

**UNIVERSITI TEKNOLOGI MARA**

**DIGITUS II MANUS : DIGITUS IV MANUS AND ITS  
RELATIONSHIP WITH AEROBIC AND ANAEROBIC  
CAPACITY AMONG TALENTED YOUNG  
FOOTBALLERS**

**By**

**MUHAMAD IHRAM BIN JOHAR**

**Research Project Report submitted in partial fulfillment of the  
requirements for the Degree of  
Bachelor of Sports Science (Hons.)**

**Faculty of Sports Science and Recreation**

**January 2016**

**DECLARATION OF ORIGINAL WORK**  
**BACHELOR OF SPORT SCIENCE AND RECREATION**  
**UNIVERSITI TEKNOLOGI MARA**

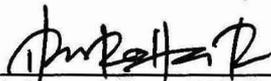
I, MUHAMAD IHRAM BIN JOHAR (I/C Number: 910726065843)

Hereby, declare that:

This work has not previously been accepted in substance for any degree, locally or overseas and is not being concurrently for this degree or any other degree.

This research project was the best result of my independent work and investigation, except, where otherwise states. I absolve Universiti Teknologi MARA (UiTM) and it is Faculty of Sport Science and Recreation from any blame because of my work.

All verbatim extract is been distinguished by quotation marks and sources of my information have been specially acknowledgement.

Signature :   
(Muhamad Iqram Bin Johar)

UiTM ID : 2013162915

Date : 26 January 2016

## ABSTRACT

The digit ratio refers to the proportion of length of the forefinger with respect to the ring finger. Digit ratio is controlled by the level of pre-birth testosterone and it is widely used to determine many things such as sporting ability. Digit ratio could be a crucial indicator in sport performance as it helps to show how aggressive a person is which may determine on how the athlete reacts to situations. The purpose of this study is to find the relationship between low digit ratio with aerobic and anaerobic capacity among talented young footballers. The subjects are from Kuala Lumpur Football Association (KLFA) Academy consist of male students age  $10.41 \pm 0.57$  (years) with total number is 29 subjects ( $n=29$ ). The result of Spearman's Rho shows that the correlation between low digit ratio and aerobic capacity performance which tested by using One Mile Run test (MRW) is  $r=0.37$  where  $p=0.046$ . The result of Pearson's Correlation Coefficient shows that the correlation between low digit ratio and anaerobic capacity performance which tested by using 50 meters sprint test is  $r=-0.10$  and  $p=0.606$ . In conclusion, this study can be used in classifying the athlete based on their nature of sport. Low digit ratio may be a good indicator in finding better sporting ability potential for the development of sport in Malaysia.

*Keywords: Digit ratio, aerobic capacity, anaerobic capacity, talented young footballers*

# TABLE OF CONTENT

	<b>Page</b>
<b>ACKNOWLEDGEMENTS</b>	i
<b>TABLE OF CONTENTS</b>	iii
<b>LIST OF TABLES</b>	v
<b>LIST OF FIGURES</b>	v
<b>LIST OF GRAPHS</b>	v
<b>DECLARATION</b>	vi
<b>LETTER OF TRANSMITTAL</b>	vii
<b>AFFIRMATION</b>	viii
<b>ABSTRACT</b>	ix

## **CHAPTER**

<b>1</b>	<b>INTRODUCTION</b>	
	1.1 Background of the Study	1
	1.2 Statement of the Problems	4
	1.3 Research Objectives	5
	1.4 Hypotheses	5
	1.5 Operational Terms	6
	1.5.1 Digit Ratio	6
	1.5.2 Aerobic Capacity	6
	1.5.3 Anaerobic Capacity	6
	1.5.4 Adenosine Triphosphate (ATP)	6
	1.5.5 $VO_{2max}$	6
	1.6 Limitations of the Study	7
	1.7 Delimitations of the Study	7
	1.8 Assumptions	7
	1.9 Significant of the Study	8

<b>2</b>	<b>LITERATURE REVIEW</b>	
2.1	Relationship of Digit Ratio and Testosterone	9
2.2	Aerobic Capacity in Children	11
2.3	Anaerobic Capacity in Children	12
2.4	Talent Identification and Development (TID)	13
2.5	Measuring Digit Ratio	15
2.6	Measuring Aerobic Capacity	16
2.7	Measuring Anaerobic Capacity	17
<b>3</b>	<b>METHODOLOGY</b>	
3.1	Study Design	18
3.2	Subject Selections	19
3.3	KLFA Academy	19
3.4	Apparatus	19
3.5	Warm-up	20
3.6	Measurements, Tools and Instrumentation	20
	3.6.1 Anthropometric Assessment	20
	3.6.2 Digit Ratio Measurement Procedure	21
	3.6.3 1 mile Run Test (MRW) Procedure	21
	3.6.4 50 meter Sprint Test Procedure	22
3.7	Research Method Work Flow	24
3.8	Statistical Analysis	25
<b>4</b>	<b>RESULTS</b>	
4.1	Introduction	26
4.2	Descriptive Statistics	26
	4.2.1 Descriptive Statistics Result	27
4.3	Test of Data Normality	28
4.4	Correlation Analysis	30
4.5	Summary of the Result	32