

ABSTRAK

Pada penelitian ini dikaji faktor-faktor yang mempengaruhi angka kasus tuberkulosis di Jawa Tengah tahun 2020. Hal ini dikarenakan tuberkulosis menempati urutan kedua penyebab kematian tertinggi di Indonesia, dan pada tahun 2020 Jawa Tengah menduduki urutan ketiga untuk kasus tuberkulosis terbanyak di Indonesia. Angka kasus tuberkulosis di Jawa Tengah mencapai 113 kasus per 100.000 penduduk dengan nilai rata-rata sebesar 106,85 dan nilai variansi 1970,94. Kasus tertinggi terjadi di Kota Surakarta dengan 222,1 kasus per 100.000 penduduk, sedangkan kasus terendah terjadi di Kabupaten Karanganyar dengan 40,7 kasus per 100.000 penduduk. Adapun faktor yang diduga mempengaruhi angka kasus tuberkulosis adalah persentase akses layanan sanitasi layak, persentase rumah tangga ber-PHBS, persentase tempat umum sehat, persentase pendidikan tertinggi SMA/ sederajat, dan persentase penduduk miskin. Angka kasus tuberkulosis beserta faktor yang mempengaruhinya dimodelkan menggunakan metode regresi nonparametrik *spline truncated* karena hubungan antara angka kasus tuberkulosis di Jawa Tengah dengan faktor yang diduga mempengaruhinya tidak membentuk pola tertentu. Berdasarkan hasil penelitian, model terbaik dari nilai *Generalized Cross Validation* (GCV) minimum diperoleh pada kombinasi titik *knot* (1, 3, 2, 3, 1) dengan nilai GCV sebesar 0,52. Dari model tersebut, diketahui bahwa seluruh faktor berpengaruh signifikan terhadap kasus tuberkulosis di Jawa Tengah, dengan nilai koefisien determinasi sebesar 92,56%. Artinya, model mampu menjelaskan keragaman kasus tuberkulosis di Jawa Tengah sebesar 92,56%.

Kata Kunci: tuberkulosis, nonparametrik *spline truncated*, GCV, titik *knot*

ABSTRACT

This research aims to study the factor affecting the number of tuberculosis cases in Central Java during 2020. This research is important due the fact about that the second highest deals in Indonesia is caused by tuberculosis. Besides, in 2020, the tuberculosis cases in Central Java is in the third place of the highest case in Indonesia. The number of tuberculosis cases in Central Java reached 113 cases per 100,000 people with a mean of 106.85 and a variance of 1970.94. The highest case occurred in Surakarta City with 222.1 cases per 100,000 people, while the lowest case occurred in Karanganyar Regency with 40.7 cases per 100,000 people. The factors thought to affect the number of tuberculosis cases are the percentage of access to proper sanitation services, the percentage of households with a clean and healthy areas, the percentage of healthy public places, the percentage people finishing high school of the highest education, and the percentage of poor people. The number of tuberculosis and the factor affecting this number are modeled using a spline truncated nonparametric regression method. This is because the relationship between the number of tuberculosis in Central Java and the factors does not have a specific type of plot. The results show the best model of the minimum Generalized Cross Validation (GCV) value is the model with the knot point combination (1, 3, 2, 3, 1), which has a GCV value of 0.52. This model, indicates that all factors have a significant effect on tuberculosis cases in Central Java, with a coefficient of determination of 92.56%. This means that, the model can explain the diversity of tuberculosis cases in Central Java by 92.56%.

Keywords: *tuberculosis, nonparametric spline truncated, GCV, knot point*

