

DOCTORAL THESIS

Determinants of expertise of Olympic style Taekwondo performance

Kwok, Hei Man Heather

Date of Award:
2018

[Link to publication](#)

General rights

Copyright and intellectual property rights for the publications made accessible in HKBU Scholars are retained by the authors and/or other copyright owners. In addition to the restrictions prescribed by the Copyright Ordinance of Hong Kong, all users and readers must also observe the following terms of use:

- Users may download and print one copy of any publication from HKBU Scholars for the purpose of private study or research
- Users cannot further distribute the material or use it for any profit-making activity or commercial gain
- To share publications in HKBU Scholars with others, users are welcome to freely distribute the permanent URL assigned to the publication

ABSTRACT

The purpose of this study was to identify the determinants of expertise and the contributory effect of domains to the Olympic style Taekwondo performance. Eighty-seven Taekwondo athletes with different levels of expertise, namely elite, sub-elite and practitioner were recruited. Subjects' performance in attributes within the physical domain was assessed by Queens College Step Test, running-based anaerobic sprint test, vertical jump test, side-stepping test, and sit-and-reach test. Subjects were also surveyed with the Athletic Coping Skills Inventory-28 (ACSI-28) (Chinese version) to obtain a profile of their psychological and emotional attributes. Perceptual attributes of subjects was assessed by Stork balance test, Start Excursion Balance Test and Ruler Drop Reaction Time Test. Notational analysis of subjects' performance in the competition was conducted for determining their technical and tactical domain. Descriptive statistics were used to create a profile of attributes of Taekwondo athletes. Two-way ANOVA were used to identify the difference between female and male athletes, and athletes with different levels of expertise in different domains. Discriminant function analysis was used to determine the contributory effect of each domain to the expertise of Olympic style Taekwondo. Elite athletes obtained a significantly higher mean value than the sub-elite athletes and practitioners in the length of upper limbs ($F=6.15, p=.00$), the length of lower limbs ($F=10.21, p=.00$), and lateral agility ($F=15.71, p=.00$). Discriminant function analysis revealed that the contributory effect of physical domain was the highest among the five domains for determining the expertise in Olympic style Taekwondo with Wilk's Lambda as .70 ($p<.05$).

Keywords: Determinants, Expertise, Olympic style Taekwondo

TABLE OF CONTENTS

	Page
DECLARATION.....	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	viii
LIST OF SYMBOLS.....	xi
LIST OF ABBREVIATIONS.....	xii
CHAPTER 1	
INTRODUCTION	1
Background of the Study	1
Statement of the Problem.....	5
Theoretical basis of the Study.....	5
Purpose of the Study.....	8
Significance of the Study.....	8
Research Questions.....	11
Research Hypotheses.....	12
Definition of Terms.....	13
Delimitations.....	16
Limitations.....	17

CHAPTER 2

LITERATURE REVIEW 18

 The Search of Expertise in Sports..... 18

Defining Expert Athletes in Sports..... 19

Approaches for Accounting Expert Performance 21

Talent Identification and Expert Performance..... 26

Characteristics of High Performers in Sports..... 28

 Development of Taekwondo 38

History of Taekwondo..... 38

The Development of Olympic Style Taekwondo..... 39

Rules and Regulations of Olympic Style Taekwondo competition..... 41

 Taekwondo Studies..... 44

Classification and Features of Kicking Techniques..... 44

Anthropometric Characteristics of Taekwondo Athletes..... 48

Physical Characteristics of Taekwondo Athletes..... 56

Psychological Characteristics of Taekwondo Athletes..... 64

Perceptual Characteristics of Taekwondo Athletes..... 68

Technical and Tactical Attribute of Taekwondo Athletes..... 72

 Summary of Literature Review..... 78

CHAPTER 3

METHODOLOGY 80

 Design of the Study..... 80

Subjects.....	80
Instruments.....	81
<i>Criteria for Measurement Tools Selection.....</i>	81
<i>Measurement of Anthropometric Attributes.....</i>	83
<i>Measurement of Physical Attributes.....</i>	85
<i>Measurement of Emotional and Psychological Attributes.....</i>	88
<i>Measurement of Perceptual Attributes.....</i>	90
<i>Measurement of Technical and Tactical Attributes.....</i>	93
Procedures.....	94
<i>Pilot Testing for Procedural Clarity and Reliability of Tools.....</i>	94
<i>Pilot Testing for Procedural Feasibility.....</i>	95
<i>Data Collection Procedures in the Main Study.....</i>	96
<i>Statistical Data Analysis.....</i>	97
 CHAPTER 4	
RESULT.....	99
Treatment of Data.....	99
Demographic information.....	101
Attribute profiles of Taekwondo athletes.....	106
Correlation between attributes and tactics.....	126
Hypotheses Testing.....	132
Summary of Results.....	165
 CHAPTER 5	
DISCUSSION.....	167

Fighting Pattern and Preference of Taekwondo Athletes	167
Determinants of Expertise in Taekwondo.....	178
Multi-dimensional Approach in Studying the Expertise in Performance.....	191
Summary and Recommendation for Future Studies.....	194
REFERENCES.....	198
APPENDIX.....	230
Curriculum Vitae.....	240