

ABSTRACT

This project report presents a study on Analytic Hierarchy Process (AHP)-based facility location decisions. The AHP can be summarized in four steps: first, breaking down the decision making problem into a hierarchy of interrelated elements; second, applying pair-wise comparison judgments to express the relative strength or intensity of elements in the hierarchy; third, translating judgments into numbers using Saaty's eigenvector weighting methods; and fourth, arranging the priority of alternatives through a synthesizing procedure. There are three case applications in this report. The first one involves an industrial plant site selection. The second deals with the application in a convenience store location decision. The last applies AHP to a document storage facility location .

The AHP facilitates location decisions by helping decision makers distinguish clearly the priority of each factor and the appropriateness of each alternative with respect to a factor by a procedure of making pair-wise comparisons. In addition, the AHP can assess consistency of judgments which is determined by an eigenvalue; thereby ensuring true reflection of decision makers' opinions.