

## DEPENDENCE BETWEEN THREE DIAGNOSTIC TESTS IN PRESENCE OF VERIFICATION BIAS: A COPULA FUNCTION APPROACH

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- **ABSTRACT:** *The study of the dependence between the outcomes of two medical diagnostic tests is important since that decision about what therapeutic treatment is suitable for diseased individuals, depends of the test results. In this paper, we introduce a Bayesian approach to study the effect of three copula structures to model the dependence effect on the prevalence and performance test parameters, using data obtained within a design with verification bias and three diagnostic tests, two of them with dependent outcomes and the other one independent. We simulated data of three copula models each of them with three dependence levels: weak, moderate and strong inside of two scenarios: sensibilities relatively high with high specificities and sensibilities relatively low with high specificities.*
- **KEYWORDS:** *Dependent diagnostic tests; Bayesian analysis; copula functions; Farley Gumbel Morgenstern (FGM) copula; Gumbel copula; Clayton copula.*

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