DEVELOPMENT OF A TALENT IDENTIFICATION MODEL
TO DETERMINE THE PHYSICAL ATTRIBUTES OF
ATHLETES FOR THE LONG JUMP EVENT

By

TAN KOK SIANG

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Dedicated to my wife for her continuous support. She has utmost confidence that I will be able to complete my thesis even if it takes me more than ten years.

Dedicated to my son. It is my hope that this will spur him towards achieving academic excellence.
DEVELOPMENT OF A TALENT IDENTIFICATION MODEL TO DETERMINE THE PHYSICAL ATTRIBUTES OF ATHLETES FOR THE LONG JUMP EVENT

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Chairman: Sheikh Kamaruddin bin Sheikh Ahmad

Faculty: Educational Studies

The purpose of this study is to analyze and determine the physical attributes for use in a Malaysian talent identification model for the athletic long jump event. This is a predictive study that explores the relationship between the physical attributes and how these attributes can be used to predict long jump performance (LJUMP). By use of multiple regression analysis, the dependent variable, LJUMP, is predicted from the derived regression equation. The study populations are junior long jumpers consisting of 29 girls with mean age 14.06 years and 20 boys with mean age 14.60 years. Data were collected on their performance in LJUMP, and the physical attributes of anthropometry comprising height (HT), weight (WT), stage of growth and development (GTH), age (AGE), as well as their performance in the 30m Run (RUN), Sit-ups (SITUPS), Sargent Jump (SARG) Standing Long Jump (SLJ) and Sit and Reach (S&R). The predictive equation for the girls is
LJUMP = 356.517 + 42.809(z-score SLJ) + 30.081(z-score SARG). SLJ influences LJUMP more than SARG. The model explains 71.6% (R squared) of the variance in LJUMP. Collinearity was of concern and it was treated using z-scores in place of raw scores. The predictive equation for the boys is LJUMP = 104.164 + 4.388(SARG) + 2.965(S&R). SARJ influences LJUMP more than S&R. The model explains 83.8% (R squared) of the variance in LJUMP. The data and statistical results presented support the idea that a practical and effective talent selection model can be formulated for the athletic long jump event. The model has immediate practical application and the theoretical framework and statistical procedures involved can be employed to construct talent selection models for other athletic or sports events.
Membina Model Pengenalpastian Bakat Untuk Menentukan Ciri-ciri Fizikal Atlet Bagi Acara Lompat Jauh

Oleh

Tan Kok Siang

Mac 2006

Pengerusi: Sheikh Kamaruddin bin Sheikh Ahmad

Fakulti: Pengajian Pendidikan

Tujuan kajian ini adalah untuk menganalisis dan menentukan ciri-ciri fizikal untuk digunakan dalam model pengenalpastian bakat bagi acara lompat jauh. Kajian ini meramalkan hubungan di antara ciri-ciri fizikal dan bagaimana ciri-ciri ini dapat digunakan dalam meramal prestasi lompat jauh (LJUMP). Pembolehubah bersandar LJUMP diramal melalui persamaan hasil regresi menggunakan teknik analisis regresi berganda. Subjek kajian adalah atlet lompat jauh yang terdiri dari 29 perempuan dengan min umur 14.06 tahun dan 20 lelaki dengan min umur 14.60 tahun. Data prestasi yang didapatkan ialah LJUMP, ciri-ciri fizikal dan anthropometri merangkumi tinggi (HT), berat (WT), tahap kematangan (GTH), umur (AGE), Larian 30m (RUN), Bangun Tubi (SITUPS), Lompat Sargent (SARG), Lompat Jauh Berdiri (SLJ), dan Duduk dan Jangkau (S&R). Hasil kajian menunjukkan ramalan hubungan bagi prestasi LJUMP perempuan ialah
LJUMP = 356.517 + 42.809(skor-z SLJ) + 30.081(skor-z SARG). SLJ mempengaruhi LJUMP lebih dari SARG. Model yang terhasil boleh menerangkan 71.6% varians dalam LJUMP. Kebimbangan dalam kollineariti dikawal melalui skor-z. Ramalan hubungan bagi prestasi LJUMP lelaki ialah

LJUMP = 104.164 + 4.388(SARG) + 2.965(S&R). SARG mempengaruhi LJUMP lebih dari S&R. Model yang terhasil boleh menerangkan 83.8% varians dalam LJUMP. Dapatan kajian menyokong idea bahawa model pengenalpastian bakat yang praktikal dan berkesan boleh dibentuk bagi acara LJUMP. Model ini yang melalui rangka teori dan prosedur statistik yang terlibat dapat digunakan dalam pembentukan model pengenalpastian bakat bagi acara sukan lain.
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I certify that an Examination Committee has met on 27th March 2006 to conduct the final examination of Tan Kok Siang on his Master of Science thesis entitled “Development of a Talent Identification Model to Determine the Physical Attributes of Athletes for the Long Jump Event” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

Mohd Majid Konting, PhD  
Associate Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Chairman)

Mohd Khairi Zawi, PhD  
Lecturer  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Internal Examiner)

Tengku Fadilah Tengku Kamalden, PhD  
Lecturer  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Internal Examiner)

Salmah Ayob, PhD  
Associate Professor  
Kolej Universiti Utara Malaysia  
(External Examiner)

ZAKARIAH ABDUL RASHID, PhD  
Professor/Deputy Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:
This thesis was submitted to the Senate of Universiti Putra Malaysia and was accepted as partial fulfilment of the requirements for the degree of Master of Science. The members of the Supervisory Committee are as follows:

Sheikh Kamaruddin Sheikh Ahmad  
Lecturer  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Chairman)

Saidon Amri, PhD  
Lecturer  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Member)

AINI IDERIS, PhD  
Professor/Dean  
School of Graduate Studies  
Universiti Putra Malaysia  
Date:
DECLARATION

I hereby declare that this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

TAN KOK SIANG

Date:
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