## Accepted Manuscript

Years of fuzzy set theory and models for supplier assessment and selection: A literature review

Dragan Simić, Ilija Kovačević, Vasa Svirčević, Svetlana Simić

 PII:
 \$1570-8683(16)30070-2

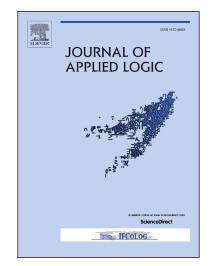
 DOI:
 http://dx.doi.org/10.1016/j.jal.2016.11.016

 Reference:
 JAL 447

To appear in: Journal of Applied Logic

Please cite this article in press as: D. Simić et al., Years of fuzzy set theory and models for supplier assessment and selection: A literature review, *J. Appl. Log.* (2016), http://dx.doi.org/10.1016/j.jal.2016.11.016

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



### ACCEPTED MANUSCRIPT

#### 50 Years of Fuzzy Set Theory and Models for Supplier Assessment and Selection: a Literature Review

Dragan Simić<sup>1\*</sup>, Ilija Kovačević<sup>1</sup>, Vasa Svirčević<sup>2</sup> and Svetlana Simić<sup>3</sup>

<sup>1</sup>University of Novi Sad, Faculty of Technical Sciences, Trg Dositeja Obradovića 6, 21000 Novi Sad, Serbia dsimic@eunet.rs, ilijak@uns.ac.rs <sup>2</sup>Lames Ltd., Jarački put bb., 22000 Sremska Mitrovica, Serbia vasasv@hotmail.com

<sup>3</sup>University of Novi Sad, Faculty of Medicine, Hajduk Veljkova 1–9, 21000 Novi Sad, Serbia drdragansimic@gmail.com

**Abstract.** Supplier assessment and selection mapping as an essential component of supply chain management are usually multi-criteria decision-making problems. Decision making is the thought process of selecting a logical choice from the available options. This is generally made under fuzzy environment. Fuzzy decision-making is a decision process using the sets whose boundaries are not sharply defined. The aim of this paper is to show how fuzzy set theory, fuzzy decision-making and hybrid solutions based on fuzzy can be used in the various models for supplier assessment and selection in a 50 year period.

**Keywords.** Fuzzy set theory, supplier assessment, supplier selection, fuzzy logic, uncertainty, logistics, supply chain

#### 1 Introduction

Supply chain management and strategic sourcing are among the fastest growing areas of management. Most companies in production and manufacturing industries are seeking the most appropriate supplier to improve economic efficiency. Phenomenon of globalization and rapid development of logistics, at the same time, is in details presented in [1]. Enterprises have recently become more dependent on suppliers, and direct and indirect consequences of poor decision-making become more severe. Supplier selection is an important aspect of competition and it determines the fate of an enterprise.

Fifty years ago, in 1965, Zadeh introduced fuzzy set theory to cope with the imprecision and uncertainty which is inherent to human judgment in decision making processes through the use of linguistic terms and degrees of membership. A fuzzy set is a class of objects with grades of membership. These grades present the degree of stability to which certain element belongs to a fuzzy set [2].

Therefore, it is economically sensible for an enterprise decision maker to use fuzzy set theory, one of the artificial intelligence (AI) techniques, which have limited use in

Download English Version:

# https://daneshyari.com/en/article/5778226

Download Persian Version:

https://daneshyari.com/article/5778226

Daneshyari.com