

Rizqy Galan Pradipta, 2015. *Rancang Bangun Sistem Pendukung Keputusan Untuk Pengoptimalan Biaya Transportasi Bagasse Antara Pabrik Gula dan Pabrik Kertas di Jawa Timur Dengan Metode Stepping Stone*. Skripsi ini dibawah bimbingan Purbandini, S.Si., M.Kom. dan Badrus Zaman, S.Kom., M.Cs. Program Studi S1 Sistem Informasi. Fakultas Sains dan Teknologi, Universitas Airlangga.

ABSTRAK

Pada penelitian ini, sistem pendukung keputusan untuk mengoptimalkan biaya transportasi *bagasse* dari pabrik gula menuju pabrik kertas di Jawa Timur dirancang dan dibangun dengan menggunakan metode *Stepping Stone* yang bertujuan untuk membantu dalam membuat suatu keputusan untuk menentukan alur pendistribusian muatan *bagasse* dari masing-masing pabrik gula menuju masing-masing pabrik kertas dengan acuan biaya transportasi yang paling minimum.

Rancang bangun sistem pendukung keputusan untuk mengoptimalkan biaya transportasi *bagasse* dengan metode *Stepping Stone* melalui beberapa tahap. Tahap yang pertama adalah pengumpulan data untuk memberikan suatu inputan. Tahap selanjutnya adalah pengolahan data, karena data yang diperoleh masih berupa data mentah, sehingga perlu diolah menjadi data yang dibutuhkan oleh sistem. Tahap ketiga adalah penyelesaian masalah menggunakan metode *Stepping Stone*. Tahap terakhir adalah perancangan sistem menggunakan *Contextual Data Model (CDM)*, *Physical Data Model (PDM)*, dan *flow chart diagram* serta pembangunan sistem berbasis *desktop* menggunakan bahasa pemrograman *java*.

Hasil penelitian berupa sistem pendukung keputusan untuk mengoptimalkan biaya transportasi *bagasse* yang terdiri dari antarmuka sistem sebanyak 11 halaman. Berdasarkan perhitungan sistem diperoleh dari 28 pabrik gula yang berada di Jawa Timur terdapat 24 pabrik gula yang terlibat distribusi, 2 pabrik gula memiliki sisa muatan dan 4 pabrik gula sama sekali tidak terlibat dalam pendistribusian *bagasse*, serta hasil perhitungan total biaya transportasi yang harus dikeluarkan sebesar Rp 69.588.984.243,534 selama periode 1 tahun.

Kata kunci : *Sistem Pendukung Keputusan, Pemrograman Linear, Pengoptimalan Biaya Transportasi, Stepping Stone*

Rizqy Galan Pradipta, 2015. *Design and Build of Decision Support System to Optimize Bagasse Transportation Costs from Sugar Factories to Paper Factories in East Java Using Stepping Stone*. This undergraduate thesis was under guidance by Purbandini, S.Si., M.Kom. and Badrus Zaman, S.Kom., M.Cs. Bachelor Degree Information System Study Program. Faculty of Science and Technology, Airlangga University.

ABSTRACT

In this research, a decision support system to optimize bagasse transportation costs from sugar factories to paper factories in East Java was designed and developed using Stepping Stone method which aims to assist in making a decision to determine the flow of charges distribution of bagasse from each sugar factory towards each paper factory with reference to the minimum transportation costs.

The design of this decision support system to optimize bagasse transportation costs with Stepping Stone method through several stages. The first stage was to collect of data needed to delivering an input to system. The second stage was the processing of data, because the data that already obtained was a raw data, so it needs to be processed into a data that needed by the system. The third stage was the completion of a problem using the Stepping Stone method. The last stage was the design of system using Contextual Data Modem (CDM), Physical Data Model (PDM), and the flow chart diagrams and desktop-based systems development using java as programming language.

The result was a decision supporting system to optimize bagasse transportation costs which consists of as many as eleven system interfaces. Based on the system calculation, obtained from 28 sugar factories located in East Java, there are 24 sugar factories that involved in bagasse distribution, two sugar factories still had remain cargo left over and 4 sugar factories which were not involved in bagasse distribution, and the result of the calculation of total transportation costs that must be paid Rp 69.588.984.243,534 over a period of 1 year.

Keyword : *Decision Supporting System, Linier Programming, Transportation Optimize Cost ,Stepping Stone Method*