

Abstract

One of the problem in decision making is choosing a set of alternative based on some criteria. A solution that can help to solve that kind of problem is by using Multi Criteria Decision Making (MCDM). But, the problem will become more complex if there are some participant that have a role as decision makers or in other words as a member of the selection team, which the people in that selection team will have a various background, motivation, idea, attitude, and personality. That's why, a conflict in the election process is possible to happen. The principal selection process is one cases where the selection team can give a judgement to a set of alternatif teachers who is the candidate for the principal election based on some decided criteria. Because of that, to solve the conflict in the selection team, in this final paper will discuss about Multi Participant Multi Criteria Decision Making (MP-MCDM) with cluster analysis approach using K-means approach on the integration process of the election process of some participants that divided into two category, the major opinion and the minor opinion. And the major opinion will be used for the next election process. The TOPSIS method will be user for the rank process so every alternative can see how close is the relative solution with the ideal solution. Based on the testing of standart deviasi result, after clustering standart deviasi more near to zero value, that's caused the deviate value has decreased. While based on the testing with the TOPSIS for ordering, there have different result with the old system. That's caused the old system ordering just based on the collective of value from each criteria. While TOPSIS based on how as much as near the collective value from each criteria, to the best value from each criteria.

Keyword : Multi Criteria Decision Making, Multi Participant Multi Criteria Decision Making, cluster analysis, K-means clustering, Mayor Opinion, TOPSIS.