

# **PENERAPAN METODE *ANALYTICAL HIERARCHY PROCESS* DAN *DATA ENVELOPMENT ANALYSIS* DALAM PENILAIAN *SUPPLIER* BAHAN BAKU TEKSTIL PADA PT. XYZ**

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## **ABSTRAK**

Dalam industri textile, kualitas bahan baku tekstil langsung berpengaruh pada kualitas produk akhir, sehingga pemilihan supplier yang tepat menjadi sangat penting. Perusahaan perlu melakukan seleksi supplier dengan cermat untuk memastikan kelancaran proses produksi dan optimalitas perolehan bahan baku. Untuk memastikan keberhasilan operasional supply chain, perusahaan harus memperhatikan terlebih dahulu proses Supply Chain Management, di mana beberapa penelitian dilakukan untuk memperbaiki penyebab masalah perusahaan, termasuk satu masalah terkait supply chain. Pengurangan risiko terkait dengan supply chain diterapkan pendekatan House of Risk (HOR). Penggunaan metode House of Risk (HOR) tersebut untuk menetapkan permasalahan internal dalam sistem Supply Chain Management serta metode *Analytical Hierarchy Process* (AHP) dan *Data Envelopment Analysis* (DEA) yang menawarkan pendekatan sistematis dan kuantitatif dalam mengevaluasi dan memilih supplier merupakan solusi penulis dalam mempertimbangkan permasalahan yang ada. Berdasarkan hasil mitigasi risiko yang telah diperoleh, menunjukkan untuk ranking prioritas tertinggi ada pada “Evaluasi Pemilihan Pemasok dengan nilai ETDk sebesar 11907. Kemudian didapatkan bobot kriteria dan subkriteria hasil perhitungan *Analytical Hierarchy Process* (AHP) yang paling berpengaruh adalah Cost (C) dengan nilai bobot 0.38 dan subkriteria paling berpengaruh yaitu “Kesesuaian harga barang” dengan nilai bobot 0.31. Dengan demikian, hasil dari perhitungan metode *Data Envelopment Analysis* (DEA) didampingi dengan *software* LINDO 6.1 didapatkan supplier E merupakan alternatif pertama dengan nilai super efisiensi yang paling tinggi yaitu sebesar 1.1979.

**Kata Kunci:** *Supplier, House of Risk, Analytical Hierarchy Process, Data Envelopment Analysis (DEA), Lindo 6.1*

**APPLICATION OF ANALYTICAL HIERARCHY PROCESS  
AND DATA ENVELOPMENT ANALYSIS METHODS IN  
ASSESSING TEXTILE RAW MATERIAL SUPPLIERS AT PT.  
XYZ**

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**ABSTRACT**

In the textile industry, the quality of textile raw materials directly affects the quality of the final product, so the selection of the right supplier is very important. Companies need to carefully select suppliers to ensure the smooth production process and optimization of raw material acquisition. To ensure the success of supply chain operations, companies must first pay attention to the Supply Chain Management process, where several studies were conducted to fix the causes of company problems, including one related to the supply chain. Risk reduction related to the supply chain is applied to the House of Risk (HOR) approach. The use of the House of Risk (HOR) method to determine internal problems in the Supply Chain Management system and the *Analytical Hierarchy Process* (AHP) and Data Envelopment Analysis (DEA) methods that offer a systematic and quantitative approach in evaluating and selecting suppliers is the author's solution in considering the existing problems. Based on the results of the risk mitigation that has been obtained, it shows that the highest priority ranking is in "Supplier Selection Evaluation with an ETDk value of 11907. Then the weight of the criteria and subcriteria obtained from the calculation of the *Analytical Hierarchy Process* (AHP) which has the most influence is the Cost (C) criterion with a weight of 0.38 and the most influential subcriteria is "The suitability of the price of goods" with a weight value of 0.31. Thus, the results of the calculation of the Data Envelopment Analysis (DEA) method accompanied by LINDO 6.1 software obtained supplier E is the first alternative with the highest super efficiency value of 1.1979.

**Keyword:** *Supplier, House of Risk, Analytical Hierarchy Process, Data Envelopment Analysis (DEA), Lindo 6.1*