# LOCATIONAL AND SOCIO-ECONOMIC FACTORS IN DETERMINING WILLINGNESS-TO-ACCEPT FOR COASTAL DEVELOPMENT IN SUNGAI PAPAN, JOHOR

HAIRU NABILAH BINTI ISMAIL

A report submitted in partial fulfillment of the
requirements for the award of the degree of
Master of Engineering (Environmental Management)

Faculty of Civil Engineering
Universiti Teknologi Malaysia

JUNE 2017

Specially dedicated to my beloved parents,

*"One of the biggest blessings in the world is to have both of you as my parent".*

my siblings,

*"Brother and sister, together as friends, ready to face whatever life sends"*

and my friends.

*"A friend is someone who makes it easy to believe in yourself"*

Thank you for your pray, attention and spiritual support…

## ACKNOWLEDGEMENTS

It is a great pleasure to address those people who helped me throughout this project to enhance my knowledge and practical skills especially in research area. My deepest and most heartfelt gratitude goes to my supervisor, Dr. Mohd Badruddin Mohd Yusof. The continuous guidance and support from both has enabled me to approach work positively and make even the impossible possible.

I wish to express my special thanks to my beloved parents, family and friends who give me spirit, support and encouragement to me in completion this project. I would also like to thank everyone who had contributed directly or indirectly to this project. This project would have been impossible without your guidance, advice and support.

Thank you.

# ABSTRACT

Sustainable approach in developing the coastal developments is very important. A study was conducted to predict the relationship between locational and socio-economic aspects on perceptions of impact of surrounding development, as well as willingness to accept (WTA) future development in Johor, particularly the proposed coastal project within Sungai Lebam catchment area, the location of this study. Ten different villages within 5km radius of the upcoming development were randomly selected with 300 respondents interviewed. The data was analysed using crosstab, bivariate and linear regression analyses of the Statistical Packages for the Social Sciences (SPSS) software. The study found that most respondents were willing to accept the proposed coastal development. However, WTA varied according to perceived opinions on potential impacts of development and socio-economic background of respondents. Respondents were willing to accept due to their perceived positive future values of the development in improving their economic and occupational status as well as infrastructure in the area. However, the respondents' reluctance to accept the development was based on negative perceived views of coastal development that could negatively affecting their psychological well-being and environmental conditions in general. Higher income individuals were more likely to accept the development, whereas those with lower academic and formal education where more critical about it ($p<0.01$) (i.e., significant at 99% confident level). The results indicated that locational factors did not affect WTA.

# ABSTRAK

Pendekatan secara mampan untuk pembangunan di sekitar kawasan pantai adalah penting. Kajian telah dijalankan untuk meramalkan hubungan antara aspek latar belakang komuniti dan sosio-ekonomi dalam persepsi terhadap kesan pembangunan di sekitar pantai, serta kesanggupan untuk menerima pembangunan (WTA) di negeri Johor, terutamanya kawasan cadangan projek pantai di kawasan tadahan Sungai Lebam, lokasi kajian ini. Responden sebanyak 300 telah ditemubual dari 10 kawasan kampung yang telah dipilih secara rambang berdasarkan lingkungan 5 km dari kawasan pembangunan akan datang. Data dianalisis menggunakan tabulasi silang, regresi linear dan kolerasi sederhana melalui *Statistical Packages for Social Sciences* (SPSS). Hasil kajian mendapati kesanggupan menerima (Willingness-to-accept (WTA)) cadangan pembangunan sekitar pantai dalam kalangan responden adalah positif. Namun demikian, WTA berbeza mengikut pendapat mengenai potensi kesan pembangunan dan latar belakang sosio-ekonomi. Responden sanggup menerima pembangunan jika ia memberi kesan positif terhadap ekonomi dan status pekerjaan, serta infrastruktur di kawasan kajian. Walau bagaimanapun, responden lebih kritis terhadap cadangan pembangunan jika berdasarkan pandangan negatif terhadap kesan pembangunan di pantai pada pengaruh psikologi dan alam sekitar. Individu yang memiliki pendapatan tinggi lebih cenderung untuk menerima pembangunan, manakala mereka yang berpendidikan rendah enggan menerima pembangunan ($p<0.01$) (i.e., signifikan pada 99% tahap keyakinan). Keputusan menunjukkan bahawa faktor latar belakang tidak memberi kesan terhadap WTA.

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# LIST OF SYMBOLS

| | | |
|---|---|---|
| $\bar{x}$ | - | Mean value |
| $s$ | - | Standard Deviation |
| n | - | Number of data sample |
| $\Sigma x$ | - | Summation of all data |
| $p$ | - | Significant level |
| $r_s$ | - | Spearman's regression coefficient |
| $t$ | - | Spearman's rho regression coefficient |
| * | - | Asterisk mark |
| % | - | Percentage |

# LIST OF ABBREVIATION

| | | |
|---|---|---|
| WTA | - | Willingness to Accept |
| A | - | Agree |
| SA | - | Strongly Agree |
| D | - | Disagree |
| SD | - | Strongly Disagree |
| JCorp | - | Johor Corperation |
| JLand | - | Johor Land |
| SPSS | - | Statistical Packages for the Social Sciences |
| Sig. | - | Significant Coefficient |
| M | - | Mode |
| A | - | Distance of area from proposed project |
| E | - | Education level |
| II | - | Individual Income |

# LIST OF APPENDICES

# CHAPTER 1

# INTRODUCTION

The first chapter provides a brief introduction and emphasises the key components related to main issue concerned. It describes the background, problem statement, objectives, scope and significance of this study.

## 1.1 Background of Study

Coastal development helps in improving country development especially for its economical status. Johor Straits currently moving towards intense development especially in coastal area. However, coastal development can cause a several impacts especially on human and environment. A study was conducted within 5 km radius of the upcoming proposed project Sungai Papan Development by Johor Land Berhad (JLand) located in Kota Tinggi, Johor. Impacts such as economic and occupational status, social pattern and lifestyle, infrastructure benefits, psychology, and environmental were taken into consideration for this study in using quantitative and qualitative analysis.

## 1.2 Problem Statement

Johor Straits was currently seen with aggressive developments especially within its coastal area. Ineffective coastal development can affect the relationship between environment, local people and government due to lack of social consideration before, during or after the development. Without social consideration, possible occurrence towards ethical and environmental issues are higher. Thus, this study aimed to identify socio-economic status on residents of study area and how their view could help improve future policies. Also, could help to identify the most critical coastal development impacts components based on public perspective such as economical and occupational status, social pattern and lifestyle, infrastructure benefits, influence on psychology, and environmental.

## 1.3 Objectives

The objectives of this study are as followings:

a) To study current socio-economic profiles and background of residents at the study area.

b) To study, analyse and identify the public opinions on impacts of the coastal development towards socio-economic status of the community and the environment of study area.

c) To analyse and itegrate Willlingness to Accept (WTA) the proposed development in relation the socio economic background of residents and their perceived view on the issues.

## 1.4 Significance of Study

Findings of the study help to provide a sustainable approach in developing the upcoming coastal development in Johor, particularly within Sungai Lebam catchment area where the development was located. It may improve a better quality of life on coastal community and may improve future development that going to happen in coast area.

## 1.5 Scope of Study

The scope of study focused on area and respondents of the study. The study area in an area which will be developed in future known as Sungai Papan Development by Johor Land Berhad, located within coastal area of Johor Straits. Meanwhile, the study included randomly selected respondents living according to specified villages with 5km radius of the development.

## REFERENCES


Adeel, Z., and R. Pomeroy. (2002). Assessment and Management of Mangrove Ecosystems in Developing Countries. *Trees* 16(2–3):235–238.

Adger, N. (2003). Governing Natural Resources: Institutional Adaptation and Resilience. In *Negotiating Environmental Change: New Perspectives from Social Science*, pp. 193–208.

Ahmad, F.O. (2016a). JCorp Set to Roll Out 11 Major Development Projects in Johor. *New Straits Times*, pp.1–4.

Ahmad, F.O. (2016b). JCorp to Spearhead 11 Projects. *New Straits Times*.

Alves, F.L., Da Silva, C.P. and Pinto, P. (2007). The Assessment of the Coastal Zone Development at a Regional level - The case study of Portugal Central area. *Journal of Coastal Research*, 2007(50), pp.72–76.

Andiko, and R. Seprasia. (2002). Nagari Punggasan. *Padang: Lembaga Bantuan Hukum Padang.* pp. 89–126.

Ariffin, J., Adib, M., Razi, M. and Yusoff, M. (2011). An Integrated Rainfall, Inundation and Evacuation Model for Kota Tinggi Catchment. , pp.1–15.

ASEAN, and US CRMP. (1991). The Coastal Environmental Profile of South Johore, Malaysia. *International Center for Living Aquatic Resources Management, Manila Philippines*, *24*, 64.

Bahadur, P. (2014). Difference between Guideline, Procedure, Standard and Policy.

Bakti, H. B., Shamsul, B. R., and Normizan, B. (2015). Willingness To Pay (WTP) and Willingness To Accept (WTA): Why Bother? *Prosising Perkem 10*, *81*(3), 635–647.

Beddoe, W. (2015). Understanding the Hierarchy of Principles , Policies , Standards , Procedures , and Guidelines. , pp.3–5.

Christian, R.R. and Mazzilli, S. (2007). Defining the Coast and Sentinel Ecosystems for Coastal Observations of Global Change. *Hydrobiologia*, 577(1), pp.55–70.

Christie, P., Lowry, K., White, A. T., Oracion, E. G., Sievanen, L., Pomeroy, R. S.,

Pollnac, R. B., Patlis, J. M., and Eisma, R. L. V. (2005). Key Findings From a Multidisciplinary Examination of Integrated Coastal Management Process Sustainability. *Ocean & Coastal Management* 48:468–483.

Crawford, B., Kasmidi, M., Korompis F., and Polnac, R. (2006). Factors Influencing Progress in Establishing Community-based Marine Protected Areas in Indonesia. *Coastal Management* 34:39– 64.

Creswell, J. W. (1994). *Research Design: Qualitative and Quantitative Approaches*. Thousand Oaks, CA: SAGE.

Dahuri, R., and Dutton I. M. (2000). Integrated Coastal and Marine Management Enters a New Era in Indonesia. *Integrated Coastal Zone Management*, 1:11–16.

Department of Environment and Heritage Protection of Queensland. (2013). Coastal Management Plan.

Department of Irrigation and Drainage Malaysia. (2015). Guidelines for Preparation of Coastal Engineering Hydraulic Study and Impact Evaluation.

Department of Irrigation and Drainage Malaysia. (2015). Guidelines on Erosion Control for Development Projects in the Coastal Zone.

Ethel, K. (2017). MB World Group to Launch Maiden Township on Saturday. *The Edge Markets*.

Ehler, C.N. (2003). Indicators to Measure Governance Performance in Integrated Coastal Management. *Ocean and Coastal Management*, 46(3–4), pp.335–345.

Frank, H.H. (2003). Towards a Sustainable Built Environment Prepared for Climate Change? Presentation to Global Policy Summit, pp.1–9.

Gagliardi, A.R., Brouwers, M. C., Palda V. A., Lemiuex-Charles, L., and Grimshaw, J. M. (2011). How Can We Improve Guideline Use? A Conceptual Framework of Implementability. *Implementation Science*, 6(1), p.26.

Ghosh, P.K. and Datta, D. (2012). Coastal Tourism and Beach Sustainability – An Assessment of Community Perceptions in Kovalam , India. *Malaysia Journal of Society and Space 8 issue 7 (75 – 87)*, 7(7), pp.75–87.

Gomes, R.K.S., Takiyama, L. R., Pereira, L. C. C., Silva U. R. L., and Ferreira R.C.M. (2011). Social Diagnosis and Guidelines for Coastal Management in Environmental Protection Areas of the Amazon Littoral (Amapa, Brazil). *Journal of Coastal Research*, (Part 2, 64), pp.1331–1335.

Google Map (2016). South of Johor. Retrieved from https://www.google.com/maps

Heydari, M., Shahiri Parsa, A., Sadeghian, M.S. and Moharrampour, M. (2013). Flood

Zoning Simulation by HEC-RAS Model (Case Study: Johor River-Kota Tinggi Region). *Journal of River Engineering*, 1(1), p.6

Hoffman, E., and Matthew, L. S. (1993). Willingness to Pay vs. Willingness to Accept: Legal and Economic Implications. *Washington University Law Review*, *71*(1), 59–114.

Horowitz, J.K. & McConnell, K.E., (2006). Willingness to Accept, Willingness to Pay and the Income Effect. Journal of Economic Behavior and Organization, 51(4), pp.537–545.

Indrawasih, R., Wahyono A., and Adhuri, D. S. (2003). Pengelolaan Sumberdaya Laut di Kabupaten Bangka Belitung.

Karki, T. (2016). How Capable are Local Residents and Local Governments at Coping with and Adapting to Flood Disasters in Malaysian Cities? A case study of two cities from Johor state, 1–17.

Kay, R., and Alder, J. (1999). Coastal Planning and Management. *London: E&FN Span.*

Lawson, E.T. Gordon, C. and Schluchte, W. (2012). The Dynamics of Poverty Environment Linkages in Coastal Zone of Ghana. *Ocean and Coastal Management*, 67, 30-38.

Malaysia. (2015). Environmental Quality Act 1974. The Commissioner of Law Revision, Malaysia.

Martín-Fernández, J. Cura-Gonzalez, M. I., Gomez, T., Olivia, J., Dominguez, J., Bearmud, M., and Perez, F. J. (2010). Differences Between Willingness to Pay and Willingness to accept for visits by a family physician: a contingent valuation study. BMC public health, 10, pp.1–11.

Masron, T., Yaakob, U., Mohd Ayob, N. and Mokhtar, A.S. (2012). Population and spatial distribution of urbanisation in Peninsular Malaysia 1957 - 2000. *Malaysia Journal of Society and Space*, 2(2), pp.20–29.

Mohd Ariff, M.R., Mohd Raduan, M.S., Aziz Z. (2007). Masalah Nelayan Tradisional di Semenanjung Malaysia: Penyelesaian Tanpa Kesudahan. *Jati*, 12, 247-258.

NST Properties. (2017). Desaru Coast : A Hidden Gem. *New Straits Times*, pp. 28–29.

Pador, Z., and Zakir F. (2002). Pola Partisipatif: Alternatif Kembali ke Sistem Nagari. *Padang: Lembaga Bantuan Hukum Padang.*

Pomeroy, R. and Carlos, M. B., (1997). Community-based Coastal Resources

Management in the Philippines: A Review and Evaluation of Programs and Projects, 1984–1994. *Marine Policy* 21(5):445–464.

Scally, A.J. & Brealey, S. (2003). Confidence Intervals and Sample Size Calculations for Studies of Film-Reading Performance. Clinical Radiology, 58(3), pp.238–246.

Siry, H. Y. (2005). *Challenges for Community-Based and Co-management Approaches in Coastal Zone Management in Indonesia*. Paper read at the 6th Doctoral Students Conference, Moving Toward a Sustainable Future: Multidisciplinary Perspectives from the Pacific Rim,7–12 August 2005, University of Oregon, Eugene, USA.

Siry, H.Y. (2006). Decentralized Coastal Zone Management in Malaysia and Indonesia: A Comparative Perspective. *Coastal Management*, 34(3), pp.267–285.

Sorensen, J. C. (1993). The International Proliferation of Integrated Coastal Zone Management Efforts. *Ocean & Coastal Management* 21(1–3):45–80.

Tjokrowinoto, M. (1999). Peningkatan Reorientasi Birokrasi Publik Dalam Era Globalisasi. *Menyoal birokrasi publik*, pp. 72–79.

UNEP RRCAP. (2004). Sustainable Development Priorities for Southeast Asia, Bangkok: United Nations Environment Program—Regional Resources for Asia Pacific.

WHO (2002). WHO Handbook for Guideline development. *Nephrology Dialysis Transplantation*, 17, pp.3–4.

Zaradic, P.A., Pergams, O.R.W., and Kareiva, P. (2009). The Impact of Nature Experience on Willingness to Support Conservation. PLoS ONE, 4(10), pp.10–14.

Zerner, C. E. (2003). *Culture and the Question of Rights: Forests, Coasts and Seas in Southeast Asia*. Durham, NC: Duke University Press.

Zazali, M. (2015). JCorp to Develop Township Project in Kota Tinggi Next Year. *The Star*.