

## ABSTRAK

**Latar Belakang:** Sejak ditetapkan sebagai PHEIC, jumlah kasus Covid-19 terus meningkat. Kabupaten Sleman menyumbang 35,69% kasus dengan 21.575 kasus positif. Intervensi Covid-19 di Kabupaten Sleman memerlukan pemetaan yang dapat mengidentifikasi faktor risiko terkait kondisi sosiodemografi dan lingkungan. Penelitian ini bertujuan untuk mengidentifikasi sebaran spasial dan faktor risiko yang berhubungan dengan kejadian Covid-19 di Kabupaten Sleman.

**Metode:** Penelitian ini menggunakan perangkat lunak sistem informasi geografis (SIG) untuk memetakan sebaran spasial kasus Covid-19. Korelasi Pearson dan regresi linier digunakan untuk menguji hubungan antara variabel yang dipilih dan kejadian Covid-19. Autokorelasi spasial kasus Covid-19 dilakukan dengan menggunakan Moran's I dan LISA. Geographical weighted regression (GWR) dan Multi-scale GWR (MGWR) digunakan untuk menguji di tingkat lokal.

**Hasil:** Kejadian Covid-19 di Kabupaten Sleman paling banyak terjadi pada laki-laki (53,37%). kelompok usia 25-34 tahun (18,42%), dan gejala yang paling banyak dialami adalah gejala ringan (78,95%). Analisis multivariat menunjukkan bahwa faktor risiko yang berhubungan dengan kejadian Covid-19 di Kabupaten Sleman adalah keberadaan fasilitas perbelanjaan dengan nilai koefisien 10,02 (p-value <0,001; 95% CI = 3,99-16,05). Model MGWR terbukti menjadi model yang paling tepat dalam mendeskripsikan kejadian Covid-19 di Kabupaten Sleman (adj R<sup>2</sup>=0,643; AIC<sub>c</sub>=177,14).

**Kesimpulan:** Pendekatan spasial terbukti mampu digunakan dalam upaya pencegahan penyebaran Covid-19 di Kabupaten Sleman. Upaya pemantauan Pembatasan Sosial Berbasis Mikro (PSBM) dan kampanye vaksinasi Covid-19 dapat lebih difokuskan pada daerah yang memiliki fasilitas perbelanjaan lebih banyak dan padat penduduk.

**Kata Kunci:** Covid-19, GWR, MGWR, fasilitas perbelanjaan, kepadatan penduduk

## ***ABSTRACT***

**Background:** Since being declared as a PHEIC, the number of Covid-19 cases has continued to increase. Sleman Regency contributed 35.69% of cases with 21,575 positive cases. Covid-19 intervention in Sleman Regency requires mapping that can identify risk factors related to sociodemographic conditions and environment. The characteristics of the Covid-19 data available at the Health Office allow to conduct a spatial analysis approach. This study aimed to identify spatial distribution and risk factors related to the occurrence of Covid-19 in Sleman Regency.

**Method:** This study used the geographical information system (GIS) software to map the spatial distribution of Covid-19 cases. Pearson correlation and linear regression was used to examining the relationship between the selected variables and Covid-19 incidence. The spatial autocorrelation of the Covid-19 cases was carried out using Moran's I and LISA. Geographical weighted regression (GWR) and Multi-scale GWR (MGWR) were used to examine at local level.

**Result:** The most cases of Covid-19 in Sleman Regency occurred in men (53.37%), the age group of 25-34 years (18.42%), and the most experienced symptom category was mild symptoms (78.95%). Multivariate analysis result showed that shopping facilities (coeff =10,02; p-value <0,001) and population density (coef=0,0004; p-value <0,001). MGWR model has proven to be the most appropriate in describing the incidence of Covid-19 in Sleman Regency (adj R<sup>2</sup>=0,643; AICc=177,14).

**Conclusion:** The spatial approach is proven to be able to be used in efforts to prevent the spread of Covid-19 in Sleman Regency. Micro-Based social restriction monitoring efforts and Covid-19 vaccinations campaign can be more focused on areas that have more shopping facilities and are densely populated.

**Keywords:** Covid-19, GWR, MGWR, shopping facilities, population density