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A Decision Making Approach to Determine the Most Affected Economic Sector for Covid-19

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Abstract

Background: Multi Criteria Decision Making (MCDM) is most important branch of Operation Research which has been widely useful in various fields such as supplier selection [3], performance evaluation [1] and risk evaluation [2]. There are many MCDM tools are modeled by so many researchers. In MCDM process people select the best alternatives with respect to certain criteria. Recently this MCDM tools are used in Economical, Social, and Environmental.

MOORA [4] is a multi-criteria decision-making method with a high potential for comprehensive evaluation of alternatives confronting considerable diversity and multiplicity of effective factors. It is one of the multi-objective optimization methods for effectively solving complex decision-making problems. This method seeks to select the best alternative considering a set of commonly conflicting criteria. The Analytic Hierarchy Process (AHP) was introduced by Saaty [5] since 1970's. The AHP method is ranking process that is used in making group decision and is widely used around the world in a variety of fields such as business, government, industry, education, health, and others. The method focuses on prioritizing the selection criteria, and distinguishing the more important criteria from the less important ones

Objectives: The main objective of the paper is to study a hybrid decision making approach based on AHP and MOORA method and find the most affected economic sector for covid-19.

Methodology: A MCDM based method AHP proposed by Saaty [5] is used to find weights of the criteria's. Finally, Moora method [4] is applied to find the most affected economic sector.

Results and discussion: We have developed a hybrid MCDM method based on AHP and Moora method. As a case study consider this newly hybrid method to find most affected economic sector. Result indicate that Hospitality sector is the most significant affected sector for covid-19

Future work: The present investigation has attempted to estimate the most affected economic sector for covid-19. In future, the present study is applicable for several decisions making related to problem.

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