

**ANALYSIS QUALITY OF LIFE IN THE EAST
COAST OF PENINSULAR MALAYSIA USING
GEOGRAPHIC INFORMATION SYSTEM (GIS)**

CHANDRAMALAR D/O MUNUSAMI

**MASTER OF SCIENCE
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**Thesis Submitted in Fulfilment of the Requirement of the
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Economics
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DEDICATION

This project is dedicated to the entire members of my family

ABSTRACT

Abstract of thesis presented to the Senate of Universiti Malaysia Terengganu in fulfilment of the requirement for the degree of Masters of Science.

ANALYSIS QUALITY OF LIFE IN THE EAST COAST OF PENINSULAR MALAYSIA USING GEOGRAPHIC INFORMATION SYSTEM (GIS)

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JULY 2011

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Malaysia is a developing nation and moving forward to achieve sustainability in term of economics and social indicators. Malaysia's Quality of Life (QOL) report defines QOL as an encompassing personal advancement, a healthy lifestyle, access and freedom to pursue knowledge and attaining a standard of living. Study on QOL is gaining interest from a variety of discipline and becoming an important indicator for policy evaluation, rating for places, urban planning and management. In this study GIS is employed to analyze the QOL in East Coast of Peninsular Malaysia. GIS is a user-friendly interface developed to enhance the presentation of the study. This enables non-technical users to directly use the developed GIS application to explore different aspects. GIS is a dynamic tool which referred as computer-based

system that used to capture, store, edit, display and analyses geographically referenced data. Implementation of GIS in socioeconomics field is been limited. Advancement in GIS has allowed computing socioeconomic data and present with maps, tables and graphs. This study used secondary data for entire period of 1987-2008 and aims to identify the dynamic interface of QOL using GIS approach. Five components been demonstrated in this study, namely education, health, employment, industry and transportation and communication which attained under specific indicators in each cases. Ordinary least square (OLS), spatial autocorrelation and geographically weighted regression (GWR) was applied to explore the relationship between QOL and independent variables. Three categories of standard residual scores were identified and interpreted as low, intermediate and high score through this study. These categories viewed to find out the contribution of each component to QOL and mapped based on the GWR categories scores. The findings of this study show that industrial, transportation and communication contributed the highest value to QOL, while the employment contributes with lover volume of scores. In general, the findings of this study clearly indicate GIS as an important tool to analyze socioeconomic indicator in order to indentify the nature of sustainable development in East Coast of Peninsular Malaysia.

ABSTRAK

Abstrak tesis yang dikemukakan kepada Senat Universiti Malaysia Terengganu sebagai memenuhi keperluan Sarjana Sains.

Menganalisis Kualiti Hidup Masyarakat Pantai Timur Malaysia Dengan Menggunakan Sistem Maklumat Geografi

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JULAI 2011

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Malaysia merupakan sebuah negara membangun yang menuju selangkah ke hadapan untuk mencapai kelestarian pembangunan dari segi indikator ekonomi dan sosial. Laporan Kualiti Hidup Masyarakat Malaysia (QOL) mendefinisikan QOL sebagai merangkumi kemajuan peribadi, gaya hidup sihat, akses dan kebebasan untuk menimba pengetahuan dan mencapai kualiti hidup yang sewajarnya. Kajian mengenai QOL telah mendapat perhatian daripada pelbagai pihak dan menjadi petunjuk penting dalam proses penilaian dasar, penilaian lokasi, perancangan dan pengurusan bandar. Kajian ini menggunakan GIS untuk menganalisis QOL masyarakat Pantai Timur Semenanjung Malaysia. Penerapan dan penggunaan GIS dalam kajian sosioekonomi masih lagi terhad. Namun, perkembangan GIS

telah memudahkan kajian bidang berkaitan sosioekonomi dari segi penyimpanan data dan mempamerkan hasil kajian dalam bentuk graf, jadual serta peta. Kajian ini telah menggunakan data sekunder sepanjang tempoh 1987-2008 bertujuan untuk membuktikan kemampuan GIS dalam menganalisis kualiti hidup masyarakat. Sebanyak lima komponen ekonomi telah dianalisis untuk mengenal pasti tahap kualiti hidup masyarakat; iaitu pendidikan, kesihatan, gunatenaga, industri, pengangkutan dan komunikasi. Pendekatan kaedah kuasa dua terkecil (OLS), auto-korelasi separa dan kaedah Regresi geografi tertimbang (GWR) digunakan dalam kajian ini untuk menganalisis hubungan di antara kualiti hidup dengan komponen yang dipilih. Sebanyak Tiga kategori skor dikenal pasti melalui kajian ini, iaitu skor pada paras rendah, sederhana dan tinggi yang bertujuan untuk menganalisis setiap komponen QOL serta dipetakan mengikut skor yang diperolehi dari GWR. Hasil penemuan kajian menunjukkan nilai tertinggi QOL disumbangkan oleh komponen industri, pengangkutan dan komunikasi. Manakala komponen gunatenaga menjadi penyumbang QOL yang terendah. Secara umumnya, hasil penemuan kajian ini jelas membuktikan kemampuan GIS sebagai alat utama dalam menganalisis indikator sosioekonomi seiring dengan pembangunan mapan QOL masyarakat Pantai Timur Semenanjung Malaysia.