INVESTIGATION INTO THE APPLICATION OF MULTIPLE CRITERIA DECISION MAKING FOR AN ONLINE CANDIDATE SHORT LISTING SYSTEM

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ABSTRACT

The process of screening candidates is a common operation carried out by organizations in areas such as recruitment, selection of candidates for university admittance, awarding of scholarships etc. The selection process in the area of awarding scholarships often uses a manual framework which examines the candidate's qualifications according to that specified by the donor country. The main objective of this research paper is to eliminate the core inefficiencies faced within this framework, thus improving the quality of the final decision by facilitating the selection of the most deserving candidate and minimizing the degree of personal preference. In order to perform this task, the following document considers four Multiple Criteria Decision Making Models (MCDM) techniques namely Simple Additive Weighting Model (SAW), Multiplicative Exponential Weighting Model (MEW), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) and Analytical Hierarchy Process (AHP). The proposed solution integrates SAW and AHP to shortlist the applications received via a web application which acts as an interface between the applicants and selection panel. AHP was used to develop a weight-age model which utilizes pair-wise comparison to identify the relative importance of each criteria used to evaluate candidates. Furthermore SAW was used to develop a score for each candidate according to their qualifications and the weight assigned by AHP. As a result of the proposed framework the throughput efficiency of the overall short listing procedure was proven to be improved by 30.14%, eliminate the need for manual labor by 80% and speed up time by 70%.

Keywords: Decision Support System (DSS), Analytical Hierarchy Process (AHP), Simple Additive Weighted Model (SAW), Short Listing