

## ANALISIS REGRESI COUNT DATA UNTUK PEMODELAN JUMLAH KASUS PENYAKIT TUBERKULOSIS DI KABUPATEN BANYUMAS

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| <b>Title</b>          | ANALISIS REGRESI COUNT DATA UNTUK PEMODELAN JUMLAH KASUS PENYAKIT TUBERKULOSIS DI KABUPATEN BANYUMAS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <b>Abstract</b>       | <p>ABSTRACT. Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis. Banyumas Regency is one of the districts with quite high Tuberculosis cases in Central Java. This study aims to analyze the factors that affect the number of tuberculosis cases in Banyumas Regency using regression analysis of count data. Poisson regression is the simplest count data regression model that has the assumption of equidispersion, that is, the mean value equal to the variance. However, in its application, these assumption is often not fulfilled, for example, there are cases of overdispersion (variance value is greater than the mean). In this study, to overcome the case of overdispersion, an approach was used using Generalized Poisson Regression (GPR) and negative binomial regression. The results showed that the data on the number of tuberculosis cases in Banyumas Regency in 2019 was overdispersion. The data modeling of the number of tuberculosis cases in Banyumas Regency with the negative binomial regression model is better than the GPR model. Meanwhile, the only predictor variable that affects the number of tuberculosis cases in Banyumas Regency is the sex ratio of productive age (15-49 years). Keywords: tuberculosis, count data regression, Generalized Poisson Regression (GPR), negative binomial regression. ABSTRAK. Tuberkulosis merupakan salah satu penyakit menular yang disebabkan oleh Mycobacterium Tuberculosis. Kabupaten Banyumas merupakan salah satu kabupaten dengan kasus Tuberculosis (TB) yang cukup tinggi di Jawa Tengah. Penelitian ini bertujuan untuk menganalisis faktor-faktor yang mempengaruhi jumlah kasus tuberkulosis di Kabupaten Banyumas menggunakan analisis regresi count data. Regresi Poisson merupakan model regresi count data paling sederhana yang memiliki asumsi equidispersi yaitu nilai mean sama dengan variansi. Namun, pada pengaplikasiannya asumsi tersebut sering tidak terpenuhi, misalnya terdapat kasus overdispersi (nilai variansi lebih besar daripada mean). Dalam penelitian ini, untuk mengatasi kasus overdispersi dilakukan pendekatan menggunakan Generalized Poisson Regression (GPR) dan regresi binomial negatif.. Hasil penelitian menunjukkan bahwa data jumlah kasus tuberkulosis di Kabupaten Banyumas tahun 2019 mengalami overdispersi. Pemodelan data jumlah kasus tuberkulosis di Kabupaten Banyumas dengan model regresi binomial negatif lebih baik dibandingkan model GPR. Sementara itu, satu-satunya variabel prediktor yang berpengaruh terhadap jumlah kasus tuberkulosis di Kabupaten Banyumas yaitu rasio jenis kelamin usia produktif (15-49 tahun). Kata kunci: tuberkulosis, regresi count data, overdispersi, Generalized Poisson Regression (GPR), regresi binomial negatif.</p> |
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