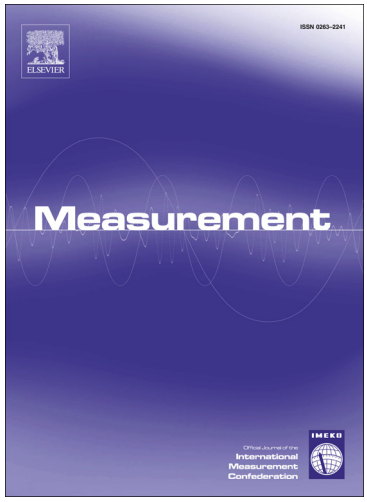

Online Fuzzy Based Decision Support System for Human Resource Performance Appraisal

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ONLINE FUZZY BASED DECISION SUPPORT SYSTEM FOR HUMAN RESOURCE PERFORMANCE APPRAISAL

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Abstract: The evaluation of employees' performance is geared towards assessing individual's contribution to the attainment of organizational goals. Performance Appraisal (PA) is a key tool in an organization due to its potency to either make or mar such organization. Irregular standards for human resource PA, tribal sentiment, emotional status of assessors, and delay in appraisal processes among others are the key problems of the conventional methods of appraising employees' performances in an organization. This research therefore proposes an Online Fuzzy Based Decision Support System for Human Resource PA. The proposed system incorporates an efficient computational technique which handles the delays and bias associated with the orthodox performance appraisal system in organizations. The Fuzzy Inference System developed in this research uses Mamdani technique, Center of Gravity Deffuzification approach and takes as input the key attributes considered when appraising the performance of an employee. An experimental study of the proposed system was conducted using the dataset of academic staff. Standard statistical technique was used to measure the accuracy level of the System and the result shows that the proposed system has 0.78 probability (78%) of predicting accurately the appraisal status of an academic staff.

Keywords: **Performance Appraisal; Fuzzy Inference System; Human Resource Manager; Academic Staff;**

1. Introduction

Performance Appraisal (PA) is a process of identifying, evaluating, and compensating the works (efforts) of employees in an organization [1]. This exercise is performed with the aim of effectively rewarding employees' efforts in order to motivate them towards continuous pursuit of organizational objectives [2]. Appraisals are generally considered to have positive influence on employees' performances, but they also may have a negative impact on motivation, role perceptions, and turnover when poorly designed and administered [3].

Universities and other institutions of higher learning are perceived as the hubs of creativity from which several innovations had sprung forth. These innovations are mostly products of qualitative research and teaching. The quality of teaching depends on the qualifications and research potentials of the academic staff, and most importantly, the effective appraisal of performances of academic staff by the management of such institutions. Appraisal and management of performance have recently attracted much attention in European Universities and Colleges [4].

The conventional performance appraisal methods in most institutions of higher learning are defective in that evaluations of academic staff performances are subjectively biased and evaluators often apply different standards with different employees which eventually result in inconsistent, unreliable, and invalid evaluations [5, 6, 7]. These inefficiencies have adversely affected the performance of academics in institutions of higher learning and it has equally discouraged a large number of them from discharging their duties accordingly. In addition to the above challenge, it also dampens the chances of achieving institutional goals and objectives [8]. Hence, institutions of higher learning are expected to adopt new and improved PA approach for the appraisal of its academic staff performances. The above highlighted challenges faced by the conventional appraisal systems are the core motivating factors for this research.

Fuzzy Logic has been identified as a substantial soft computing tool that is used to efficiently model decision support systems [9]. Hence, this research proposes a fuzzy logic driven decision support system for the appraisal of academic staff performance in institutions of higher learning. The proposed system is aimed at providing human resource managers in institutions of higher learning with a tool that would aid effective decision making and motivate academic staff towards self development and pursuit of institutional objectives.

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