A Multi-Criteria Decision Making Approach to Journal Selection and Ranking

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All Authors

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Abstract:
Selection and ranking of Journals is an important issue in research community because of the fast growing list of journals. This issue has been extensively attended to as a selection problem using different search engines and recommender systems. Unfortunately, though there are multiple conflicting criteria about the journal features, the selection problem has never been viewed as a multi-criteria decision making one. In this paper, journal selection and ranking is formulated as multi-criteria decision making problem and a new approach for journal ranking based on author's preference and preference selection index is proposed. The proposed approach has been verified with three cases in the field of Computer Science. Journal indexing, publisher, percentile, citescore and open access status were considered as journal attributes. Scopus and Science Citation Index Expanded are sources of the journal dataset. Selenium and Beautiful Soup were used as web scraping tools for capturing journal information. The case study results suggested different ranking results for each author, reflecting the effect of each author's preference rating of the journal attribute options. This study has been able to formulate journal selection and ranking as a multi-criteria decision making problem and a ranking system has been implemented to support potential authors.

I. Introduction
In this 21st century, research output from computer science and information technology is making a great impact on daily lives and outstanding contributions to the research community [1]–[3]. Several domains like communication, education, medicine, agriculture, government, business, etc. are recipients of these contributions. To make these research works visible to the interesting individuals and industries for appropriate implementation and extension, they have to be presented as scientific and scholarly materials like journal articles, conference proceedings, periodicals or books. To accept a research manuscript for

publication in an outlet, it must be within the scope of that outlet and some form of peer review or editorial review is involved to evaluate the structure of the manuscript and the findings from the study. On the part of the authors, there are certain journal features that inspire authors to submit their research works for review in an outlet. With recent increase in journal outlets, the selection of relevant journals outlet for publishing impactful research has become a critical decision-making problem for authors.

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