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Implementation of PUPR Regulation No. 21/2021 on the Assessment Criteria for Green Buildings in Villa Development in Gianyar Regency

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Abstract

Infrastructure development in Bali is accelerating rapidly, as the region serves as a major contributor of foreign exchange through tourism projects. The government continues to enhance Bali's tourism by developing new destinations in underdeveloped areas, including the construction of the Bali Cultural Center in Gunaksa Village, Klungkung, on a former mining site. The PKB project has currently reached the stages of land preparation, construction of connecting roads, bridges, and water reservoirs to supply raw water. It is expected that by 2025, the construction phase for the buildings that will support the PKB's cultural activities will commence. Given the number of planned buildings, the demand for concrete comprising fine and coarse aggregates and sand will be substantial. Fortunately, Mount Agung still holds reserves of construction materials to meet this need. Several concrete plant businesses in Bali are supplied by multiple quarry owners, as land ownership in Bali is relatively limited. Therefore, the supply chain for concrete materials involves numerous variables and influencing factors. This study aims to develop a performance model for the supply chain in concrete plants based on local and environmental variables. By elaborating all variables affecting supply chain performance, the resulting model is expected to serve as a reference for concrete plant management and stakeholders in formulating improvements to the concrete material supply chain in Bali.

Keywords
Model, Management, Supply Chain, Performance, Concrete Plant

Biographies
I Gede Agung Prawira is a construction expert with extensive experience in Indonesia's construction industry. He holds a Bachelor's degree in Civil Engineering from Warmadewa University and has participated in numerous large-scale development projects across both the public and private sectors. His professional background demonstrates a strong capability in managing complex construction initiatives and collaborating effectively within multidisciplinary teams to deliver optimal project outcomes. He is certified with a Construction Work Competency Certificate (SKK) as a Site Manager for Building Construction Projects, highlighting his technical and managerial competence in the field. His broad expertise and hands-on involvement have made significant contributions to infrastructure development, particularly in ensuring regulatory compliance and sustainable construction practices.

Putu Ika Wahyuni is a lecturer in the Master of Infrastructure and Environmental Engineering program at Warmadewa University, Indonesia focusing on construction management and environmental studies. She has several important works and publications, including "A Study of Rainfall Thresholds for Landslides in Badung Regency Using Satellite-Derived Rainfall Grid Datasets," published in the International Journal of Advances in Applied Sciences. Additionally, she authored "Risk Analysis on the Use of Heavy Equipment with the HIRARC Method," included in the AIP Conference Proceedings, as well as "Performance of High-Resolution Satellite Rainfall Datasets in Developing Rainfall-Duration Thresholds for Landslide Incidents Over Badung Regency," published in the IOP Conference Series: Earth and Environmental Science. With her extensive experience and research, Putu Ika Wahyuni significantly contributes to the advancement of knowledge in the fields of construction and the environment.

I Wayan Ariyana Basoka is a lecturer in the Civil Engineering Study Program at Warmadewa University, Denpasar, Bali, Indonesia. His academic work focuses on sustainable construction, green building design, and the integration of environmental regulations into engineering practices. He has contributed to a range of scholarly publications exploring topics such as energy efficiency in buildings, environmentally responsive construction, and the implementation of Indonesia's green building standards, particularly the Ministry of Public Works and Housing Regulation No. 21 of 2021. Through his teaching and research, he actively promotes environmentally responsible infrastructure development and contributes to the advancement of civil engineering practices in both academic and practical contexts.