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A New Modified Farlie-Gumbel-Morgenstern Copula

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Abstract- Copulas are the special functions obtained with a combination of functions. Therefore, appropriate conversions can be made to create new copulas or to improve the existing copulas. Many researchers have recently aimed to obtain variables with higher correlation by improving the existing copulas or constructing new copulas. In this study, a new copula which has negative quadrant dependency has been introduced. A new form of Farlie-Gumbel-Morgenstern (FGM) copula is obtained by applying FGM copula. Kendall's τ and Spearman's ρ values for the new form of FGM copula has been obtained to have larger bounds on the negative side. The data set is simulated from FGM copula and the new form of FGM copula. Then, dependency structure is analyzed with scatter plot of data obtained from copulas.

Keywords- FGM copula, new form of FGM, negative quadrant dependency

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