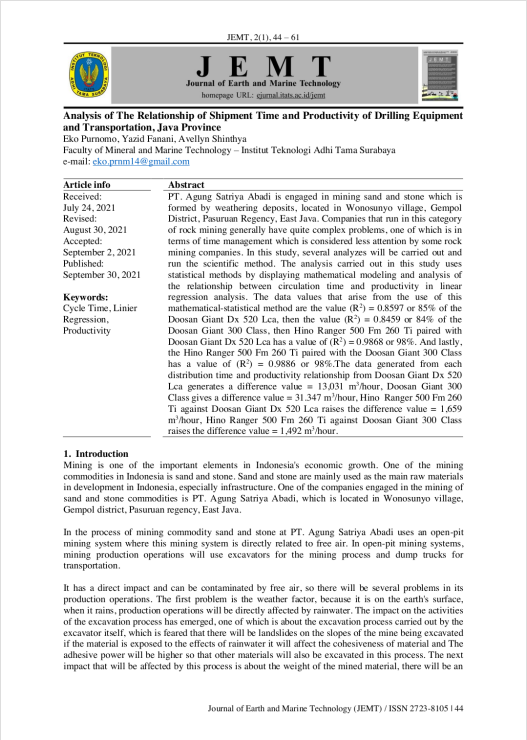

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Analysis of The Relationship of Shipment Time and Productivity of Drilling Equipment and Transportation, Java Province

Eko Purnomo, Yazid Fanani, Avellyn Shinthya
Faculty of Mineral and Marine Technology – Institut Teknologi Adhi Tama Surabaya
e-mail: eko.prnm14@gmail.com

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Abstract

PT. Agung Satriya Abadi is engaged in mining sand and stone which is formed by weathering deposits, located in Wonosunyo village, Gempol District, Pasuruan Regency, East Java. Companies that run in this category of rock mining generally have quite complex problems, one of which is in terms of time management which is considered less attention by some rock mining companies. In this study, several analyzes will be carried out and run the scientific method. The analysis carried out in this study uses statistical methods by displaying mathematical modeling and analysis of the relationship between circulation time and productivity in linear regression analysis. The data values that arise from the use of this mathematical-statistical method are the value (R^2) = 0.8597 or 85% of the Doosan Giant Dx 520 Lca, then the value (R^2) = 0.8459 or 84% of the Doosan Giant 300 Class, then Hino Ranger 500 Fm 260 Ti paired with Doosan Giant Dx 520 Lca has a value of (R^2) = 0.9868 or 98%. And lastly, the Hino Ranger 500 Fm 260 Ti paired with the Doosan Giant 300 Class has a value of (R^2) = 0.9886 or 98%.The data generated from each distribution time and productivity relationship from Doosan Giant Dx 520 Lca generates a difference value = 13,031 m^3/hour, Doosan Giant 300 Class gives a difference value = 31.347 m^3/hour, Hino Ranger 500 Fm 260 Ti against Doosan Giant Dx 520 Lca raises the difference value = 1,659 m^3/hour, Hino Ranger 500 Fm 260 Ti against Doosan Giant 300 Class raises the difference value = 1,492 m^3/hour.

1. Introduction

Mining is one of the important elements in Indonesia's economic growth. One of the mining commodities in Indonesia is sand and stone. Sand and stone are mainly used as the main raw materials in development in Indonesia, especially infrastructure. One of the companies engaged in the mining of sand and stone commodities is PT. Agung Satriya Abadi, which is located in Wonosunyo village, Gempol district, Pasuruan regency, East Java.

In the process of mining commodity sand and stone at PT. Agung Satriya Abadi uses an open-pit mining system where this mining system is directly related to free air. In open-pit mining systems, mining production operations will use excavators for the mining process and dump trucks for transportation.

It has a direct impact and can be contaminated by free air, so there will be several problems in its production operations. The first problem is the weather factor, because it is on the earth's surface, when it rains, production operations will be directly affected by rainwater. The impact on the activities of the excavation process has emerged, one of which is about the excavation process carried out by the excavator itself, which is feared that there will be landslides on the slopes of the mine being excavated if the material is exposed to the effects of rainwater it will affect the cohesiveness of material and The adhesive power will be higher so that other materials will also be excavated in this process. The next impact that will be affected by this process is about the weight of the mined material, there will be an