



UNIVERSITI PUTRA MALAYSIA

***CONFLICT COUNT BETWEEN SCHOOL CHILDREN AND MOTORIZED
TRAFFIC AROUND TRAFFIC-CALMED SCHOOL AREAS***

ALVIN POI WAI HOONG

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CHILDREN AND MOTORIZED TRAFFIC
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**MASTER OF SCIENCE
UNIVERSITI PUTRA MALAYSIA**

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TRAFFIC AROUND TRAFFIC-CALMED SCHOOL AREAS**

By

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**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
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Chairman: Dato' Ir. Radin Umar Radin Sohadi, PhD

Faculty: Engineering

In Malaysia, police statistics data reveals that the number of child pedestrian casualties in the vicinity of schools showed a decreasing trend from 1995 up to year 2004. Despite the decrease trend, more efforts should be put to further reduce the number of school children casualties. One of the ways is through appropriate engineering interventions that modify the built environment around school areas to promote safe travel to and from schools. The built environment around schools in Malaysia varies from school to school which offers different ways of protection to school children on the road. As such, the effects of the different built environment to the safety of school children need to be examined in order for appropriate treatment to be identified.

This study adopted the use of traffic conflict technique to examine the effects of different built environment in the vicinity of schools. The main objective of this study was to examine the effects of various built environment on the rate of conflict between school children and vehicular traffic at traffic calmed schools. In order to achieve the main objective, statistical models were developed and the traffic flows criteria for the provision of interventions were established. A total of 50 study sites in Serdang, Seri Kembangan, Kajang, Bangi and Cheras were included in this study. The generalized linear modeling with Poisson distribution was used to develop the models.

The final models revealed that vehicle-pedestrian flows, road width, presence of sidewalks and traffic wardens were significant in explaining the conflict counts. Other built environment variables such as vehicle approaching speed, presence of zebra crossing and types of land use were not significant. Presence of traffic warden had the highest effect on the variation of conflict counts.

The models developed in this study can be used to predict the expected number of conflict counts per hour happening near the entrance of schools. The traffic flows criteria established from the models can be used as a guide on the implementation of appropriate interventions in the vicinity of schools.

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

**BILANGAN KONFLIK DI ANTARA KANAK-KANAK SEKOLAH DAN
KENDERAAN BERMOTOR DI KAWASAN SEKOLAH DENGAN
RAWATAN PENENANGAN TRAFIK**

Oleh

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Fakulti: Kejuruteraan

Statistik data pihak polis menunjukkan bahawa terdapat penurunan dalam kecederaan pejalan kaki kanak-kanak di kawasan sekolah di Malaysia dari tahun 1995 sehingga tahun 2004. Walaupun begitu, lebih banyak usaha perlu diberikan untuk menurunkan lagi bilangan kecederaan pejalan kaki khususnya di kalangan kanak-kanak. Salah satu cara adalah dalam bentuk rawatan kejuruteraan di mana keadaan persekitaran fizikal diubah suai untuk meningkatkan tahap keselamatan perjalanan pejalan kaki kanak-kanak ke sekolah dan balik dari sekolah. Keadaan fizikal di persekitaran sekolah adalah didapati berbeza-beza yang memberikan tahap keselamatan terhadap pejalan kaki kanak-kanak yang berlainan. Justeru, kesan keadaan fizikal persekitaran sekolah perlu dikaji untuk mengenal pasti kaedah rawatan yang sesuai.

Kaedah konflik trafik telah digunakan dalam kajian ini untuk menentukan rekabentuk fizikal persekitaran sekolah. Objektif utama kajian ini adalah untuk mengkaji kesan pelbagai rekabentuk fizikal persekitaran sekolah ke atas kadar konflik di antara pejalan kaki kanak-kanak dan kenderaan bermotor di kawasan sekolah yang mempunyai rawatan penenangan trafik. Objektif spesifik kajian ini pula adalah untuk membentuk model statistik dan menentukan kriteria aliran trafik di mana rawatan perlu dilakukan di kawasan sekolah. Sejumlah 50 lokasi kajian di Serdang, Seri Kembangan, Kajang, Bangi dan Cheras telah digunakan dalam kajian ini. Model generalisasi linear dengan taburan Poisson telah digunakan dalam pembentukan model.

Berdasarkan model yang telah dibentuk, didapati aliran kenderaan-pejalan kaki, lebar jalan, laluan pejalan kaki dan warden trafik mempunyai kesan signifikan ke atas kadar konflik. Pembolehubah lain yang turut dipertimbangkan dalam pembentukan model tetapi didapati tidak signifikan adalah seperti laju kenderaan, lintasan pejalan kaki dan jenis guna tanah. Warden trafik didapati mempunyai kesan yang paling tinggi dalam mempengaruhi kadar konflik.

Model-model yang dibentuk dalam kajian ini boleh digunakan untuk meramal kadar konflik di kawasan persekitaran sekolah. Kriteria aliran trafik yang ditentukan pula dapat digunakan sebagai panduan kepada pihak berkuasa untuk merancang jenis rawatan yang diperlukan di kawasan sekolah.

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I certify that a Thesis Examination Committee has met on 11/08/2010 to conduct the final examination of Alvin Poi Wai Hoong on his thesis entitled “Analysis of Conflict Count Between School Children and Motorized Traffic Around Traffic Calmed School Areas” in accordance with the Universities and University Colleges 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 Degree of Masters of Science.

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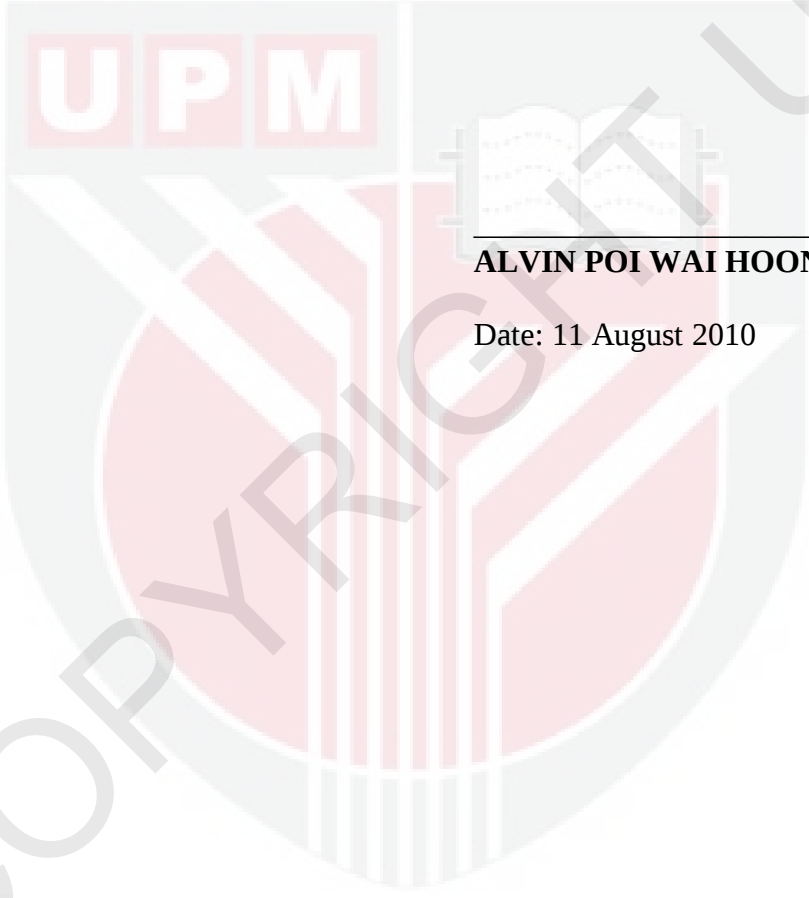
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DECLARATION

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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Date: 11 August 2010

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