Kajian Spasial Pengaruh Kondisi Lahan Terhadap Ketersediaan Jaringan Internet Service Provider Telkomsel di Kecamatan Parakansalak, Kabupaten Sukabumi = Spatial Study of the Effect of Land Conditions on the Availability of Telkomsel's Internet Service Provider Network in Parakansalak District, Sukabumi Regency

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Abstrak

Kecakapan digital menjadi salah satu upaya pencapaian target SDGs yang tercantum pada SDG Tujuan 9 poin c. Salah satu faktor penyebab ketimpangan akses internet yaitu ditemukan masalah pengaksesan, terutama di tempat-tempat dataran tinggi seperti gunung dan sekitarnya. Selain itu, keadaan muka bumi yang berbeda di beberapa titik dapat mempengaruhi penerimaan sinyal. Salah satu kecamatan di Kabupaten Sukabumi, yaitu Parakansalak rupanya hanya memiliki satu lokasi tower BTS dimana mampu berpengaruh terhadap pengaksesan internet. Berdasarkan survei lapang, provider Telkomsel sebagai anak perusahaan BUMN yang seharusnya mampu mengungguli provider lainnya justru berkualitas buruk pada wilayah tersebut. Maka, perlunya dukungan perluasan coverage area dari jaringan ISP Telkomsel yang dapat dilihat dari sisi kondisi lahan agar tercapainya kemudahan akses dan bebas hambatan. Analisis yang dilakukan yaitu analisis spasial yang dibantu oleh SIG. Selain itu, dilakukan pengukuran Quality of Service (QoS), signal strength, dan internet speed untuk memvalidasi performansi jaringan. Kemudian, menggunakan teknik overlay, analisis buffer dan analisis korelasi untuk memperlihatkan hubungan dengan kondisi lahan dari wilayah penelitian yakni Kecamatan Parakansalak, Kabupaten Sukabumi. Kondisi lahan yang diteliti mencakup jarak dengan BTS, arah hadapan lereng, bentuk medan, dan tutupan lahan. Hasil menunjukkan, dari ketiga pengukuran yaitu Quality of Service, Signal Strength, dan Internet Speed didapatkan pola spasial yang berbeda. Pola spasial internet speed terlihat paling sesuai jika dihubungkan dengan kondisi lahan. Selain itu, berdasarkan pengaruh atas ketersediaan ISP Telkomsel, didapatkan hasil bahwa arah hadapan lereng berpengaruh, bentuk medan tidak terlalu berpengaruh, tutupan lahan tidak terlalu berpengaruh, dan jarak ke BTS berpengaruh. Dengan adanya penelitian ini diharapkan dapat menjadi acuan pemerintah, instansi, akademisi, maupun masyarakat untuk memperbaiki akses internet di Indonesia dengan membangun infrastruktur BTS secara merata

.....Digital skills are one of the goals to achieve the SDGs targets that listed in SDG Goal 9 point c. One of the factors causing inequality in internet access is access problems, especially in high-altitude areas such as mountains and their surroundings. In addition, different ground conditions at several points can affect signal reception. One of the sub-districts in Sukabumi Regency, Parakansalak District apparently only has one BTS tower location which can affect internet access. Based on a field survey, Telkomsel's provider as a subsidiary of BUMN, which should be able to outperform other providers, is actually of poor quality in that area. So, it is necessary to support the expansion of the coverage area of Telkomsel's ISP network which can be seen from the side of the land conditions in order to achieve easy and barrier-free access. The analysis carried out is spatial analysis assisted by GIS. In addition, measurements of Quality of Service (QoS), signal strength, and internet speed were carried out to validate network performance. Then, using overlay techniques, buffer analysis and correlation analysis to see the relationship with the land conditions of the

research area, Parakansalak District, Sukabumi Regency. The conditions of the land studied included the distance to BTS, the direction of the slope, the shape of the terrain, and land cover. The results show that from the three measurements, Quality of Service, Signal Strength, and Internet Speed, different spatial patterns are obtained. The spatial pattern of internet speed seems to be the most suitable if it is related to the condition of the land. In addition, based on the effect on the availability of Telkomsel's ISP, the results show that the direction of the face of the slope has an effect, the shape of the terrain is not too influential, the land cover is not too influential, and the distance to BTS has an effect. With this research, it is hoped that it can become a reference for the government, agencies, academics, and the public to improve internet access in Indonesia by building BTS infrastructure evenly.