

SPATIAL ANALYSIS APPLICATION TO REVEAL THE DIMINI

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SPATIAL ANALYSIS APPLICATION TO REVEAL THE DIMINISHING CRIME RATE PHENOMENON CAUSED BY PRAYING

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ABSTRACT

This paper focuses on the use of spatial analysis applications to uncover a phenomenon of reduced crime rates with prayer. The number of crime rates and congregational shubuh prayer participants at locations with north latitude and east longitude points adjacent to or at the same location will be mapped using spatial technique. The two opposite maps have been produced in this study. The areas that are certainly known for the number of higher shubuh prayer participants in congregation would produce regions with low crime rates and vice versa.

Keywords: Mapping technique, criminality, shubuh prayer, Pekanbaru.

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1. INTRODUCTION

Islam is a religion based on the Holy Qur'an. Many natural phenomena revealed by researchers are in line with what the Qur'an had revealed thousands of years ago. Espidkar and Hassani [1] have studied and revealed genetic problems very well. They agreed that the genetic problems they encountered had no different from the information of genetic problems which had been explained in Al Qur'an. Mahdi et al. [2] had conducted research on human biological development including human reproductive problems. This study also did not conflict with what is explained in the Qur'an especially on human reproduction. Bagheri et al. [3] revealed clearly about the physical and chemical events contained in the Qur'an. Purbafrani et al. [4] tried to uncover clearly the benefits of honey as reported in the Qur'an. The results of their research are also in line with the explanation contained in the Holy Qur'an, even the results of these studies can reveal more deeply and eventually the results of this study have made extraordinary contributions to reveal the truth contained in the Qur'an. Subandi [5] has given excellent explanation about some science phenomena. The phenomenon that he has researched is very much in accordance with what has been preached in the Qur'an. In the field of information technology, Basabrain et al. [6] have contributed a huge contribution in revealing the scientific facts in the Qur'an by producing a search engine that can help in the search for scientific problems in the Qur'an. In Qur'an surah 29 verse 45, it is said that prayer prohibits immorality and wrongdoing, today many people, especially muslim, believe that one of ways to overcome the level of criminality is by establishing prayer. The Surah clearly states that prayer can prevent evil and evil acts. This phenomenon certainly requires a scientific explanation that can convince people in general or in other words for all humanity not only limited by Muslims. The explanation of this phenomenon is certainly not accurate if it is proven to individuals, there will be many contradictions obtained. For example, a person who diligently worships or prays accompanied by a disgraceful act and this certainly does not reflect what is meant in surah 29 verse 45. This fact is certainly not very appropriate to be used as an excuse in doubting the Qur'an. For this reason, it is need an appropriate technique which is able to reveal the truth contained in Qur'an surah 29 verse 45. A thorough explanation that can connect the events that prayer established by residents in an area and the reducing of crime rates in this area is the very good at revealing the case in this study.

Spatial analysis is a technique for mapping a problem in a particular area by using a limited amounts of data, and it is followed by the information of the location of the north latitude and east longitude of a region. Spatial analysis has studied and reviewed for health and environmental application in Malaysia [7-12]. Ratcliffe [13] has used mapping techniques to see the potential criminality that occurred in New York, moreover Olajuyigbe et al. [14] used the spatial analysis or mapping to see the development of crime in Nigeria. This technique of course can also be used to uncover social phenomena which had been said in Qur'an surah 29th verse 45. In this study, data on the number of congregational shubuh prayer participants in several mosques or mushollah and the value of crime numbers obtained from the police office from the same area, by ensuring the location of the east longitude and north latitude in the area of Pekanbaru City that will be used to produce two types of maps. The maps resulted are the crime number map and the map of the number of shubuh prayers in the

Pekanbaru area. Furthermore these maps will be analyzed and compared to have the answer of the phenomenon.

3. MATERIAL AND METHODS

This study was conducted in Pekanbaru. Furthermore, data on the number of congregational shubuh prayer participants in several scattered mosques in 13 sub-districts and data on the number of crime rates from several police stations of the same level as Polres (Resort Police of the Republic of Indonesia) will be utilized to major material in this research. In this study, data on the major of congregational shubuh prayer participants in mosques and the crime rates obtained from police stations adjacent to mosques which were sampled in this study are attached on Tables 1 and 2 respectively.

Table 1 The number of congregational shubuh prayer participants in mosques in Pekanbaru

Latitude	Longitude	The mean of congregational shubuh prayer participants	Sub-district	Mosque names
0.46861111	101.455639	25.666666667	Bukit Raya	Al Ikhlas
0.46105556	101.45425	25.4	Bukit Raya	At Taqwa
0.53608333	101.462306	37.2	Lima Puluh	Al Mukmin
0.54008333	101.452583	41.466666667	Lima Puluh	Al Furqon
0.45530556	101.42175	27.2	Merpoyan Damai	Al Furqon
0.44625	101.439722	35.4	Merpoyan Damai	As Syafi'i
0.52361111	101.424278	33.666666667	Payung Sekaki	Masjid Paripurna
0.50861111	101.400361	26.333333333	Payung Sekaki	Darul Hikmah
0.52061111	101.44575	26.866666667	Pekanbaru Kota	Muslimin
0.5765	101.397806	11.066666667	Rumbai	Al Ikhwan

Table 2 The number of crimes in Pekanbaru

Latitude	Longitude	Crime Number	Police Sector
0.469527778	101.45525	21	Bukit Raya
0.49775	101.3941944	19	Lima Puluh
0.500944444	101.3891667	28	Merpoyan Damai + payung Sekaki
0.524416667	101.4470278	13	Pekanbaru Kota
0.605166667	101.4306389	7	Rumbai
0.565388889	101.4474444	10	Rumbai Pesisir
0.537777778	101.4370556	17	Sail+Senapelan
0.516222222	101.4331111	5	Sukajadi
0.465166667	101.3878444	20	Tampan
0.475194444	101.5158611	17	Tenayan Raya

This research heavily relies on the data attached on the Table 1 and 2. The data is dubbed as spatial data. Spatial data is the data of an event accompanied by north and east latitude points. The spatial data will produce a good information if it is analyzed using spatial analysis. The spatial analysis would usually analyze a problem at a particular area by using mapping. This mapping is generated through the kriging method, where briefly this method is operated to obtain value of studied problems from a place by using information in the surrounding area. The GIS, Map Info and Surfer software are often utilized by researchers in mapping field to gain a map at issue in an area. The resulting map is able to provide a complete information in analyzing events in a region. The map, in generally, describing certain values, such as the smallest, medium, and highest event values in an area can be determined accurately.

3. RESULTS AND DISCUSSIONS

The two mappings carried out in this study were conducted by using the SURFER version 8 software, where the mapping for the shubuh prayer participants can be given as Figure 1 and the mapping or crime number can be given as Figure 2. The resulting map means that the yellow color indicates the low or small value of event, and the more green the greater the value of the event. In Figure 1 it can be seen that the majority of the shubuh prayer participants in the Pekanbaru area are still low. There are some areas where the prayer participants are quite high (marked in green on the map) such as the North and a little in the downtown area of Pekanbaru.

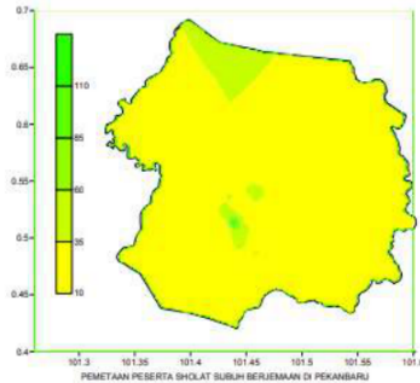


Figure 1 The map of congregational shubuh prayer participants in Pekanbaru

We can see that the number of crime rates on Figure 1 and Figure 2 are so different. On the Figure 2, it seems that North and a little in the downtown area of Pekanbaru tend to have the smallest (marked by yellow).

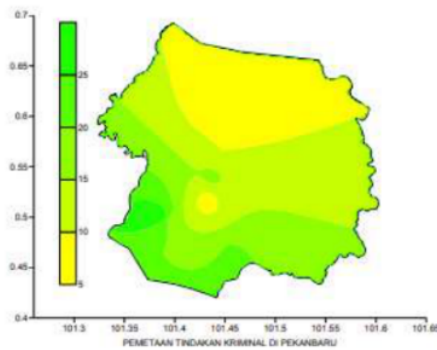


Figure 2 The map of crime rates in Pekanbaru

From Figure 1 and Figure 2, we can ensure that the number of shubuh prayers and crime rates is opposite. This would clearly verify that in a particular area, the phenomenon of criminality numbers could be less by increased shubuh prayers in congregation. In addition, a field test was performed well for strengthening this research and also one opposite region in the two Figures located on coordinate points 0.514227205679 and 101.438765431 would be surveyed. Furthermore, Google Map is helping tool to determine an unknown region on given

coordinate, provided on Figure 3. The field test, carried out for several weeks in the area referred to in Figure 3, obtained that a mosque having many shubuh prayer participants enjoys a tranquil social life as the crimes are less. A real fact in this field study is the cooperation tradition of local residents and the religious activity are quite active and the communities on Figure 3 know one another.

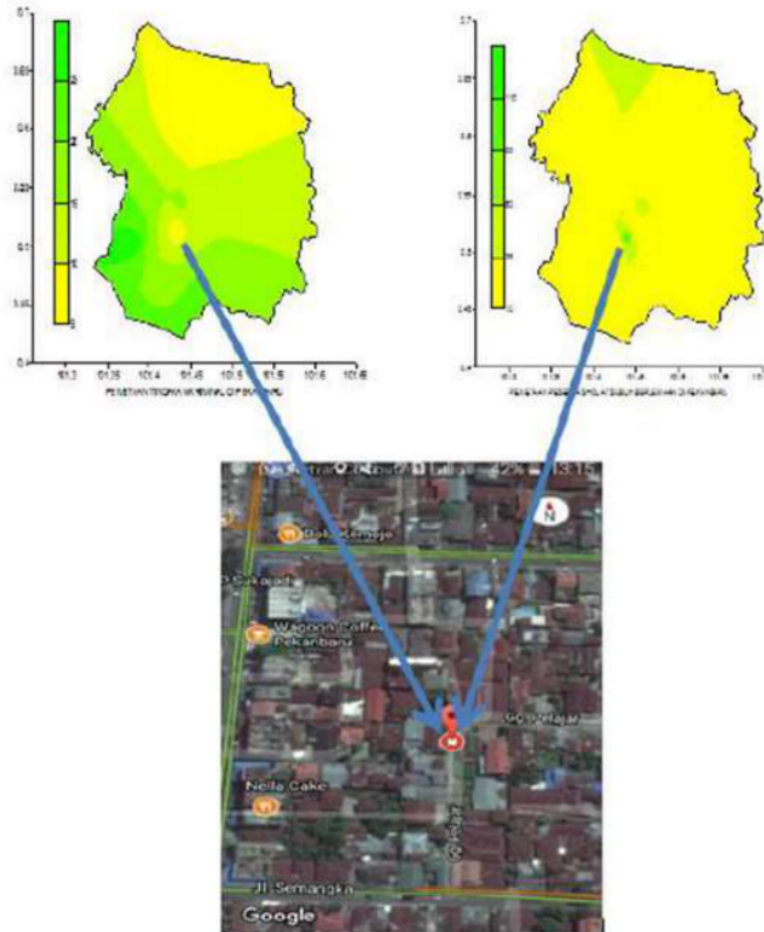


Figure 3 The map of congregational shubuh prayer and the map of crime rates in Google Map

4. CONCLUSION

Phenomena related to social problems that have been written thousands of years ago in the Qur'an (surah 29 to 45) can be easily explained through mapping techniques, spatial analysis. Through the comparison of maps produced, it can be seen clearly that the two opposite maps can show the opposite of two problems in one area. In this case it can also be concluded that the number of crime rates would probably decrease as long as the number of congregational shubuh prayer participants rises. Not only do Muslims accept this scientific method, but also other religions can willingly accept too.

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