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A SIMULATION BASED APPROACH TO CALCULATE THE FUZZY CORRELATION COEFFICIENT OF FUZZY OBSERVATIONS

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Abstract

Fuzzy set theory has been widely used in various fields of statistics in recent years. The correlation between fuzzy random variables can be measured by a fuzzy correlation coefficient. When the correlation of the fuzzy random variables has being calculated, mathematical programming and fuzzy arithmetic operations have been used in the literature. In this study, to calculate the fuzzy correlation coefficient, a new approach based on simulation is proposed. It is not necessary to employ mathematical programming or fuzzy arithmetic operations when the proposed method is used. The proposed approach is applied to fats and oils data to show the applicability of the method.

Keywords: Fuzzy number, Correlation, Fuzzy Correlation.

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1. Introduction

In statistical theory, the correlation coefficient is a measure for the linear relationship between two random variables. Given a sample of n independent pairs of observations

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