



**UNIVERSITI PUTRA MALAYSIA**

**ECONOMIC VALUE OF VECTOR-BORNE  
DENGUE FEVER MITIGATION IN CHERAS,  
MALAYSIA**

**TEE CHEE HOONG**

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**ECONOMIC VALUE OF VECTOR-BORNE DENGUE FEVER MITIGATION  
IN CHERAS, MALAYSIA**



**By**

**TEE CHEE HOONG**

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Abstract of the thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master Science

**ECONOMIC VALUE OF VECTOR-BORNE DENGUE FEVER MITIGATION  
IN CHERAS, MALAYSIA**

By

**TEE CHEE HOONG**

**October 2011**

**Chair: Professor Khalid Abdul Rahim, PhD**

**Faculty: Economics and Management**

Rapid industrial and economic development in Malaysia over the last two decades has brought about development, creating prevalence of vector-borne diseases, such like dengue fever. Dengue fever has increased dramatically in Malaysia from less than 1000 cases in 1973 to 41486 cases in 2009. Latest Press Release of Dengue Fever & Chikungunya Situation in Malaysia Week 49/2010 (5 - 11 Dec 2010) from Director General of Health Malaysia reported that there is total 44,641 dengue cases reported and 132 people die from dengue fever. Selangor state reported as the highest which is 15,862 dengue cases 44 dead cases reported in Week 49/2010 mainly because dengue often occurs in urban and semi urban area. Furthermore, there is no effective vaccine or drug treatment for dengue fever. Hence, the adverse health effects should not be overlooked.

The prime aim of this study is to estimate monetary value of the externalities (non-market values) associated with vector borne dengue fever mitigation. Therefore this study will assess the economic value using the contingent valuation method (CVM). A pilot test is conducted to determine the bids of the payment card by eliciting the

willingness to pay (WTP) using the open-ended questionnaire then ranked the WTP of these valid samples and selected 20<sup>th</sup>, 40<sup>th</sup>, 60<sup>th</sup>, and 80<sup>th</sup> percentiles to be the designated bids in the real survey. A face-to-face interview approach was being conduct in this paper. The respondent's WTP is investigated in the survey using the open-ended payment card approach, and the results show that Selangor's households would pay RM4.16 per month per household (RM49.92 per year per household) for immediate efforts to mitigate rise in dengue fever epidemics. Therefore for the entire society of Selangor's households, the economic value is RM49.7 million (US\$13.08 million) per year. These findings show that the respondents are concerned with the dengue fever epidemic. In other words, people are willing to pay significant money to avoid the increase in dengue fever cases. The figure above can be used as a fundamental for the local government to compute the medical treatment cost for dengue fever which is rising rapidly. In addition, government could use such a budget for mitigation and adaptation strategy to reduce the prevalence of vector-borne diseases, such like dengue fever.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**NILAI EKONOMI MITIGASI TERHADAP PENYAKIT BAWAAN VEKTOR  
DEMAN DENGGI DI CHERAS, MALAYSIA**

Oleh

**TEE CHEE HOONG**

**Oktober 2011**

**Pengerusi: Profesor Khalid Abdul Rahim, PhD**

**Fakulti: Ekonomi dan Pengurusan**

Pembangunan industri dan ekonomi yang pesat di Malaysia sejak dua dekad yang lalu telah membawa pembangunan, menyebabkan berlakunya penyakit vektor, seperti demam denggi. Demam denggi telah meningkat secara dramatik di Malaysia iaitu kurang dari 1000 kes pada tahun 1973 sehingga 41486 kes pada tahun 2009. Laporan akhbar terkini Demam Denggi & Chikungunya Situasi di Malaysia [Minggu 49 / 2010 (5-11 Disember 2010)] dari Ketua Pengarah Kesihatan Malaysia melaporkan bahawa sejumlah 44641 kes dilaporkan dan 132 orang meninggal dunia akibat demam denggi. Negeri Selangor mencatat kes yang tertinggi iaitu 15862 kes denggi dan 44 kes kematian dalam Minggu 49/2010, ini disebabkan kerana denggi sering berlaku di kawasan bandar dan kawasan pinggir bandar. Selain itu, tidak ada vaksin yang berkesan atau rawatan ubat untuk demam denggi. Sehubungan itu, kesan negatif yang mengakibatkan demam denggi tidak boleh diabaikan. Tujuan utama kajian ini adalah untuk menganggarkan nilai komoditi bukan pasaran yang berkaitan dengan mitigasi vektor demam denggi. Oleh kerana itu kajian ini akan menilai kesan ekonomi dengan menggunakan kaedah

penilaian kontingen (CVM). Siasatan tinjauan dijalankan untuk menentukan harga letakan kad bayaran dengan menggunakan format “open-ended” teknik. Nilai kesanggupan membayar (WTP) sampel ini disusun semula dan dipilih mengikut 20, 40, 60, dan 80 persentil untuk menjadikan nilai tawaran yang ditetapkan pada soal selidik . Teknik menemuduga digunakan dalam penyelidikan ini. Siasatan terhadap WTP reponden dijalankan dalam kajian dengan menggunakan kad bayaran terbuka dan keputusannya menunjukkan bahawa isirumah Selangor akan menyumbang RM4.16 sebulan isirumah (RM49.92 setahun isirumah) untuk usaha mengurangkan peningkatan wabak demam denggi. Oleh kerana itu untuk seluruh isirumah Selangor, nilai ekonomi adalah RM49.7 juta (US \$ 13.08 juta) setahun. Penemuan kajian ini menunjukkan bahawa responden prihatin terhadap wabak demam denggi. Selain itu, mereka sanggup menyumbang wang untuk mengelakkan peningkatan kes demam denggi. Nilai ekonomi boleh digunakan sebagai asas untuk kerajaan tempatan mengira kos rawatan perubatan untuk demam denggi yang semakin meningkat. Di samping itu, kerajaan boleh menggunakan bajet tersebut untuk mengimplementasi strategi mitigasi dan strategi adaptasi supaya mengurangkan kes penyakit bawaan vektor seperti demam denggi.

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I certify that a Thesis Examination Committee has met on 20 October 2011 to conduct the final examination of Tee Chee Hoong on his thesis entitled “Economic Value Of Vector-Borne Dengue Fever Mitigation in Cheras, Malaysia” in accordance with Universities and Universities College Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master Science.

Members of the Examination Committee were as follows:

**Alias bin Radam, PhD**

Associate Professor  
Faculty of Economics and Management  
Universiti Putra Malaysia  
(Chairman)

**Mohd Rusli bin Yacob, PhD**

Senior Lecturer  
Faculty of Environmental Studies  
Universiti Putra Malaysia  
(Internal Examiner)

**Zaiton binti Samdin, PhD**

Senior Lecturer  
Faculty of Forestry  
Universiti Putra Malaysia  
(Internal Examiner)

**Akira Ishida, PhD**

Associate Professor  
Faculty of Life and Environmental Science  
Shimane University, Japan  
(External Examiner)

---

**SEOW HENG FONG, PHD**

Professor and Deputy Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:

This Thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of **Master Science**. The members of the supervisory Committee were as follows:

**Khalid Abdul Rahim, PhD**

Professor  
Faculty of Economics and Management  
Universiti Putra Malaysia  
(Chairman)

**Law Siong Hock, PhD**

Associate Professor  
Faculty of Economics and Management  
Universiti Putra Malaysia  
(Member)

**Eugene Pek Chuen Khee, PhD**

Assistant Professor  
Faculty of Arts and Social Sciences  
Nottingham University Business School Malaysia  
(External Member)

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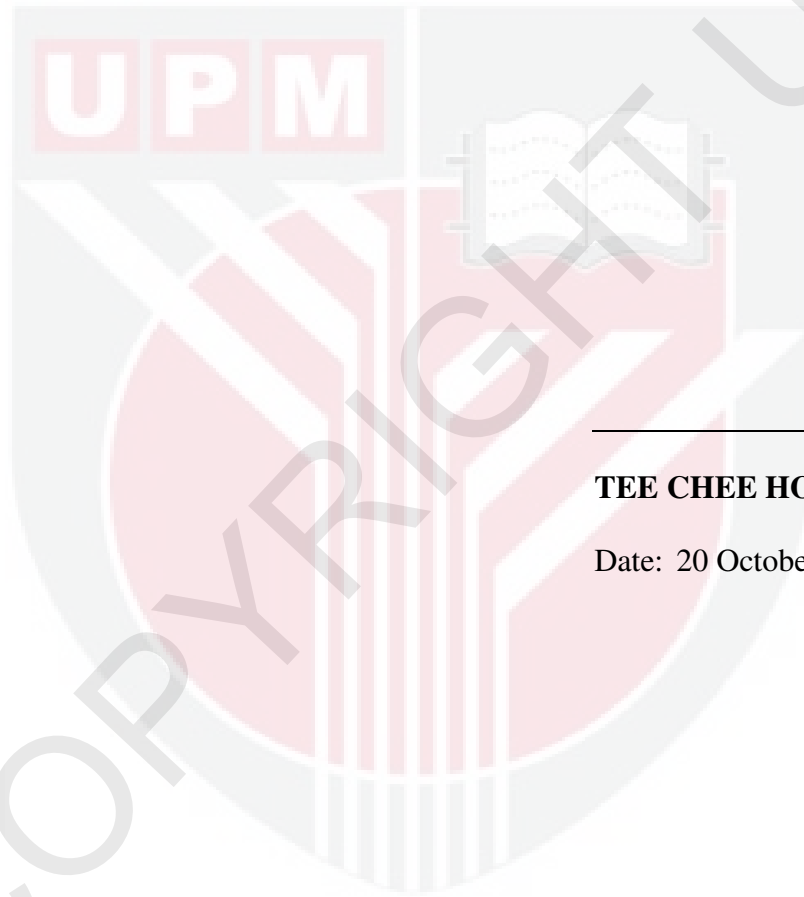
**BUJANG BIN KIM HUAT, PhD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:

## DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.



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**TEE CHEE HOONG**

Date: 20 October 2011

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