

Information System for Supplier Selection based on Risk Matrix and Analytic Hierarchy Process

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Abstract

The procurement of goods and services is a fundamental component of a company's supply chain and is related to the quality of the final product, business continuity, productivity and costs. Within this decision-making process, it is important to have an information system based on previous risk assessments for the selection of the best supplier. This research proposes to integrate risk assessment together with the Analytical Hierarchical Process (AHP) to calculate the impact of each of the selection criteria in the process of choosing suppliers. The proposed methodology allowed the design of an information system for decision making using the Analytical Hierarchical Process with the evaluation of a Risk Matrix to choose a supplier. Through the opinion of experts in the areas of purchasing and operations, the most important criteria for selecting a supplier were found, considering the associated risk for an organization. The designed software allows the user to enter the relevant information of each supplier and the system generates a ranking of the best suppliers. It is concluded that risk management and AHP allows to involve preventive analyses that can be considered to anticipate possible outcomes and stipulate a contingency plan in case a risk that negatively impacts an organization materializes.

Keywords

Information System, Supplier Selection, Risk Matrix, Analytical Hierarchical Process.

Biographies

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