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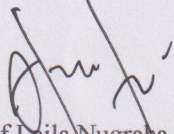Kategori Publikasi Jurnal Ilmiah :
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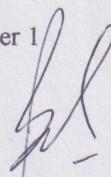| Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
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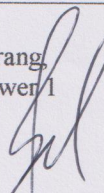
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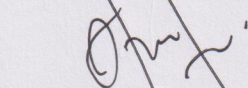
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Land Price Modeling with Radial Basis Function (Case Study: Utan Kayu Selatan Village, East Jakarta)

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Abstract

The price of land is an important matter that needs to be assessed by stakeholders. The study of land prices has an important role in seeing the stability of the property market. Several factors affect the property business such as accessibility, public facilities and social facilities. Utan Kayu Selatan is the largest village in Matraman Sub-District with an area of 1,12 kilometers. The potential of the property business is very tempting for investors to property developers. One of the economic sector developments is Utan Kayu Raya Road, which can increase land prices in the surrounding area. The factors that influence land prices can be analyzed through several approaches such as regression, mass appraisal and other. In this study, the method used in estimating land prices is the Radial Basis Function (RBF), by looking at the relationship between the distance of plot to roads, public facilities and social facilities. Modeling is carried out based on samples determined on ZNT and NJOP land prices. Furthermore, the calculation of the distance is done by using network analysis. As a result, the RMSE value for the NJOP RBF model and the ZNT RBF model is IDR 1.179.839 and IDR 2.972.345. Meanwhile, the CoV values for both models were 6.2% and 6%. In the comparison of ZNT price predictions with market prices, the highest difference is IDR 13.119.915 and the lowest difference is IDR 537.009. While on the NJOP price prediction, the highest difference is IDR 15.797.583 and the lowest difference is IDR 291.270.

Keywords: Land Price, Mathematical Model, RBF

1. Introduction

The study of land prices has an important role in seeing the stability of the property market. The development of land prices is quite volatile in terms of various aspects such as spatial planning, supporting infrastructure and socio-economic policies. Starting from this, property investors, property developers and the government as the regulator must pay attention to the latest land price developments. Land prices can be predicted through various approaches, one of which is the sales comparison approach using regression analysis. Regression analysis is used to predict the value of the dependent variable, such as predicting the selling price of a house containing physical variables, assuming that these physical variables influence the house's selling price (Harjanto & Hidayati, 2003).

Several studies regarding land price prediction approach such as Husna (2016) estimate and simulate land prices using the Radial Basis Function (RBF) with an error output of 32,5% for 16 center points and 23,9% error for 29 center points. Sampathkumar et al. (2015) conducted modeling and prediction of land prices in Chennai Metropolitan Area (CMA), Tamilnadu, India, using multiple linear regression and neural networks. The results obtained are that both models are good, with a correlation of 98% for neural networks and 96% for multiple linear regression.

In this study, researchers conducted land price modeling using the Radial Basis Function (RBF) in Utan Kayu Selatan Village, East Jakarta. Utan Kayu Selatan is the largest village in Matraman Sub-District, East Jakarta, with an area of 1,12 square kilometers (Badan Pusat Statistik Jakarta Timur, 2018). The wide coverage area is certainly advantageous for property investors to developers in property investment, supporting easily accessible facilities. Based on rumah.com, the development of residential land prices in East Jakarta ranks the highest compared to other Jakarta cities with a

Development of K$_d$(490) Algorithm Using Medium Spatial Resolution Landsat 8 Oli Arround Shallow Waters In Panggang Island

Budhi Agung Prasetyo [1,2]*, Wikanti Asriningrum [3], Vincentius Paulus Siregar [4]

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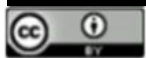
Abstract

The state of water quality around Panggang Island, Seribu Islands, in recent decades, experienced degradation caused by human activities. The parameter of the diffuse attenuation coefficient (K$_d$) is an important optical property-related attenuation of light in the water column and its brightness. Landsat 8 data has the potential to map the value of K$_d$(490) in regional waters in Indonesia. Landsat 8 data could provide solutions to spatial data availability of K$_d$(490) values in addition to Ocean Color data. This research aimed to develop an empirical algorithm of Landsat 8 data to derive K$_d$(490) value, that can be used as tools for monitoring water quality optically on a regional scale, which could not be done by Ocean Color data that has spatial resolution limitation. The in-situ measurement of radiometric data was done using the TriOS-RAMSES hyperspectral spectroradiometer with a range of 320 – 890 nm and a spectral sampling of 3.3 nm shallow-waters around Panggang Island. The development of the K$_d$(490) algorithm was done by simulation on the ratio of Green, and Near-infrared band has great determination values with K$_d$(490) empirically. That empirical algorithm can be applied on Landsat 8 data to derive its values. It is also noted that the shallow-waters around Panggang Island, dominant affected by absorption of chlorophyll-a rather than scattering by suspended solids.

Keywords: Diffuse Attenuation Coefficient, K$_d$(490), Landsat 8, Ocean Color, Algorithm

1. Introduction

In recent decades, the state of Seribu Island had been experienced degradation caused by human activities, such as fishery and recreational activities. Had been known that water quality in the waters around Seribu Island decreases due to an increase in human activities from the Jakarta Bay and shipping activities from Jakarta Bay to Seribu Island. One of the water quality that has been changed over time was water transparency. Parameters of water transparency can be monitor by approaching of remote sensing technology, such as the diffuse attenuation coefficient. The study of diffuse attenuation coefficients to determine the degree of water transparency based on the light attenuated into the water column has generally been done by the

Ocean Color research community around the world (IOCCG 2000; IOCCG 2006). In Indonesia, the development of remote sensing technology for ocean color monitoring (Ocean Color) is commonly done. Ocean Color data has wide usage in Indonesia because of geographical conditions in Indonesia, consisting of hundreds of small islands that are widespread. In addition to being used for monitoring on extensive coverage area, Ocean Color data is also being used to extract information at small geographic coverage in an area, such as the application of the change in diffuse attenuation coefficient (K$_d$(490)) over Seribu Island, DKI Jakarta, Indonesia.

The Geographic Information System of The Distribution of Larva Free Rates in Kediri City Area

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Abstract

The larvae absence rates are the proportion of houses with negative larvae with respect to the number of inspected houses. The lower the mosquito larvae absence rates, the greater the possibility of dengue transmission at the research site, since the dengue transmission radius is 100 meters from the patient's location. Kediri City Government now does not have any Geographic Information System to represent mosquito larvae free rates. Since a lack of representation of the larvae free rate distribution makes the monitoring process for larva free rates per region less effective and efficient. Therefore, a geographic information system must describe the distribution of Mosquito larva absence rate in the Kediri City area. The design and development of this geographical information system are carried out using two methods: the data collection method by conducting interviews with the staff in the Kediri City Health Office, observing and looking for references related to research.

The Geographical Information System for the Distribution of Larva Free Rates in Kediri City was successfully designed and built, enabling the distribution of larva free rates in the form of markers and polygon on a map. The Geographical Information System for the Distribution of Larva Free Numbers in Kediri Regency was built use PHP, HTML, CSS, JavaScript, MySQL, and the laravel framework.

The existence of a Geographical Information System for the Distribution of Larva Free Rates helps the Kediri District Health Office recapitulate data and monitor the risk of the distribution of larva numbers in the Kediri Regency area..

Keywords: *Geographic Information System, Kediri Regency, Larvae Free Numbers*

1. Introduction

The development of science and technology, which is marked by advances in communication and information technology, puts a nation in a position to which the nation has advanced based on how far the nation has mastered the two fields (H. D. Utomo and E. Mulyanto, 2010). Geographical information systems also include technological advances in collecting, examining, integrating, and analyzing information relating to the earth's surface. So that with the construction of a geographic information system, solving problems related to the information obtained will be more comfortable. Dengue hemorrhagic fever is caused by the dengue virus and is transmitted through the bite of aedes aegypty mosquito. Dengue hemorrhagic fever is still a significant problem because it can cause outbreaks at certain times that are difficult to predict. Dengue hemorrhagic fever has

been classified as an epidemic disease in the infectious disease outbreak law no. 4 of 1984 (E. Nuryanti, 2013). Larva Free Rate (ABJ) is the proportion of negative larva houses with the number of inspected houses. The lower the ABJ shows, the greater the possibility of dengue transmission in the survey location, considering that the DHF transmission radius is 100 meters from the patient's location. According to the Minimum Service Standards (SPM), the minimum ABJ value to limit the spread of DHF is 95% (DKK Semarang, 2007). In the middle of January, there were 265 victims, both suspect, and positive dengue fever. Of that number, there were 9 fatalities due to diseases caused by the Aedes aegypti mosquito. In fact, if compared to December 2018, according to data from the Kediri Health Office, the number of dengue patients was only around 205 sufferers. Hence the half-month of January this is considered relatively high. From the same data