ABSTRACT

The government's attention to the globalization of environmental-friendly industries, has forced several manufacturing industry sectors to implement Green Supply Chain Management (GSCM), including green procurement activities that is the business process of selecting and evaluating green suppliers. PT. XYZ is one of the make by order textile dyeing textile companies that has implemented the green procurement concept. The absence of method and decision support systems in multiciteria environtment with general and green supply criteria in the process of selecting and evaluating green suppliers in the main raw materials at PT. XYZ, that is organic fabric dyes causes decision-making processes that tend to long, contain high subjectivity, inaccurate judgment and difficult as established *cost-benefit*, quantitative-qualitative and tangible-intangible criteria. The purpose of this study is to design a web-based multicriteria decision support system of supplier selection and evaluation using the Fuzzy Axiomatics Design (FAD) method. The results show that the system can be used to select and evaluate the right and best multicriteria green supplier alternatives quickly, objectively, accurately and easily. The criteria that considered in this study are quality, capability of supplier, costs, strategic alliances and green products. Where, performance indicators and measurement methods on each criterion are the results of an assessment of track record data and real time. Decision support systems are designed using Nodejs and real-time firebase DBMS databases consisting of dashboard pages, data input pages covering topic and topic decryption, design criteria, criterion evaluation, criterion evaluation, and supplier performance appraisal, finally there is an output page that shows the results of calculation selection green supplier and the results of evaluating each alternative green supplier.

Keywords: Green supplier selection and evaluation, Fuzzy Axiomatics Design (FAD).