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Risk Factors for Defective Autoparts Products Using Bayesian Method in Poisson Generalized Linear Mixed Model

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Abstract : This research investigates risk factors for defective products in autoparts factories. Under a Bayesian framework, a generalized linear mixed model (GLMM) in which the dependent variable, the number of defective products, has a Poisson distribution is adopted. Its performance is compared with the Poisson GLM under a Bayesian framework. The factors considered are production process, machines, and workers. The products coded RT50 are observed. The study found that the Poisson GLMM is more appropriate than the Poisson GLM. For the production Process factor, the highest risk of producing defective products is Process 1, for the Machine factor, the highest risk is Machine 5, and for the Worker factor, the highest risk is Worker 6.

Keywords : defective autoparts products, Bayesian framework, generalized linear mixed model (GLMM), risk factors
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