

Spatial Distribution of Poverty Incidence in Peninsular Malaysia

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To my Beloved Father and Mother and my nice Family

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First of all I would love to thank all my family members, who have been patiently my source of encouragements and support. Without them I would have never been in this position. Their never-ending supports have given me hope to stand on my own.

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ABSTRACT

The purpose of this study is to find out the spatial distribution of poverty incidence in Peninsular Malaysia and the type of relationship the poverty distribution has with different factors. Hot spot analysis has been applied in this study to find out where the poor people are clustered by using Zone of Indifference method and distance band of 21000 meters. Geographically Weighted Regression (GWR) was used to examine the type of relationship Standardized Poverty Rate (SPR) have with three explanatory variables of percentage of Non Primary Agricultural Area (NPAA) in each mukim, Road Density of each mukim, and Distance between mukim centroids and district capital city. All of the analyses were done by using ArcGIS10.0 software. The research found out that there are hot spots of poor people located in North East of Peninsular Malaysia in Kelantan and Terengganu states. There were positive and negative correlations between different variables and SPR and the type and quality of relationship is changing throughout the whole Peninsular Malaysia. The negative values in GWR maps show negative correlations and the higher negative value there is the stronger negative correlation is there. The positive values in GWR maps show positive correlations and the higher the value is the stronger positive relationship is.

ABSTRAK

Tujuan kajian ini adalah untuk mengetahui taburan ruangan kadar kemiskinan di Semenanjung Malaysia dan jenis hubungan taburan kemiskinan dengan faktor yang berbeza. Analisis hot spot telah digunakan dalam kajian ini untuk mencari di mana orang-orang miskin berkelompok dengan menggunakan Zon kaedah indicator dan band jarak meter 21000. Dari segi geografi Regresi wajaran (GWR) telah digunakan untuk memeriksa jenis Kadar Kemiskinan hubungan Bakukan (SPR) dengan tiga pemboleh ubah menghuraikan peratusan Kawasan Utama Pertanian Bukan (NPAA) dalam setiap mukim, Jalan Ketumpatan setiap mukim, dan Jarak antara sentroid mukim dan daerah ibu kota. Semua analisis telah dilakukan dengan menggunakan ArcGIS10.0 perisian. Kajian ini mendapati bahawa terdapat kawasan-kawasan panas orang miskin yang terletak di Timur Laut Semenanjung Malaysia di Kelantan dan negeri Terengganu. Terdapat positif dan negatif hubungan antara pemboleh ubah yang berbeza dan SPR dan jenis dan kualiti hubungan yang berubah-ubah di seluruh Semenanjung Malaysia. Nilai-nilai negatif dalam peta GWR menunjukkan korelasi negatif dan nilai yang lebih tinggi negatif ada korelasi negatif yang lebih kukuh di sana. Nilai-nilai positif dalam peta GWR menunjukkan korelasi yang positif dan tinggi nilai hubungan positif yang lebih kukuh.

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LIST OF SYMBOLS

| | | |
|------|---|--|
| HDR | - | Human Development Report |
| GDP | - | Gross Domestic Product |
| UNDP | - | United Nation Development Programme |
| PPP | - | Purchasing Power Parity |
| PPA | - | Participatory Poverty Assessments |
| OLS | - | Ordinary Least Squares |
| GWR | - | Geographically Weighted Regression |
| AIC | - | Akaike Information Criterion |
| CV | - | Cross Validation |
| SD | - | Standard Deviation |
| LISA | - | Local Indicator of Spatial Association |
| SPR | - | Standardized Poverty Rate |
| NPAA | - | None Primary Agricultural Area |

Chapter 1

INTRODUCTION

1.1 Background of the Study

Different papers have various points of view toward poverty definition and using of spatial statistics for distinguishing the poverty phenomena.

One of the most important issues for many countries and international organization such as The World Bank and The United Nations is how to deal with poverty. Hunger, lack of shelter and shortage of clothing, diseases, illiteracy are all existed in many countries and millions of people are suffering from them. In such countries efficiency and productivity of labor is way much less than other countries and they all cause a significant decrease in income. Another factor of poverty is being in a geographical region where countries are poor and in this condition lead to longer and deeper poverty.

Poverty is one the most important issues in almost every country around the world. Every government has faced such a problem and none of them have been able to diminish this phenomenon completely. Although some countries have been able to come up with solutions to decrease the rate of poverty, no country has been completely successful in this process. Even in most of the developed countries such as, US, UK and Australia poverty term has always been a serious issue. It seems with all the endeavors every government has done during the period of their services,

there has never been a complete achievement. This issue gets more serious when we look at developing countries and less developed countries, where there are more poor people and even the definition might be different. In most of the African countries a lot of people die because of bad economic situation, where a lot of them don't have a house or a place to live.

Poverty seems to be a more economic term rather than any other thing as it is mostly related to economic situation of people. It encompasses many other things as well since there is a strong correlation between economic problems and other ones. Poor people always will get poorer if nothing is done for them. They always will have problems with their lives. They cannot have enough income or a fixed amount of money. Then I guess they will probably think of illegal ways of earning money and that's the start point for a poor to become a criminal.

Improving the economic gap and reducing poverty has been an important mission for about a century. Social workers see historic, contemporary social structures, policies problems as a reason of inequitable distribution of resources among different people. Racism, sexism, ageism, homelessness, hunger, poor health, inadequate health care, family violence, and not enough educational opportunities are all part poverty and can't be separated.

The annual Human Development Report (HDR) is best document which include different prospective of poverty and it was published first in 1990. The report emphasize on how the focus of development shifted away from monetary to Gross Domestic Product (GDP) throughout the 20th century. It all started in 1954 when they proposed 12 components to encompass a wider image of quality of life and poverty, wealth and development in "Report on International Definition and Measurement of Standards and Levels of Living". After that in 1960s and 1970s they brought up a social indicator into the notion of standard of living in order to make it more comprehensive and get a better understanding of human well-being. After 1980s UNDP modified the poverty definition by bringing other dimensions of human well-being which was not necessarily income-based aspects.

The conceptual framework of the HDR is the so-called capability approach. UNDP in this report looks for “putting people back into the centre of development” in order to convey the idea of human being as the core of development as well as primary goals. Development should focus on facilitating their achievements, freedoms, and capabilities. “It is the life they lead that is of intrinsic importance, not the commodities or income that they happen to possess”. Human well-being is the ultimate goal. Based on this capability approach, human well-being can be enhanced by letting people enjoy their expanded freedoms. Freedom is a “constitutive role of development” which is basically a good and positive objective in development process. As a result individual will change from object to agent of process of development as freedom; hence they can change their own destiny rather than waiting for others to change theirs. Freedoms hence also have an instrumental role of development.

The approach shows how human efforts, skills and talents, i.e. and in total human capital can be above the physical capital and also how human development is above human capital. The latest role in development has changed. Economics is one the main tools in order to improve well-being and happiness of human while it used to be a primary goal of development. Seeking for freedom, dignity and well-being of human are stimulating human development.

Vision of development on wealth and poverty was magnified by conceptual framework and UNDP which is one of the main and successful leaps in development analysis and politics. A specific vision of poverty, wealth and development is addressed through all these processes of UNDP and human well-being.(Schimmel, 2007)

1.2 Statement of the Problem

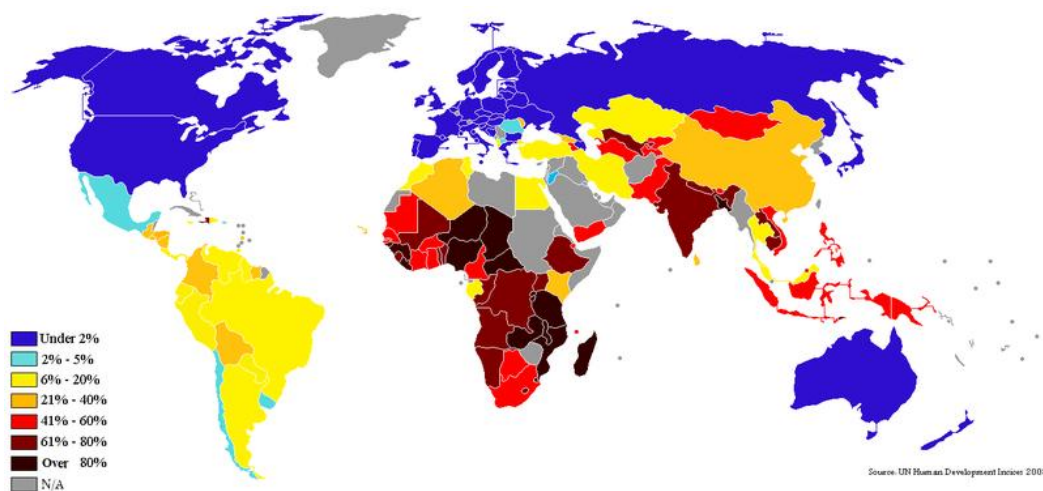
The process of urbanization is very fast the entire world around, and the rate of poverty is also increasing. We can see the poor almost everywhere such as rural areas, suburban areas, and urban areas and so on. We have to think of different

aspect of poverty to find out if this poverty is happening randomly or there are some factors which trigger this phenomenon. We should see the pattern of its distribution over a period of time in a specific to understand whether this is urban issue or rural or both.

Malaysia is a developing country in southeastern part of Asia where the development rate is very high and they targeted to be a developed country by 2020. If they are determined to reach that point they should be able to overcome many problems. One of them would be poverty which is really important in every single country around the world.

Malaysia is becoming a more industrialized country little by little and urban areas are becoming larger in terms of physical development and population. Most of the people like to live in the cities where there may be more job opportunities and a more comfortable life. 70% of the population is urban. 7.8% of people have the income of less than 2 us dollar a day. (WorldBank, 2010)

Figure 1-1 Poverty Rates in different countries



Source: UN Human Development Indices 2008

We need to find out the distribution pattern of the poor population within peninsular Malaysia in order to find out the different factors of this phenomenon. We need to see what parts of country are more influenced by poor economic situation. Poverty will definitely have deep effects on the whole country. Hence finding out different reasons of poverty may be so helpful in the process of planning. Also the correlation of poverty incidence with other factors such as environmentally sensitive areas, distance from major town and road density would be very important in this matter.

Finding out the autocorrelation between different neighboring areas, is applicable through spatial statistics. We may know how many poor people are living in Peninsular Malaysia, but we don't know where exactly they are or how they are distributed in different states and districts and mukims. We have to develop a GIS database of poverty incidence for Peninsular Malaysia in order to be able to have their location, so that we will be able to use spatial statistics analysis. Developing the GIS database is one of the important phases in doing this project as we need all the data related to poverty and other economic factors for every sub district. Using the GIS database will enable us to do some spatial statistics analysis which leads to the pattern of poverty distribution. It can be a completely random phenomena or it can be a clustered thing, or dispersed. However the pattern is; we will be able to realize the reason behind their distributions. The different correlation of the poverty incidence with other factors is another important aspect of this research which will be in Geographical Weighted Regression (GWR) format. Using GWR will help us understand how different factors are influencing the poverty incidence in any mukim.

Using the results of the research will be a part of planning process in which we can apply the results in defining different strategies and policies in facing poverty incidence. These strategies and policies should be able to minimize the economic gap between poor and rich people and also help to diminish the inequalities and improve the life quality of the poor population.

1.3 Purpose of the Study

This study tries to address a serious issue in Peninsular Malaysia which is poverty. There are quite number of poor households living in different states of Peninsular Malaysia. In this study we are trying to make a Spatial Database in which we will be able to locate the number of poor households in every mukim and it will help us to do the Autocorrelation Spatial Analysis. We need to do this study in order to be able to understand how critical the problem is, and if the problem so serious, which areas are at higher risks or lower. This study will help us in different aspects.

1.4 Research Questions

In this study there can be many questions which need to be answered and here are some of the most important questions this study is going to answer:

- i) What is the pattern of poverty distribution in Peninsular Malaysia?
- ii) In what areas poor people are concentrated?
- iii) Where are the hot spots and cold spots located?
- iv) What type of poverty Peninsular Malaysia is facing?
- v) Is there a correlation between poverty incidence and other aspects such as environmental issues, road density, distance from major towns and sensitive areas?

1.5 Objectives of the Study

Objectives of study will be completely related to the problem stated before. There following sentences are Objectives of this study:

- i) To develop a GIS Database of poverty incidence for Peninsular Malaysia
- ii) To spatially analyze the pattern of poverty distribution in Peninsular Malaysia by mukims, districts and states.
- iii) To study the spatial phenomenon of poverty by mukims in terms of it being 'random', 'clustered' or 'dispersed'.
- iv) To explain the factors behind the spatial phenomenon of the poverty incidence..
- v) To create a spatial map of *hot spot/cold spot* of poverty.
- vi) To create a Geographically Weighted Regression Model in order to understand the correlation between poverty incidence and different factors of poverty

1.6 Significance of the Study

The aim of this study is to address the poverty issue in Peninsular Malaysia and finding out the results of this study will be helpful to understand how significant the poverty incidence is in Peninsular Malaysia. Currently we don't know how poor people in this part of the country are spatially distributed. This study will lead us to understand if the pattern is happening randomly or it's clustered in some certain areas. In case it is clustered, where those areas are located in terms of urban or rural,

or distance to major towns. It is also really important to understand how different factors will affect poverty incidence. The product of this study will be useful in different future plans in every area in terms of economic and social sustainability.

1.7 Scope of the Study

This study is being done in Peninsular Malaysia based on the mukims. The available database is according to mukims. The target area of this study is Peninsular Malaysia which is consisted of 11 states and 1 federal territory. As it was mentioned before, poverty can have different definitions and meaning. In this study we are going to choose only one of them, and it will be the economic definition of a poor based on income. In this research people are considered poor if only their income is lower than poverty line which is 800 RM. ArcGIS10 was used to run the analysis tools of this research. Also the study will focus on the issue according to number of poor household in every mukim. The applied models are spatial autocorrelation by using Hot Spot Analysis, and Geographically Weighted Regression.

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