

Abstrak

Perencanaan anggaran biaya yang ekonomis dengan waktu pekerjaan yang cepat, tetapi tidak mengesampingkan kualitas bangunan merupakan tujuan utama proyek konstruksi. Untuk mencapai tujuan tersebut dibutuhkan pengendalian proyek yang tepat, salah satunya pengendalian material. Pengendalian material yang buruk akan menyebabkan progres pekerjaan menjadi tertunda, bahkan mempengaruhi biaya yang sudah direncanakan sebelumnya. Salah satu metode pengendalian material yang dapat digunakan adalah metode Material Requirements Planning (MRP). Ada 4 jenis teknik lot sizing pada MRP, yaitu Lot For Lot (LFL), Economic Order Quantity (EOQ), Period Order Quantity (POQ), dan Part Period Balancing (PPB). Berdasarkan hasil analisis antara metode Material Requirements Planning (MRP) dengan metode proyek A, didapati bahwa metode MRP menghasilkan biaya yang paling ekonomis untuk material beton f'c 25 Mpa (Rp. 189.798.456,99 dari teknik lot sizing dengan biaya tertinggi) dan besi beton (biaya keseluruhan besi beton rata-rata Rp. 22.135.463.808,68 dari teknik lot sizing dengan biaya tertinggi), sedangkan untuk material bekisting (Rp. 227.185.116,00) metode proyek A menghasilkan biaya yang paling ekonomis. Berdasarkan hasil analisis antara keempat teknik lot sizing yang ada pada metode Material Requirements Planning (MRP), teknik Part Period Balancing menghasilkan biaya paling ekonomis untuk material beton f'c 25 Mpa (Rp. 137.396.049,04), besi beton D10 @7.4 kg (Rp18.806.065.654,72), besi beton D19 @26.76 kg (Rp. 426.720.257,22), besi beton D25 @46.2 kg (Rp. 760.564.898,70), dan bekisting (Rp. 227.874.502,36).

Kata kunci : Lot Sizing; MRP; Pengendalian Material

Abstract

Planning an economical cost budget with fast work time, but not ignoring the quality of the building is the main objective of the construction project. To achieve these objectives requires proper project control, one of which is material control. Poor material control will cause work progress to be delayed, even affecting planned costs. One material control method that can be used is the Material Requirements Planning method (MRP). There are 4 types of lot sizing techniques in MRP, namely Lot For Lot (LFL), Economic Order Quantity (EOQ), Period Order Quantity (POQ), and Part Period Balancing (PPB). Based on the results of the analysis between the Material Requirements Planning (MRP) method and the project A method, it was found that the MRP method produces the most economical cost for concrete materials f'c 25 Mpa (Rp. 189.798.456,99 from lot sizing technique with the highest cost) and concrete steel (the overall cost of concrete iron is Rp. 22.135.463.808,68 from lot sizing technique with the highest cost), while for formwork material (Rp. 227.185.116,00) the project A method produces the most economical cost. Based on the analysis of the four lot sizing techniques in the Material Requirements Planning (MRP) method, the Part Period Balancing technique produces the most economical cost for concrete material f'c 25 Mpa (Rp. 137.396.049,04), concrete iron D10 @ 7.4 kg (Rp. 18.806.065.654,72), concrete iron D19 @ 26.76 kg (Rp. 426.720.257,22), concrete iron D25 @ 46.2 kg (Rp. 760.564.898,70), and formwork (Rp. 227.874. 502,36).

Keywords : Lot Sizing; MRP; Material Control