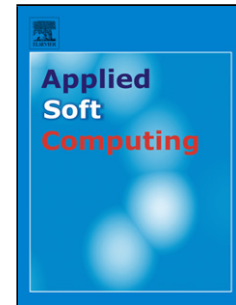


Accepted Manuscript

Title: Prototypes construction from partial rankings to characterize the attractiveness of companies in Belgium

Author: Gonzalo Nápoles Zoumpolia Dikopoulou Elpiniki Papageorgiou Rafael Bello Koen Vanhoof



PII: S1568-4946(16)30041-2
DOI: <http://dx.doi.org/doi:10.1016/j.asoc.2016.01.053>
Reference: ASOC 3457

To appear in: *Applied Soft Computing*

Received date: 4-8-2015
Revised date: 12-1-2016
Accepted date: 30-1-2016

Please cite this article as: G. Nápoles, Z. Dikopoulou, E. Papageorgiou, R. Bello, K. Vanhoof, Prototypes construction from partial rankings to characterize the attractiveness of companies in Belgium, *Applied Soft Computing Journal* (2016), <http://dx.doi.org/10.1016/j.asoc.2016.01.053>

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.

Prototypes construction from partial rankings to characterize the attractiveness of companies in Belgium

Gonzalo Nápoles^{1,2,*}, Zoumpolia Dikopoulou¹, Elpiniki Papageorgiou^{1,3},
Rafael Bello² and Koen Vanhoof¹

¹ Faculty of Business Economics, Hasselt University, Belgium

² Department of Computer Science, Central University Las Villas, Cuba

³ Department of Computer Engineering, Technological Education Institute of Central Greece, Greece

(*) Email-address: gnapoles@uclv.edu.cu or napoles.gonzalo@gmail.com

Full postal address: Carretera a Camajuani km. 5 1/2, Santa Clara, Villa Clara, Cuba

Phone numbers: +53 42 275267, +53 42 281515

Abstract. What are the most relevant factors to be considered by employees when searching for an employer? The answer to this question poses valuable knowledge from the Business Intelligence viewpoint since it allows companies to retain personnel and attract competent employees. It leads to an increase in sales of their products or services, therefore remaining competitive across similar companies in the market. In this paper we assess the attractiveness of companies in Belgium by using a new two-stage methodology based on Artificial Intelligence techniques. The proposed method allows constructing high-quality prototypes from partial rankings indicating experts' preferences. Being more explicit, in the first step we propose a fuzzy clustering algorithm for partial rankings called *fuzzy c-aggregation*. This algorithm is based on the well-known fuzzy c-means procedure and uses the Hausdorff distance as dissimilarity functional and a counting strategy for updating the center of each cluster. However, we cannot ensure the optimality of such prototypes, and therefore more accurate prototypes must be derived. That is why the second step is focused on solving the extended Kemeny ranking problem for each discovered cluster taking into account the estimated membership matrix. To accomplish that, we adopt an optimization method based on Swarm Intelligence that exploits a colony of artificial ants. Several simulations show the effectiveness of the proposal for the real-world problem under investigation.

Keywords: Partial rankings, fuzzy clustering, fuzzy aggregation, prototypes construction.

1. Introduction

Job satisfaction results from employees' positive and negative feelings regarding their environment at work and involves not only employees but also the employer. There is no conclusive way to measure or ascertain job satisfaction. In point of fact, job satisfaction is related to several aspects, depending on what each individual considers as important [1,2]. As an example, the financial soundness factor frequently reflects the employee's overall satisfaction, although it is supported by a positive working environment, high morale and resources available to the employees in order to perform the tasks that have been delegated onto them. Hence, employees' job satisfaction goes beyond solely considering financial-type factors, mainly in those countries with high average incomes.

Download English Version:

<https://daneshyari.com/en/article/6904609>

Download Persian Version:

<https://daneshyari.com/article/6904609>

[Daneshyari.com](https://daneshyari.com)