LEMBAR PENGESAHAN

SKRIPSI

Penentuan Rute Distribusi LPG 3 Kg PT. Toyungo Menggunakan Metode *Branch And Bound*

Telah dipertahankan di depan Dewan Penguji pada :
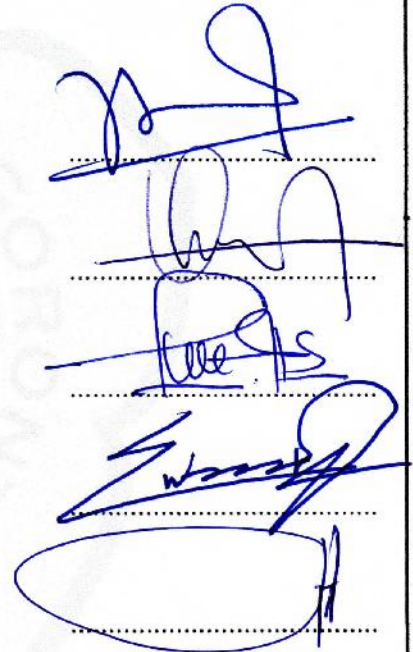
Hari/Tanggal   : Rabu, 10 Juli 2019
Waktu   : 10:00 s.d. Selesai

Dan telah diterima sebagai salah satu persyaratan

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PERSETUJUAN PEMBIMBING

SKRIPSI

Penentuan Rute Distribusi LPG 3 Kg PT. Toyungo Menggunakan Metode *Branch And Bound*

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ABSTRAK

Moh. Agus 2019. Penentuan Rute Distribusi LPG 3 Kg PT. Toyungo Menggunakan Metode *Branch and Bound*. Pembimbing 1 dan Pembimbing 2 (Dr. Eduart Wolok, ST., MT. dan Idham Halid Lahay, ST., M.Sc)

Penelitian ini bertujuan untuk mengetahui total jarak tempuh dan biaya transportasi rute distribusi berdasarkan metode *clarke and saving wright* (CSW), *nearest neighbour* (NN), *branch and bound* (BnB) atau kombinasi dari metode tersebut serta mengetahui selisih jarak tempuh dan biaya transportasi (penghematan) dari rute yang paling optimal. Hasil penelitian didapatkan total jarak tempuh rute dari metode *clarke and saving wright* adalah 321,582 km dan biaya transportasi sejumlah Rp.13.270.140 per tahun, jarak tempuh rute metode *nearest neighbour* adalah 278,06 km dengan biaya per tahun Rp.11.474.216. Kombinasi metode *clarke and saving wright* dengan *branch and bound* menghasilkan rute dengan jarak tempuh 311,679 km dan biaya transportasi Rp.12.863.604 serta kombinasi metode *nearest neighbour* dengan *branch and bound* menghasilkan rute dengan jarak tempuh 277,118 km dan biaya transportasi Rp.11.435.320. Rute paling optimal didapatkan dari kombinasi metode *nearest neighbour* dengan *branch and bound* dengan selisih jarak tempuh 37,917 km yang awalnya 315,035 km menjadi 277,118 km serta persentase penghematan biaya transportasi 12,04% dari Rp. 13.000.000 per tahun menjadi Rp. 11.435.320 per tahun.

Kata Kunci: Optimasi, Distribusi, Rute, LPG, Branch and Bound.

ABSTRACT

Moh. Agus, 2019. The Determination of Distribution Route of LPG 3 Kg by PT. Toyungo using Branch and Bound Method. The principal supervisor is Dr. Eduart Wolok, ST., MT, and the co-supervisor is Idham Halid Lahay, ST., M.Sc.

The purpose of this research was to investigate the total mileage and transportation budget for distribution route based on clarke and saving wright (CSW), nearest neighbor (NN), branch and bound (BnB) or the combination of those methods, as well as investigating the difference of mileage and transportation budget of the most optimal route. Findings revealed that the total mileage obtained through clarke and saving wright method was 321,582 with its transportation budget for IDR 13.270.140 per year. For the nearest neighbor method, it obtained the total mileage for 278,06 km and the transportation budget for IDR 11.474.216 per year. Meanwhile, the combination between clarke and saving wright method and branch and bound method obtained mileage for 311,679 km and transportation budget for IDR 12.863.604 per year and the combination between nearest neighbor method and branch and bound obtained method obtained mileage for 277,118 km and transportation budget for IDR 11.435.320. The most optimal route was the combination between nearest neighbor method and branch and bound obtained method by having the difference of mileage for 37,917 km, from 315,035 km to be 277,118. The percentage of cost-saving of the combination between the two methods was 12,04%, from IDR 13.000.000 to be IDR 11.435.320 per year.

Keywords: Optimization, Distribution, LPG, Branch and Bound