Response Theories Analysis

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ABSTRACT

It is observed that examinations held at educational institutions globally are conducted on periodical basis. We, being inhabitants of the Computer Age, have deployed automated examination systems where schools of students can take the same exam on parallel test schedules with instant report generation evaluating their test performance. The major underlying theories for these tests are response theories. This research analyzes and compares the response theories such as “Item Response Theory” (IRT) and “Classical Test Theory” (CTT). Included in this research is literature reviews consisting of CTT and IRT background knowledge and previous works done in this field. An in-depth study was conducted on all “Item Response Theory” Para models (namely IRT-One Para model, IRT-Two Para model, and IRT-Three Para model)along with their parameters for ability, discrimination and probability respectively to present an improved Para model; “Time IRT” Model or TIRT Model. In the proposed fourth model, i.e. TIRT model, the response and the response time calculations are taken as to be associated with distinct parameters.

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"You have to give yourself credit,
Not too much because that would be Bragging."
— Frank McCourt, Teacher Man

Thanks to ALLAH almighty, I have been bestowed with countless and incomprehensible blessings to achieve this revolutionary feat today. ~~Afterwards~~Coherently, it was all made possible due to my parent~~'~~s' prayers and support.

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Dedications

The family is one of nature's masterpieces.
~George Santayana

~~I dedicate my thesis work to my family and friends. A special feeling of gratitude to my loving parents, for their endless love, support and encouragement.~~ This thesis is dedicated to my parents for their boundless support, love, prayers and blessings throughout countless days and nights. I would also like to dedicate this work to my friends and colleagues without whom, despite their recommendable suggestions, this feat would have been achieved earlier.

Contents

ABSTRACT ii
CERTIFICATE OF ORIGINALITY iii
COPYRIGHT STATEMENT v
ACKNOWLEDGMENTS vi
LIST OF TABLES ix
LIST OF FIGURES x
Chapter 1 1
Introduction 1
1.1. Motivation 1
1.2. Problem statement 2
1.3. The aims and objectives 2
1.4. Thesis organization 2
Chapter 2 7
Background and Literature Review 7
2.1. Classical Theory 7
2.2. Item Response Theory 8
2.4. Comparison between Classical Test Theory and Item Response Theory 12
Chapter 3 24
IRT and TIRT (Time based IRT) 24
Chapter 4 29
Implementation 29
4.3. TIRT, Reliability and Standard Error 31
4.4. Testing 33
Graphical result was generated and of both the IRT and TIRT, compared and then validated through standard method and also though expert opinion. The result is shown below: 35
4.5. Result 36
Chapter 5 38
Conclusion 38
REFERENCES 40
Questions included in test 41

LIST OF TABLES

Table **Page**

Table 2. 1- Classical test v Item Response [7] 15
Table 3. 1- Test data using IRT 15
Table 4. 1-TIRT test data 22
Table 4. 2– Number of items per population 23
Table 4. 3- Sample Population 24

LIST OF FIGURES

Figure **Page**

Figure 1. 1 Thesis Ogranisation 2
Figure 2. 1 Item Characteristic Curves (ICC)[1] 9
Figure 2. 2 One parameter model [8] 10
Figure 2. 3 Two parameter model [8] 11
Figure 2. 4 Three parameter model [5] 12
Figure 2. 5 Item analysis model 8
Figure 3.1 Difficulty of Questions expert opion 12
Figure 3.2 Difficulty of Questions by IRT 12
Figure 3.3 Test result of IRT 14
Figure 4.1 IRT result without constraint 14
Figure 4.2 IRT result without and with constraint 16
Figure 4.3 Discrimination of Questions 112
Figure 4.4 Discrimination with ability paramter 20
Figure 4.5 TIRT result of IIUI 22