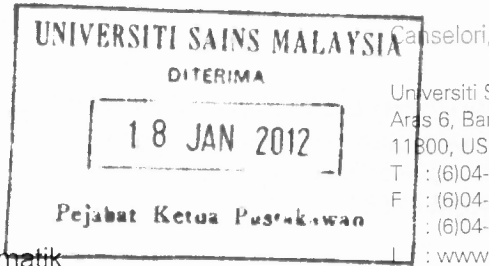




No. Fail : F0356
Tarikh 2 Disember 2011

Prof. Madya Adam Baharum
Pusat Pengajian Sains Matematik
Universiti Sains Malaysia



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(6)04-653 2350
E : www.research.usm.my

Tuan,

LAPORAN AKHIR SKIM GERAN PENYELIDIKAN FUNDAMENTAL (FRGS)

Tajuk Projek : **Some Fundamental Issues Concerning Longitudinal Models:
Theory and Applications**

No. Akaun : 203/PMATHS/671188

Dengan hormatnya perkara di atas dirujuk.

2. Terlebih dahulu saya ucapkan ribuan terima kasih di atas satu salinan laporan akhir untuk projek penyelidikan seperti tajuk di atas.

3. Adalah dimaklumkan walaupun projek ini telah selesai, kerjasama Jabatan Bendahari dipohon untuk menguruskan penutupan akaun projek pada selewat-lewatnya **31 Disember 2011**. Tempoh ini bertujuan untuk menyelesaikan semua urusan tuntutan dan bayaran yang telah dibelanjakan di dalam tempoh projek. Walau bagaimanapun, tuan dinasihatkan supaya tidak mengeluarkan borang-borang pesanan baru di dalam tempoh ini.

4. Selanjutnya sila ambil perhatian terhadap perkara-perkara berikut sekiranya berkaitan:

- (i) Semua penerbitan harus merakamkan penghargaan kepada **Skim Geran Penyelidikan Fundamental (FRGS)** dan tuan dipohon mengemukakan satu salinan ke Pejabat ini.
- (ii) Bahagian Penyelidikan & Inovasi boleh/akan mengagihkan semula peralatan yang telah dibeli menggunakan peruntukan geran ini seandainya terdapat penyelidik lain yang memerlukan peralatan tersebut.

5. Akhir sekali, tahniah di atas usaha dan kejayaan pihak tuan dapat menyelesaikan projek ini dengan jayanya.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
'Memastikan Kelestarian Hari Esok'

Yang menjalankan tugas,

(AMRA OTHMAN)
Penolong Pendaftar
Unit Pengurusan Geran & Kontrak

HAN, HAR, SIM

LAPORAN AKHIR SKIM GERAN PENYELIDIKAN FUNDAMENTAL (FRGS)

Tajuk Projek : Some Fundamental Issues Concerning Longitudinal Models:
Theory and Applications

No. Akaun : 203/PMATHS/671188

s.k. Dekan Penyelidikan
Pelantar Sains Fundamental
Pejabat Pelantar Penyelidikan
Universiti Sains Malaysia

Dekan
Pusat Pengajian Sains Matematik
Universiti Sains Malaysia

Timbalan Dekan
(Pengajian Siswazah & Penyelidikan)
Pusat Pengajian Sains Matematik
Universiti Sains Malaysia



Ketua Pustakawan
Perpustakaan Hamzah Sendut
Universiti Sains Malaysia

Penolong Bendahari Kanan
Unit Kumpulan Wang Penyelidikan
Jabatan Bendahari
Universiti Sains Malaysia

Pegawai Sains
Pelantar Sains Fundamental
Pejabat Pelantar Penyelidikan
Universiti Sains Malaysia

Disampaikan satu salinan laporan akhir projek untuk simpanan Perpustakaan

Mohon kerjasama pihak puan untuk menguruskan penutupan akaun projek selewat-lewatnya pada 31 Disember 2011 dan mohon kemukakan satu salinan penyata kewangan terakhir ke Pejabat ini untuk tujuan rekod



FINAL REPORT FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS)

Laporan Akhir Skim Geran Penyelidikan Asas (FRGS) IPT

Pindaan 1/2009

RESEARCH TITLE : Some Fundamental Issues Concerning Longitudinal Models: Theory and Applications
Tajuk Penyelidikan

PROJECT LEADER : Prof. Madya Adam Baharum
Ketua Projek

PROJECT MEMBERS : 1. Pn Zalila Ali
(including GRA) 2. Pn Norlida Md. Noor
Ahli Projek 3. Prof. M. Ataharul Islam

PROJECT ACHIEVEMENT

B

ACHIEVEMENT PERCENTAGE

Project progress according to milestones achieved up to this period	0 - 50%	51 - 75%	76 - 100%
Percentage			100%

RESEARCH FINDINGS

Number of articles/ manuscripts/ books	Indexed Journal	<i>Non-Indexed Journal</i>
		4
Paper presentations	International	<i>National</i>
	12	5
Others (Please specify)		

HUMAN CAPITAL DEVELOPMENT

Human Capital	Number		Others (Please specify):
	On-going	Graduated	
PhD Student	3		
Masters Student	2	2	
Undergraduate Students	3	3	
Temporary Research Officer		2	
Temporary Research Assistant		2	
Total			

C Budget Approved (Peruntukan diluluskan) : RM 71,000
Amount Spent (Jumlah Perbelanjaan) : RM 71,000
Balance (Baki) : RM 0
Percentage of Amount Spent : 100 %
 (Peratusan Belanja)

ADDITIONAL RESEARCH ACTIVITIES THAT CONTRIBUTE TOWARDS DEVELOPING SOFT AND HARD SKILLS
 (Aktiviti Penyelidikan Sampingan yang menyumbang kepada pembangunan kemahiran insaniah)

D

International		
Activity	Date (Month, Year)	Organizer
(e.g : Course/ Seminar/ Symposium/ Conference/ Workshop/ Site Visit)	ASIAN PACIFIC OPERATIONS RESEARCH CONFERENCE 12/2010	MSORSM/USM
	AMS 01/2010	AMERICAN MATHEMATICAL SOCIETY, USA
	ICMAE10 08/2010	Univ. Petronas
	ICFAS2010, 06/2010	IIUM
	NCME 07/2009	State Univ., Medan
	IMTGT 06/09	USU, SUMATERA
	ASIAN MATHEMATICAL CONFERENCE 06/2009	USM
	ICSS-X 12/2009	ICSS – CAIRO, EGYPT
	Pre-ICM 12/08	DELHI UNIV, DELHI
	ICLC, 11/2008	TOLYO, JAPAN
	ICORS 09/2008	ANTALYA, TURKEY
	ICSS-IX 12/2007	ICCS – SHAH ALAM
National		
Activity	Date (Month, Year)	Organizer
(e.g : Course/ Seminar/ Symposium/ Conference/ Workshop/ Site Visit)	SIMPOSIUM MATEMATIK KEBANGSAAN 12/2010	PERSAMA
	PBPO 09/2010	UMT
	SIMPOSIUM MATEMATIK KEBANGSAAN 06/2008	PERSAMA

PROBLEMS / CONSTRAINTS IF ANY (Masalah / Kekangan, sekiranya ada)

E

RECOMMENDATION (Cadangan / Perambahakan)

F Further investigations on the application of these models with respect to industrial application and even to human and community health can be further developed. The model has potential to be further developed and will be useful in its application.

RESEARCH ABSTRACT (Not more than 200 words) (Abstrak / Ringkasan – Tidak melebihi 200 patahan / perkataan)

G Some Fundamental Issues Concerning Longitudinal Models: Theory and Applications

Our research group has made impact in the international scale with the introduction of advanced techniques as the markov chain and the higher order markov chains applications. These techniques were developed for the longitudinal data. We can claim that we are among the pioneer group developing this model. Wherever we presented our research output, there were interest shown and questions asked.

We have used the cross-country data and demonstrated a distinct trend over time, we have taken into consideration which measures the economic performance of a country or the health well being of the elderly from the HRD report.

We have used both linear regression as well as logistic regression models in this study for different time periods. Then a covariate dependent Markov model is used to examine the change in performance in economic growth over time for the economics application and the similar techniques being researched on for then health of the nation study.

Date : 12 April 2011

Project Leader's Signature:



Tarikh

Tandatangan Ketua Projek

COMMENTS IF ANY / ENDORSEMENT BY RESEARCH MANAGEMENT CENTER (RMC)

(Komen, sekiranya ada / Pengesahan / Iktin Pusat Pengurusan Penyelidikan)

H

Name:
Nama:

Signature:
Tandatangan:

Date:
Tarikh: