

ABSTRAK

Penelitian ini bertujuan untuk membuat model sistem persediaan pipa kecil *general market* beserta batasan-batasannya yang menghasilkan biaya persediaan minimum. Adapun batasan-batasannya meliputi minimum order bahan baku, kapasitas pengiriman bahan baku, kapasitas penyimpanan gudang bahan baku dan barang jadi, *safety stock*, dan kapasitas produksi. Penelitian ini menggunakan simulasi menggunakan data historis selama tahun 2014-2015 dan kemudian digunakan sebagai acuan proyeksi untuk tahun 2016. Berdasarkan simulasi yang dijalankan ditemukan bahwa metode ini dapat menghemat biaya persediaan hingga 38% dan 64% di tahun 2014 dan 2015 berturut-turut.

Kata Kunci: persediaan, minimum order, *safety stock*, simulasi, PT Bakrie Pipe Industries.

ABSTRACT

This research aims to create a model model of inventory system of general market small pipe including the constraints involved. The constraints are minimum order of raw materials, raw material delivery capacity, warehouse capacity of raw materials and finished goods, safety stock, and production capacity. This study uses a simulation using historical data over 2014-2015 and then used as a reference projection for 2016. According to simulations, it is found that this method can save inventory costs up to 38% and 64% in 2014 and 2015 respectively.

Keywords: inventory, minimum order, safety stock, simulation, PT Bakrie Pipe Industries.

DAFTAR PUSTAKA

- Abraham, B., & Ledolter, J. (2005). *Statistical Methods for Forecasting*. New Jersey: John Wiley & Sons, Inc.
- Bedworth, D. D., & Bailey, J. E. (1982). *Integrated Production Control System*. Canada: John Wiley & Sons, Inc.
- Chopra, S., & Meindl, P. (2007). *Supply Chain Management: Strategy, Planning, and Operation*. New Jersey: Pearson Education, Inc.
- Chung, C. A. (2004). *Simulation Modelling Handbook: A Practical Approach*. Danvers: CRC Press.
- Elsayed, E. A., & Boucher, T. O. (1994). *Analysis and Control of Production System*. New Jersey: Prentice-Hall.
- Hicks, P. E. (1994). *Industrial Engineering and Management: A New Perspective*. New York: McGraw-Hill, Inc.
- Jacobs, F. R., & Chase, R. B. (2014). *Operations and Supply Chain Management*. New York: McGraw-Hill Education.
- Liker, J. K. (2006). *The Toyota Way*. Jakarta: Erlangga.
- Tee, Y. S., & Rosetti, M. D. (2001). Using Simulation to Evaluate a Continuous Review (R, Q) Two-Echelon Inventory Model. *Proc. the 6th Annual International Conference on Industrial Engineering*. San Francisco.
- Yaffee, R. A., & McGee, M. (2000). *Introduction to Time Series Analysis and Forecasting: with Applications of SAS and SPSS*. New York: Academic Press.