



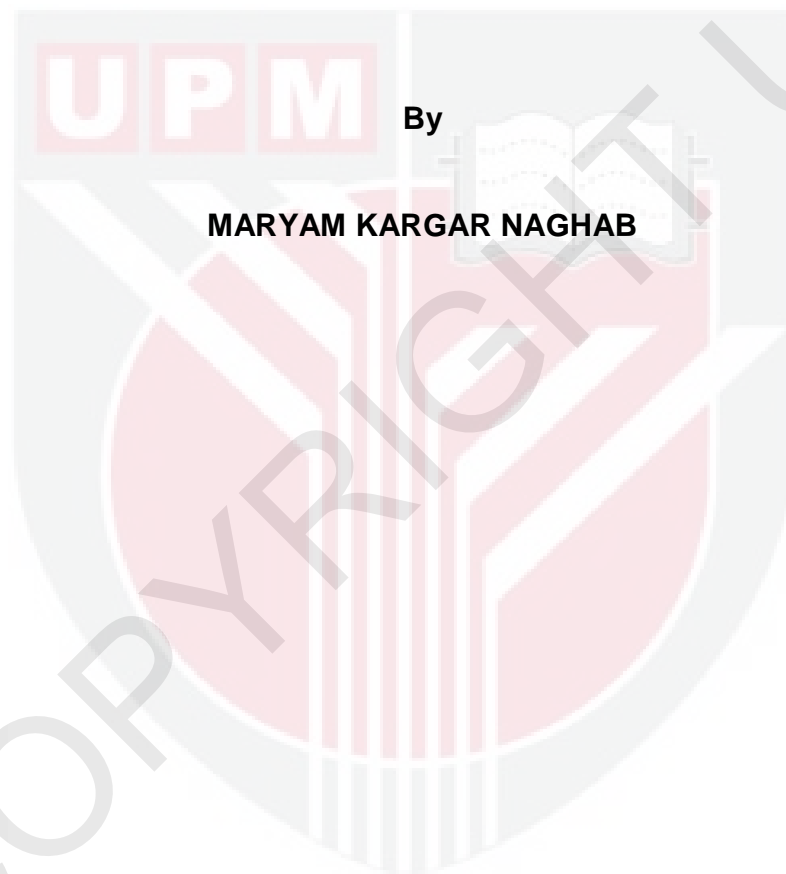
UNIVERSITI PUTRA MALAYSIA

***RELATIONSHIPS BETWEEN ATTITUDES TOWARDS MATHEMATICS AND
MATHEMATICAL PROBLEM-SOLVING BEHAVIOUR, AND PROBLEM
SOLVING PERFORMANCE AMONG YEAR TEN STUDENTS IN TEHRAN,
IRAN***

MARYAM KARGAR NAGHAB

IPM 2012 7

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MATHEMATICAL PROBLEM-SOLVING BEHAVIOUR, AND PROBLEM
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IRAN**



**Thesis Submitted to the School of Graduate Studies, University Putra
Malaysia, in Fulfilment of the Requirements for the Degree of
Master of Science**

June 2012

Dedicated to my husband *Mahdi* for his immense patience and allegiance while studying specially during the last year and to my son *Hirad* for his love



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

**RELATIONSHIPS BETWEEN ATTITUDES TOWARDS MATHEMATICS AND
MATHEMATICAL PROBLEM-SOLVING BEHAVIOUR, AND PROBLEM
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IRAN**

By

MARYAM KARGAR NAGHAB

June 2012

Chairman: Associate Professor Rohani Ahmad Tarmizi, PhD

Institute: Institute for Mathematical Research

A descriptive correlational research design was conducted to investigate the correlation between mathematical problem solving performance and strategy with mathematics attitudes and mathematical problem solving behaviours. The subjects of this study were 150 Mathematics and Physics year 10 students from Tehran city which is capital city of Iran. Among 22 regions of Tehran city, 3 regions were selected randomly by using fishbowl method. Ten high schools from these three regions participated in this study. Three instruments were used in this study namely, the Mathematical Problem Solving Test, Mathematics Attitudes Scale, and Mathematical Problem Solving Behaviours Scale.

The data was analysed by using Pearson correlation to show the correlation among variables. The study shows that there is high positive significant correlation between students' mathematical problem solving performance and students' mathematics attitudes. In addition, a high positive significant correlation was found between students' mathematical problem solving behaviour and mathematical problem solving performance. The results also indicate that there is a high positive significant correlation between students' mathematics attitudes and students' mathematical problem solving behaviour with executing the appropriate mathematical problem solving strategies. These findings indicated that problem solving performance is correlated with mathematics attitudes and problem solving behaviour, hence mathematical problem solving ability can be enhanced with nurturing positive attitudes toward mathematics learning and also students' behaviour in problem solving.

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

**HUBUNGAN ANTARA SIKAP TERHADAP MATEMATIK DAN TINGKAH
LAKU MENYELESAIKAN, DAN PRESTASI PENYELESAIAN MASALAH
MATEMATIK DALAM
KALANGAN PELAJAR TAHUN SEPULUH DI TEHRAN, IRAN**

Oleh

MARYAM KARGAR NAGHAB

June 2012

Pengerusi: Profesor Madya Rohani Ahmad Tarmizi, Ph D

Institut: Penyelidikan Matematik

Sebuah reka bentuk kajian korelasi-deskriptif telah dijalankan bagi tujuan menyiasat korelasi antara prestasi dan strategi penyelesaian masalah matematik dengan sikap terhadap matematik dan tingkah laku menyelesaikan masalah matematik kalangan pelajar tahun 10 di Tehran, Iran. Subjek kajian ini terdiri daripada 150 pelajar Matematik dan Fizik tahun 10 dari bandar Tehran yang merupakan ibu negeri Iran. Di antara 22 rantau di Bandar Tehran, 3 rantau telah dipilih secara rawak dengan menggunakan kaedah "fishbowl". Sepuluh sekolah tinggi daripada tiga rantau ini telah dilibat dalam kajian ini. Di

antara sepuluh sekolah tinggi, 200 orang pelajar telah terlibat dalam kajian ini. Tiga set instrumen kajian alat telah digunakan dalam kajian ini iaitu ujian penyelesaian masalah matematik, sikap terhadap matematik, tingkah laku menyelesaikan masalah matematik.

Data telah dianalisis dengan menggunakan korelasi Pearson untuk menentukan hubungan antara pembolehubah kajian. Dapatan kajian menunjukkan terdapat korelasi positif yang signifikan antara prestasi penyelesaian masalah matematik dengan sikap terhadap matematik serta tingkah laku menyelesaikan masalah matematik. Di samping itu, korelasi positif yang signifikan juga diperoleh di antara sikap terhadap matematik dan tingkah laku menyelesaikan masalah matematik dengan melaksanakan strategi penyelesaian masalah matematik yang sesuai dalam kalangan pelajar. Dapatan kajian ini menunjukkan bahawa prestasi menyelesaikan masalah matematik sangat berkait dengan sikap matematik dan tingkah laku terhadap penyelesaian masalah matematik, dengan itu, prestasi menyelesaikan masalah dapat ditingkatkan dengan menyemai sikap dan tingkah laku positif terhadap matematik dalam kalangan pelajar.

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Last but not least, to my families, thank you for the prayers and encouragements given to me all these years and of course not forgetting my husband and son for their love and understanding, and my dear father and mother for their supports and encouragements.

I certify that a thesis Examination Committee has met on February 2012 to conduct the final examination of Maryam Kargar Naghab on her thesis entitled "Relationship Between Mathematics Attitudes and Mathematical Problem Solving Behaviour with Problem Solving Performance among Iranian year ten students" in accordance with the Universities and 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 of Science.

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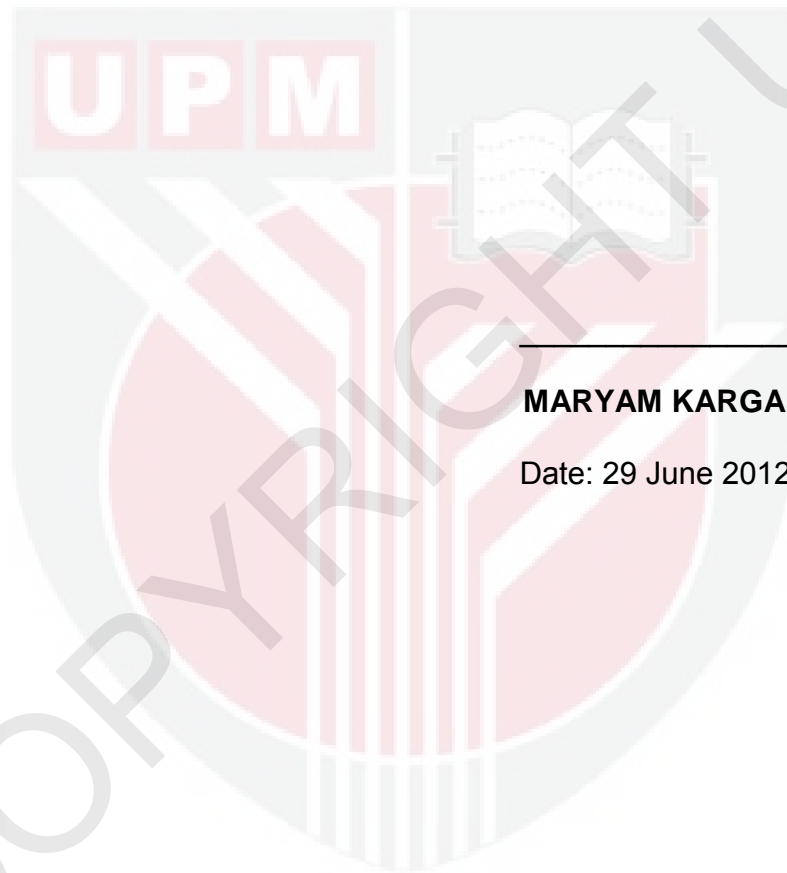
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DECLARATIONS

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 currently, submitted for any other degree at Universiti Putra Malaysia or any other institution.



MARYAM KARGAR NAGHAB

Date: 29 June 2012

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