PSİKOLOJİ ALANINDA R KULLANIMI

Why R? Turkey 2021
17/04/2021
Eren Halil ÖZBERK

WHY R TURKEY 2021

LIfBi
LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

It is rather surprising that systematic studies of human abilities were not undertaken until the second half of the last century… An accurate method was available for measuring the circumference of the earth 2,000 years before the first systematic measures of human ability were developed

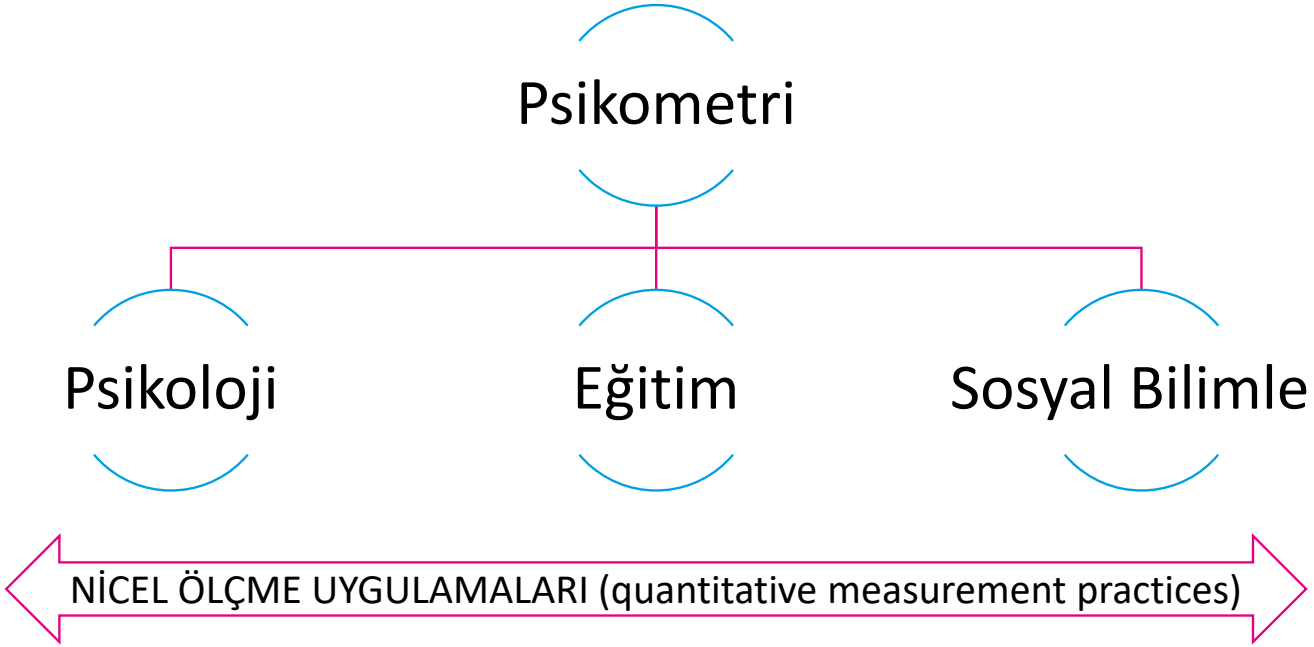
Jum Nunnally, Psychometric Theory (1967)

Psychometry, it is hardly necessary to say, means the art of imposing measurement and number upon operations of the mind …"

Francis Galton, "Psychometric Experiments" (1879)

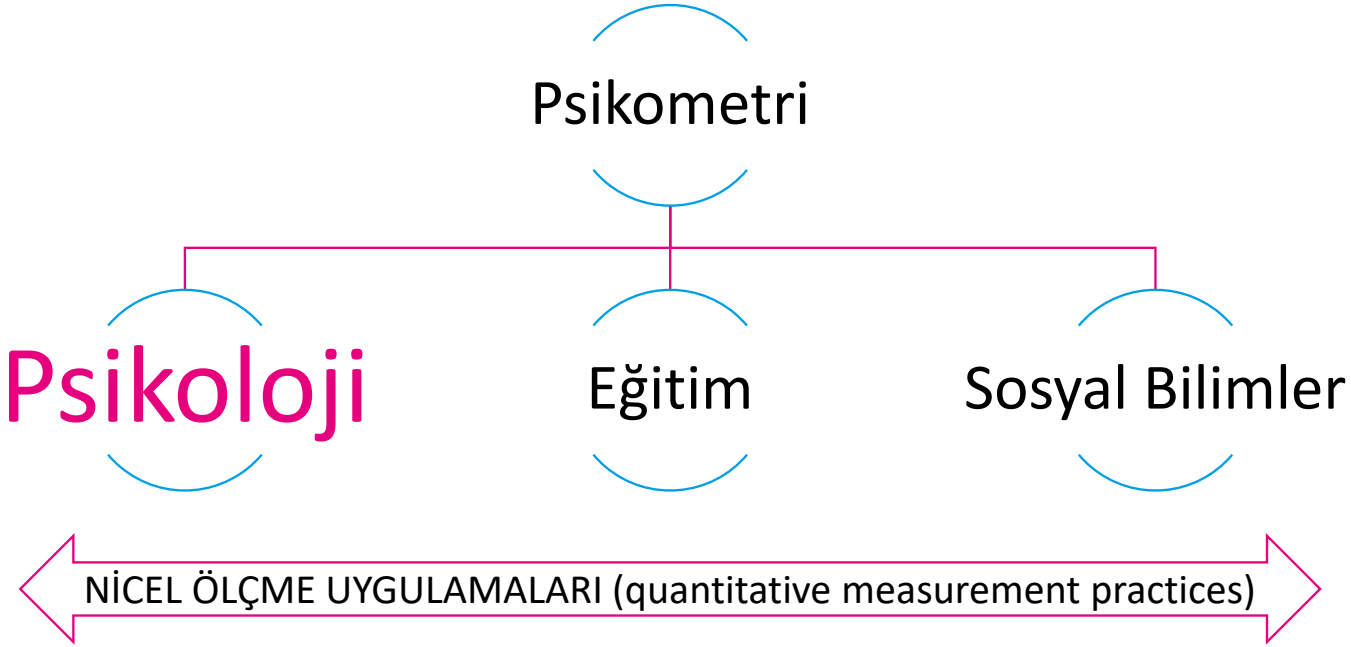
Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

PSİKOMETRİ NEDİR?



Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

PSİKOMETRİ NEDİR?



Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

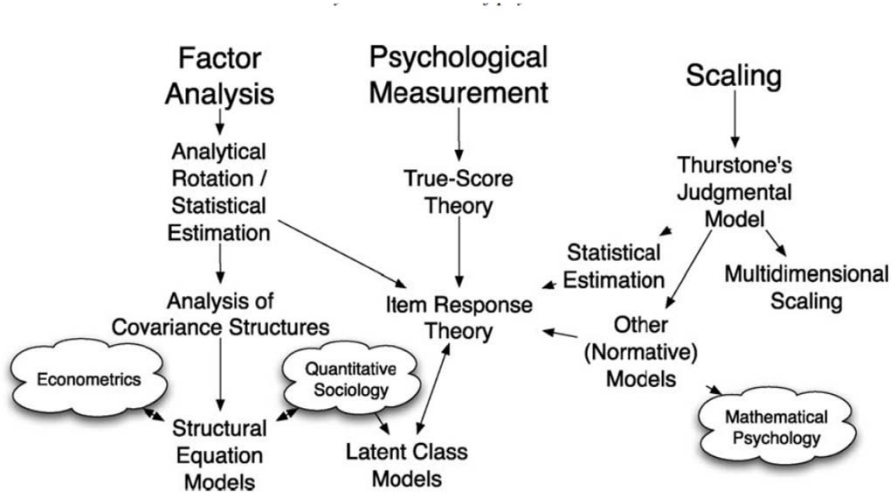
PSİKOMETRİ NEDİR?

- Ölçme araçlarının geliştirilmesi
- Gözlenen değişkenler (Zeka testi maddeleri) ile teorik yapıların (Zeka) ilişkilendirilmesi
- Yeteneğin belirlenmesi

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

HANGİ YÖNTEMLER

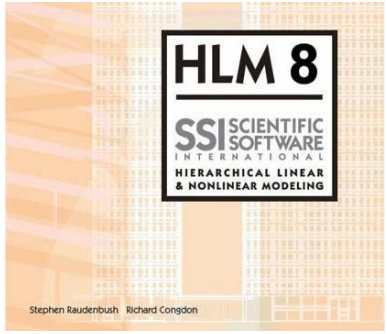
- Psikolojik Ölçekleme (Psychological Scaling)
  - Stevens (1951) Ölçme objelere ve olayları numaralandırma anlamına gelir.
  - Thurstone, bu numaralandırmayı standartlaştırmak için «scale» kavramı üzerinde duruyor.
- Psikometrik Ölçme (Psychological measurement-test theory)
  - Gerçek Puanlar Teorisi (True Score Theory) – Güvenirlik Geçerlik
  - Madde Tepki Kuramı (Item Response Theory) –Rasch, Parameter based LM, GRM,PCM,NRM
  - DIF, DMF Değişen madde fonksiyonu
- Faktör Analizi
  - Temel Bileşenler Analizi
  - Kovaryans Yapıları
  - Örtük Sınıf/Profil Analizleri
  - Yapısal Eşitlik Modeli
- Psikolojik İstatistikler
  - Survey /Anket
  - Betimsel
  - Veri Görselleştirme

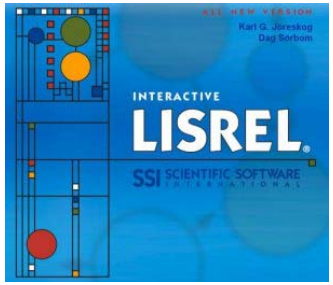


Jones, L. V., & Thissen, D. (2006). 1 A History and Overview of Psychometrics. *Handbook of statistics*, 26, 1-27

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

PEKİ R BU İŞİN NERESİNDE





Mplus

sas

IBM SPSS AMOS

SPSS

ASC

Xcalibre 4.2

IRT Item parameter calibration

Copyright © 2014 - Assessment Systems Corporation

PEKİ R BU İŞİN NERESİNDE

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

LIfBi
LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

PEKİ R BU İŞİN NERESİNDE

Output kullanımı

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.497[a]	.247	.232	20.362	.247	15.767	1	48	.000
2	.614[b]	.377	.351	18.719	.130	9.796	1	47	.003
3	.680[c]	.462	.427	17.587	.085	7.248	1	46	.010
4	.691[d]	.477	.431	17.521	.016	1.344	1	45	.252
5	.695[e]	.483	.424	17.631	.005	.441	1	44	.510

a. Predictors: (Constant), I have good labor conditions

b. Predictors: (Constant), I have good labor conditions, My work is interesting

c. Predictors: (Constant), I have good labor conditions, My work is interesting, My workplace is good

d. Predictors: (Constant), I have good labor conditions, My work is interesting, My workplace is good, I have nice colleagues

e. Predictors: (Constant), I have good labor conditions, My work is interesting, My workplace is good, I have nice colleagues, I have a nice supervisor

Correlations

		Wechsel IQ Test Score	Depression Test Score	Anxiety Test Score	Social Functioning Test Score	Ge Beir
Wechsel IQ Test Score	Pearson Correlation	1	.121	.152	-.151	
	Sig. (2-tailed)		.194	.110	.104	
	N	122	116	112	117	
Depression Test Score	Pearson Correlation	.121	1	.282**	-.328**	
	Sig. (2-tailed)	.194		.003	.000	
	N	116	122	112	116	
Anxiety Test Score	Pearson Correlation	.152	.282**	1	-.534**	
	Sig. (2-tailed)	.110	.003		.000	
	N	112	112	117	111	
Social Functioning Test Score	Pearson Correlation	-.151	-.328**	-.534**	1	
	Sig. (2-tailed)	.104	.000	.000		
	N	117	116	111	122	
Generall Well Being Test Score	Pearson Correlation	-.080	-.801**	-.296**	.333**	
	Sig. (2-tailed)	.393	.000	.001	.000	
	N	117	117	113	117	

**. Correlation is significant at the 0.01 level (2-tailed).

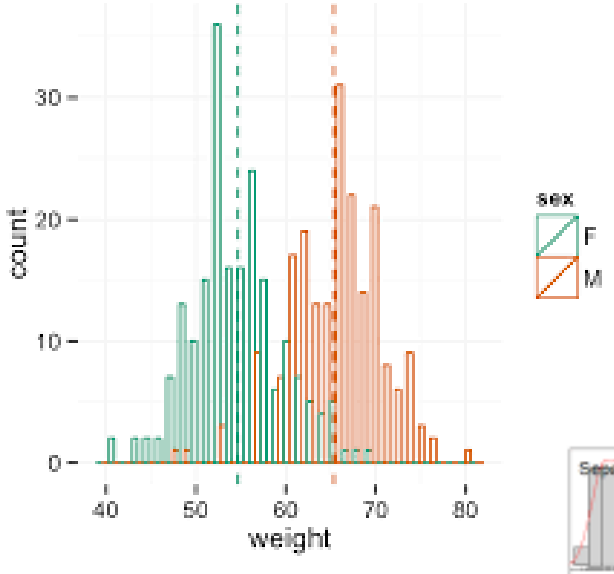
Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

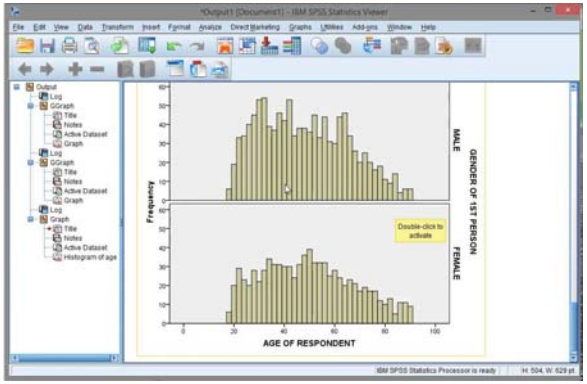
LIfBi LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

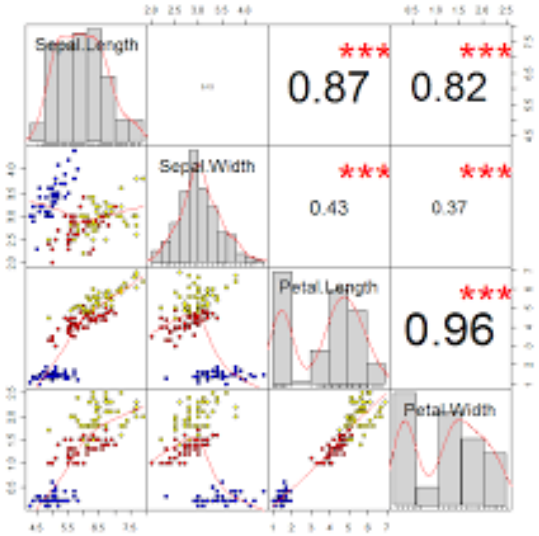
PEKİ R BU İŞİN NERESİNDE

Output kullanımı

Veri görselleştirme







Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

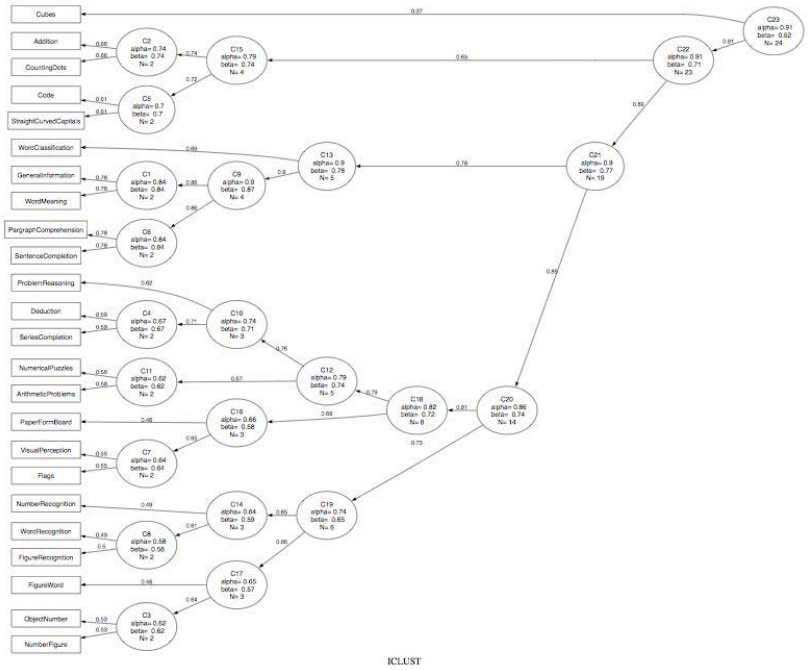
LIFBI
LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

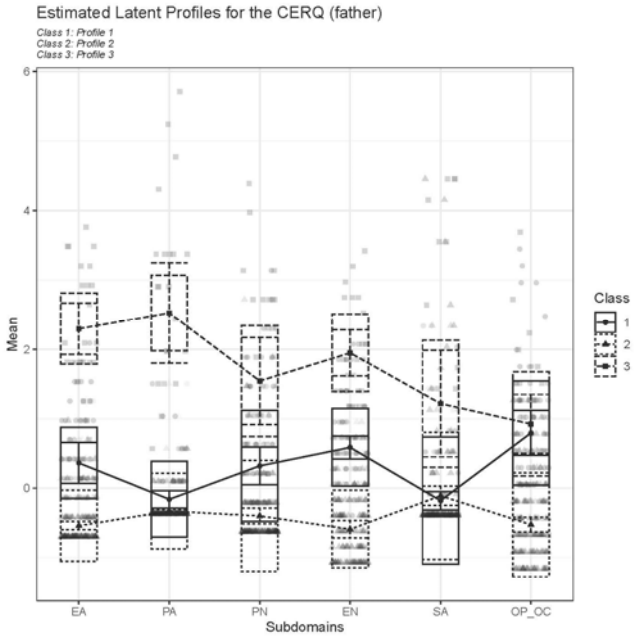
PEKİ R BU İŞİN NERESİNDE

Output kullanımı

Veri görselleştirme

Psikometrik analizler





Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

LIfBi
LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

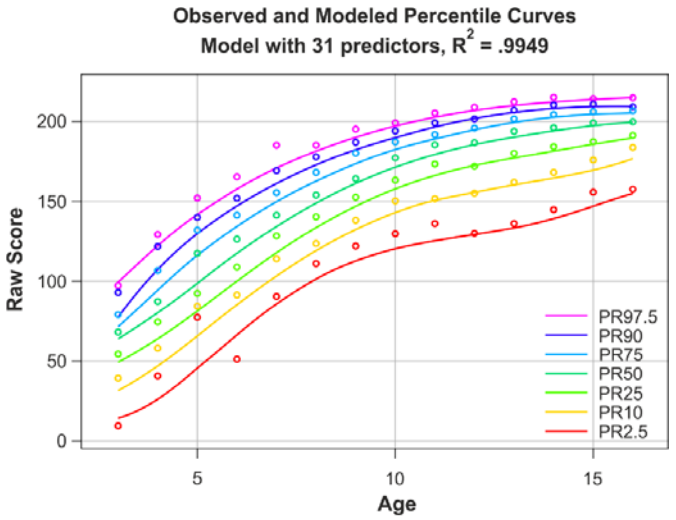
PEKİ R BU İŞİN NERESİNDE

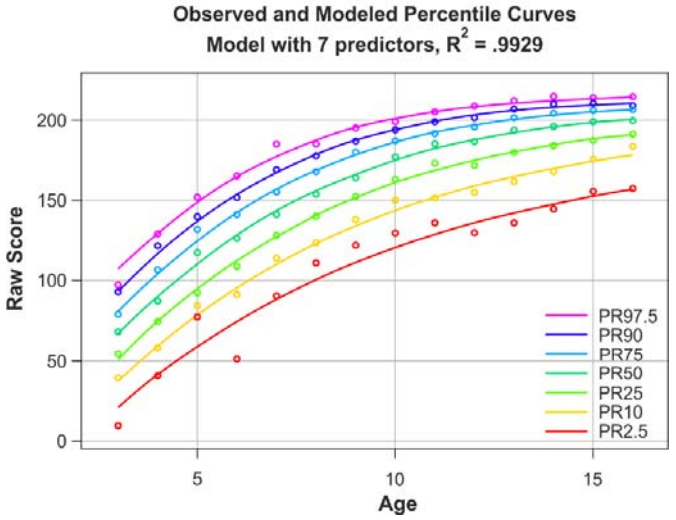
Output kullanımı

Veri görselleştirme

Psikometrik analizler

Yaş Normları





Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

PEKİ R BU İŞİN NERESİNDE

Output kullanımı
Veri görselleştirme
Psikometrik analizler
Yaş Normları
Denklemlerin Kontrolü

The equation for the three-parameter model is:

$$P(\theta) = c + (1 - c)\frac{1}{1 + e^{-a(\theta - b)}}$$

where: b is the difficulty parameter
a is the discrimination parameter
c is the guessing parameter and
$\grave{e}$ is the ability level

```
irf <- function( theta = 0      # ability parameter
                ,a = 1          # item discrimination
                ,b = 0          # item difficulty
                ,cc = 0         # guessing parameter
                ,type = "3pl"){
    if (type == "3pl"){
        prob <- cc+(1-cc)/(1+exp(-a*(theta-b)))
    }
    if (type == "norm"){
        prob <- cc+(1-cc)*pnorm(a*(theta-b))
    }
    return(prob)
}
```

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

LIfBi
LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

C:\Users\ozber\Downloads\Read_R_Parscale.r - Notepad++

Dosya Düzenle Ara Görünüm Kodlama Diller Ayarlar Araçlar Makrolar Çalıştır Eklentiler Pencereler ?

Read_R_Parscale.r

```r
# Notice the function returns whatever variable is at the end

# Skipper tells how many lines to skip at the top of a file
readParscale <- function(file_and_path, skipper){

  #Line lengths 77, 20, 20
   IRTPars <- read.fwf(file_and_path,
     width=list(c(7,-13,7,-3,7,-2,8,-3,7,-4,7,-2,7),c(-2,8,-2,8,-2,8),c(-1)), skip=skipper,
     col.names=c("ItemID", "slope", "slopeSE",
                 "loc", "locSE", "guess", "guessSE", "loc1", "loc2", "loc3"), as.is=T)
IRTPars
}

readParscale("RN.par",9)


#
# An improvement to automatically determine the number of skip lines
#

readParscale <- function(file_and_path){

  FindSkip <- read.fwf(file_and_path,8,as.is=TRUE)
  FindSkip <- FindSkip == "GROUP 01"
  FindSkip <- order(FindSkip,decreasing=TRUE)[1]

  #Line lengths 77, 20, 20
   IRTPars <- read.fwf(file_and_path,
     width=list(c(7,-13,7,-3,7,-2,8,-3,7,-4,7,-2,7),c(-2,8,-2,8,-2,8),c(-1)), skip=FindSkip,
     col.names=c("ItemID", "slope", "slopeSE",
                 "loc", "locSE", "guess", "guessSE", "loc1", "loc2", "loc3"), as.is=T)
IRTPars
}
```

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

PSİKOLOJİNİN ÇALIŞMA ALANLARI (PSİKOLOJİ ÖZELİNDE)

- Örgütsel
- Davranış Bilimleri
- Nöropsikoloji
- Klinik
- Sosyal

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

LIfBi
LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

ÇALIŞMALAR

WHY R TURKEY 2021

International Journal of Assessment Tools in Education
2021, Vol. 8, No. 2, 296–309
https://doi.org/10.21449/ijate.728362
Published at https://ijate.net/ https://dergipark.org.tr/en/pub/ijate *Research Article*

Examining the Dimensionality and Monotonicity of an Attitude Dataset based on the Item Response Theory Models

Seval Kula Kartal [1,*], **Ezgi Mor Dirlik** [2]

ÇALIŞMALAR

International Journal of Assessment Tools in Education
2020, Vol. 7, No. 1, 18–29
https://dx.doi.org/10.21449/ijate.629584
Published at http://www.ijate.net http://dergipark.org.tr/en/pub/ijate *Research Article*

Use of Item Response Theory to Validate Cyberbullying Sensibility Scale for University Students

Osman Tolga Arıcak [1], Akif Avcu [2,*], Feyza Topçu [1], Merve Gülçin Tutlu [1]

ÇALIŞMALAR

Psychological Methods
2003, Vol. 8, No. 2, 164–184

1082-989X/03/$12.00 DOI: 10.1037/1082-989X.8.2.164

How Many IRT Parameters Does It Take to Model Psychopathology Items?

Steven P. Reise
University of California, Los Angeles

Niels G. Waller
Vanderbilt University

The authors compared the fit of the 2- and 3-parameter logistic models (2PLM; 3PLM) on 15 unidimensional factor scales derived from the Minnesota Multiphasic Personality Inventory—Adolescent item pool. Log-likelihood chi-square deviance tests indicated that a 3PLM provided an improved fit. However, residual statistics indicated that the difference in fit between the 2 models was negligible. An unexpected finding was that from 10% to 30% of the items had substantial lower asymptote parameters ($c \geq .10$) when the scales were scored in the pathology or nonpathology directions. The authors argue that the large lower asymptote param-

ÇALIŞMALAR

Article

Journal of Psychoeducational Assessment
1–14

DOI: 10.1177/0734282919862144
journals.sagepub.com/home/jpa
SAGE

A Demonstration of Mokken Scale Analysis Methods Applied to Cognitive Test Validation Using the Egyptian WAIS-IV

Gomaa S. M. Abdelhamid[1,2], Juana Gómez-Benito[1], Ahmed T. M. Abdeltawwab[2], Mostafa H. S. Abu Bakr[2], and Amina M. Kazem[3]

Abstract

The fourth edition of the Wechsler Adult Intelligence Scale (WAIS-IV) has been used extensively for assessing adult intelligence. This study uses Mokken scale analysis to investigate the psychometric proprieties of WAIS-IV subtests adapted for the Egyptian population in a sample of 250 adults between 18 and 25 years of age. The monotone homogeneity model and the double monotonicity model were consistent with the subtest data. The items of all subtests except Matrix Reasoning, Information, Similarities, and Vocabulary formed a unidimensional scale. The WAIS-IV subtests have discriminatory and invariantly ordered items, although some items violated the invariant item ordering and scalability criteria. Therefore, the WAIS-IV subtests—with the exception of some items—are hierarchical scales that allow items to be

ÇALIŞMALAR

WHY R TURKEY 2021

Application of the Double Monotonicity Model to Polytomous Items

Scalability of the Beck Depression Items on Subjects with Eating Disorders

Teresa Rivas, Rosa Bersabé, and Carmen Berrocal

Facultad de Psicología, Universidad de Málaga, Spain

Abstract. This paper investigates the item scalability of the Beck Depression Inventory (BDI) in 252 subjects; 126 with and 126 without eating disorders. To do so, an order was established regarding the BDI items according to the clinical characteristics of the subjects with eating disorders. The nonparametric Item Response Theory (NIRT) model was applied to evaluate Monotone Homogeneity and Double Monotonicity of items, as well as the reliability of the scale in both groups. The results show that the order of the items is satisfied in the group with eating disorders, but not in the control group. Therefore, the results obtained allow the ordering of depression scores of subjects with eating disorders according to their clinical characteristics. This order is not valid for the depression scores of subjects who did not have eating disorders. It should be noted that the application of the Double Monotonicity model to polytomous items provides new and relevant information when compared to the data provided by the Classical Test Model. In addition, it is very useful for other items and subjects having certain characteristics.

ÇALIŞMALAR

WHY R TURKEY 2021

Article

Applied Psychological Measurement
36(6) 516–539

DOI: 10.1177/0146621612451050
http://apm.sagepub.com
SAGE

Exploratory Mokken Scale Analysis as a Dimensionality Assessment Tool: Why Scalability Does Not Imply Unidimensionality

Iris A. M. Smits[1], Marieke E. Timmerman[1], and Rob R. Meijer[1]

ÇALIŞMALAR

Personality and Individual Differences 91 (2016) 89–97

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Psychometric qualities of the Thought Suppression Inventory-Revised in different age groups

Kevin van Schie [a,b,*,1], Sabine Wanmaker [b], Iris Yocarini [b], Samantha Bouwmeester [b]

[a] Clinical Psychology, Utrecht University, PO Box 80140, NL-3508 TC Utrecht, The Netherlands
[b] Institute of Psychology, Erasmus University Rotterdam, PO Box 1738, 3000 DR Rotterdam, The Netherlands

PAKETLER

- **psych: Procedures for Psychological, Psychometric, and Personality Research**
- A general-purpose toolbox for personality, psychometric theory and experimental psychology. Functions are primarily for multivariate analysis and scale construction using factor analysis, principal component analysis, cluster analysis and reliability analysis, although others provide basic descriptive statistics. Item Response Theory is done using factor analysis of tetrachoric and polychoric correlations. Functions for analyzing data at multiple levels include within and between group statistics, including correlations and factor analysis. Functions for simulating and testing particular item and test structures are included. Several functions serve as a useful front end for structural equation modeling. Graphical displays of path diagrams, factor analysis and structural equation models are created using basic graphics.
- **NetworkToolbox: Methods and Measures for Brain, Cognitive, and Psychometric Network Analysis**
- Implements network analysis and graph theory measures used in neuroscience, cognitive science, and psychology. Aims to provide researchers with state-of-the-art methods and measures for estimating and analyzing brain, cognitive, and psychometric networks.

PAKETLER

- **psychometric: Applied Psychometric Theory**
- Contains functions useful for correlation theory, meta-analysis (validity-generalization), reliability, item analysis, inter-rater reliability, and classical utility
- **lavaan: Latent Variable Analysis**
- Fit a variety of latent variable models, including confirmatory factor analysis, structural equation modeling and latent growth curve models.
- **sem: Structural Equation Models**
- Functions for fitting general linear structural equation models (with observed and latent variables) using the RAM approach, and for fitting structural equations in observed-variable models by two-stage least squares.
- **cNORM: Continuous Norming**
- Conventional methods for producing standard scores in psychometrics or biometrics are often plagued with "jumps" or "gaps" (i.e., discontinuities) in norm tables and low confidence for assessing extreme scores.

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

UYGULAMA - WECHSLER ADULT INTELLİGENCE SCALE-REVISED (WAIS-R)

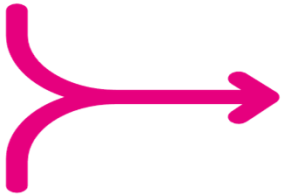
- McArdle and Prescott (1992, p.90) verisi
  - IN information
  - CO comprehension
  - SI similarities
  - VO vocabulary
  - PC picture completion
  - BD block design
  - PA picture arrangement
  - OA object assembly

  - Arithmetic, Memory Span for Digits, ve Digit Symbol Substitution dışarıda tutulmuştur.

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

UYGULAMA - WECHSLER ADULT INTELLİGENCE SCALE-REVISED (WAIS-R)

- McArdle and Prescott (1992, p.90) verisi
  - **IN information**
  - **CO comprehension**
  - **SI similarities**
  - **VO vocabulary**
  - PC picture completion
  - BD block design
  - PA picture arrangement
  - OA object assembly



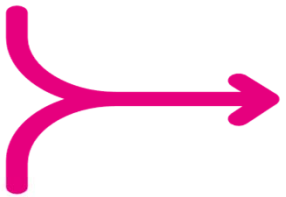
Verbal

- Arithmetic, Memory Span for Digits, ve Digit Symbol Substitution dışarıda tutulmuştur.

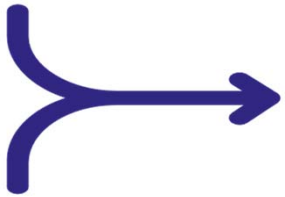
Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

UYGULAMA - WECHSLER ADULT INTELLİGENCE SCALE-REVISED (WAIS-R)

- McArdle and Prescott (1992, p.90) verisi
  - **IN information**
  - **CO comprehension**
  - **SI similarities**
  - **VO vocabulary**
  - **PC picture completion**
  - **BD block design**
  - **PA picture arrangement**
  - **OA object assembly**



Verbal



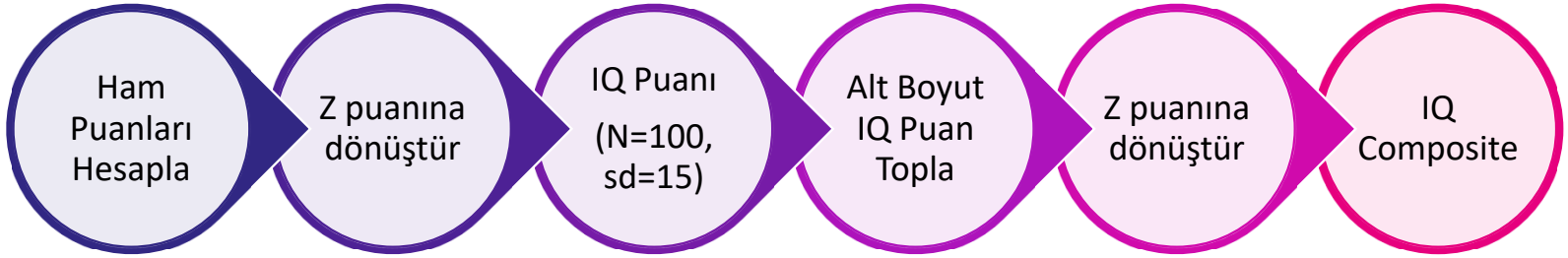
Performance

  - Arithmetic, Memory Span for Digits, ve Digit Symbol Substitution dışarıda tutulmuştur.

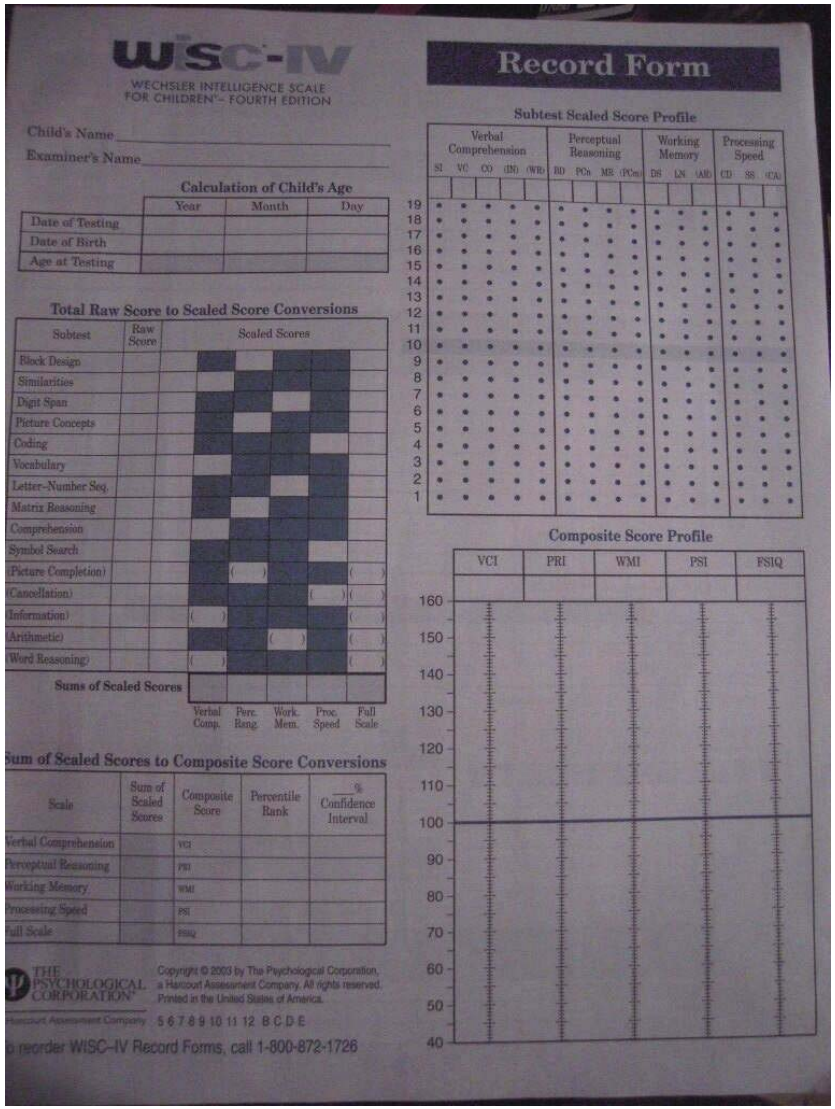
Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

UYGULAMA - WECHSLER ADULT INTELLİGENCE SCALE-REVISED (WAIS-R)

- WAIS Zeka Puanı Hesaplama Yöntemi,



Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de



WISC-IV

WECHSLER INTELLIGENCE SCALE FOR CHILDREN™ – FOURTH EDITION

Record Form

Child's Name

Examiner's Name

Calculation of Child's Age

	Year	Month	Day
Date of Testing			
Date of Birth			
Age at Testing			

Total Raw Score to Scaled Score Conversions

Subtest	Raw Score	Scaled Scores
Block Design		
Similarities		
Digit Span		
Picture Concepts		
Coding		
Vocabulary		
Letter-Number Seq.		
Matrix Reasoning		
Comprehension		
Symbol Search		
(Picture Completion)		( )
(Cancellation)		( ) ( )
(Information)		( )
(Arithmetic)		( )
(Word Reasoning)		( )
Sums of Scaled Scores		

Verbal Comp. | Perc. Reas. | Work. Mem. | Proc. Speed | Full Scale

Sum of Scaled Scores to Composite Score Conversions

Scale	Sum of Scaled Scores	Composite Score	Percentile Rank	% Confidence Interval
Verbal Comprehension		VCI		
Perceptual Reasoning		PRI		
Working Memory		WMI		
Processing Speed		PSI		
Full Scale		FSIQ		

THE PSYCHOLOGICAL CORPORATION

A Harcourt Assessment Company

5 6 7 8 9 10 11 12 B C D E

To reorder WISC-IV Record Forms, call 1-800-872-1726

Subtest Scaled Score Profile

Verbal Comprehension					Perceptual Reasoning				Working Memory			Processing Speed		
SI	VC	CO	(DI)	(WR)	BD	PCn	MR	(PCm)	DS	LN	(AR)	CD	SS	(CA)

19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Composite Score Profile

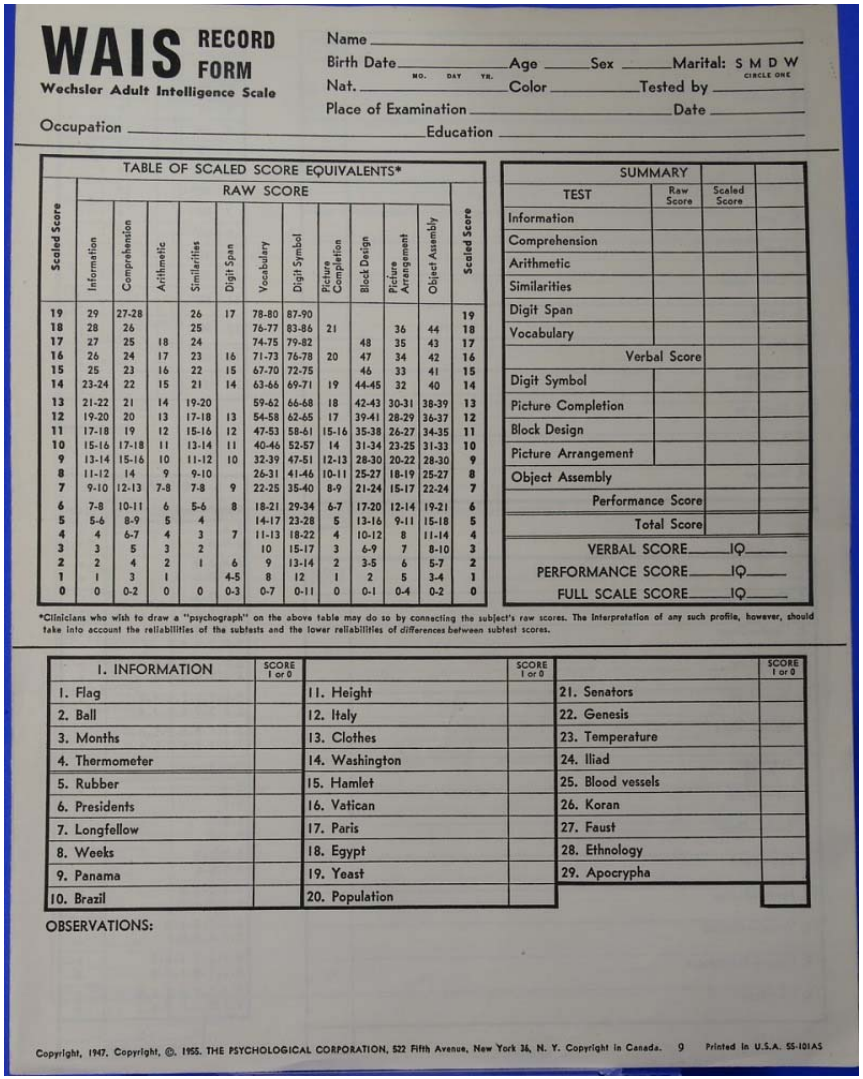
VCI	PRI	WMI	PSI	FSIQ

160 150 140 130 120 110 100 90 80 70 60 50 40

WHY TURKEY 2021

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

LIFBI LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES



WAIS RECORD FORM

Wechsler Adult Intelligence Scale

Name _____

Birth Date _____ (NO. DAY YR.) Age _____ Sex _____ Marital: S M D W (CIRCLE ONE)

Nat. _____ Color _____ Tested by _____

Place of Examination _____ Date _____

Occupation _____ Education _____

TABLE OF SCALED SCORE EQUIVALENTS*

Scaled Score	RAW SCORE											Scaled Score
	Information	Comprehension	Arithmetic	Similarities	Digit Span	Vocabulary	Digit Symbol	Picture Completion	Block Design	Picture Arrangement	Object Assembly	
19	29	27-28		26	17	78-80	87-90					19
18	28	26		25		76-77	83-86	21		36	44	18
17	27	25	18	24		74-75	79-82		48	35	43	17
16	26	24	17	23	16	71-73	76-78	20	47	34	42	16
15	25	23	16	22	15	67-70	72-75		46	33	41	15
14	23-24	22	15	21	14	63-66	69-71	19	44-45	32	40	14
13	21-22	21	14	19-20		59-62	66-68	18	42-43	30-31	38-39	13
12	19-20	20	13	17-18	13	54-58	62-65	17	39-41	28-29	36-37	12
11	17-18	19	12	15-16	12	47-53	58-61	15-16	35-38	26-27	34-35	11
10	15-16	17-18	11	13-14	11	40-46	52-57	14	31-34	23-25	31-33	10
9	13-14	15-16	10	11-12	10	32-39	47-51	12-13	28-30	20-22	28-30	9
8	11-12	14	9	9-10		26-31	41-46	10-11	25-27	18-19	25-27	8
7	9-10	12-13	7-8	7-8	9	22-25	35-40	8-9	21-24	15-17	22-24	7
6	7-8	10-11	6	5-6	8	18-21	29-34	6-7	17-20	12-14	19-21	6
5	5-6	8-9	5	4		14-17	23-28	5	13-16	9-11	15-18	5
4	4	6-7	4	3	7	11-13	18-22	4	10-12	8	11-14	4
3	3	5	3	2		10	15-17	3	6-9	7	8-10	3
2	2	4	2	1	6	9	13-14	2	3-5	6	5-7	2
1	1	3	1		4-5	8	12	1	2	5	3-4	1
0	0	0-2	0	0	0-3	0-7	0-11	0	0-1	0-4	0-2	0

*Clinicians who wish to draw a "psychograph" on the above table may do so by connecting the subject's raw scores. The interpretation of any such profile, however, should take into account the reliabilities of the subtests and the lower reliabilities of differences between subtest scores.

SUMMARY

TEST	Raw Score	Scaled Score	
Information			
Comprehension			
Arithmetic			
Similarities			
Digit Span			
Vocabulary			
Verbal Score			
Digit Symbol			
Picture Completion			
Block Design			
Picture Arrangement			
Object Assembly			
Performance Score			
Total Score			

VERBAL SCORE _____ IQ _____

PERFORMANCE SCORE _____ IQ _____

FULL SCALE SCORE _____ IQ _____

1. INFORMATION	SCORE 1 or 0		SCORE 1 or 0		SCORE 1 or 0
1. Flag		11. Height		21. Senators	
2. Ball		12. Italy		22. Genesis	
3. Months		13. Clothes		23. Temperature	
4. Thermometer		14. Washington		24. Iliad	
5. Rubber		15. Hamlet		25. Blood vessels	
6. Presidents		16. Vatican		26. Koran	
7. Longfellow		17. Paris		27. Faust	
8. Weeks		18. Egypt		28. Ethnology	
9. Panama		19. Yeast		29. Apocrypha	
10. Brazil		20. Population			

OBSERVATIONS:

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

Table 1

Conversion Table for Calculating Performance IQ When Symbol Search is Substituted for Coding on the WISC–III

Sum of scaled scores	IQ	Percentile rank	Confidence intervals 90%	Confidence intervals 95%	Sum of scaled scores	IQ	Percentile rank	Confidence intervals 90%	Confidence intervals 95%
5	44		42–56	41–57	51	102	55	95–109	94–110
6	46	< 0.1	44–58	43–59	52	103	58	95–109	95–111
7	47	< 0.1	45–58	44–60	53	104	61	97–110	96–112
8	48	< 0.1	46–59	45–61	54	105	66	98–111	96–112
9	49	< 0.1	47–60	45–62	55	107	68	100–113	98–114
10	51	0.1	49–62	47–63	56	108	70	101–114	99–115
11	52	0.1	49–63	48–65	57	109	75	101–115	100–116
12	53	0.1	50–64	49–65	58	110	77	102–116	101–117
13	54	0.1	51–65	50–66	59	112	79	104–118	103–119
14	56	0.2	53–67	52–68	60	113	81	105–119	104–120
15	57	0.3	54–68	53–69	61	114	84	106–119	105–121
16	58	0.3	55–68	54–70	62	115	86	107–120	106–122
17	59	0.4	56–69	55–71	63	116	87	108–121	106–122
18	61	1	58–71	56–72	64	118	90	110–123	108–124
19	62	1	59–72	57–73	65	119	91	110–124	109–125
20	63	1	60–73	58–74	66	120	92	111–125	110–126
21	64	1	60–74	59–75	67	121	94	113–127	112–128
22	66	1	62–76	61–77	68	123	95	114–127	112–129
23	67	2	63–77	62–78	69	124	96	115–128	114–130
24	68	2	64–78	63–79	70	125	96	116–129	115–131
25	69	2	65–78	64–80	71	126	97	117–130	115–131
26	71	3	67–80	66–82	72	128	98	119–132	117–132
27	72	3	68–81	66–83	73	129	98	119–133	118–134
28	73	4	69–82	67–83	74	130	98	120–134	119–135
29	74	4	70–83	68–84	75	131	99	121–135	120–136
30	76	5	72–85	70–86	76	133	99	123–137	122–138
31	77	6	72–86	71–87	77	134	99	124–137	123–139
32	78	7	73–87	72–88	78	135	99	125–138	124–140
33	79	8	74–88	73–89	79	136	99.5	126–139	124–141
34	80	9	75–89	74–90	80	138	99.6	128–141	126–142
35	82	10	77–90	76–92	81	139	99.7	129–142	127–143
36	82	12	78–91	77–93	82	140	99.7	129–143	128–144
37	83	13	79–92	78–94	83	141	99.8	130–144	129–145
38	84	14	80–93	78–94	84	143	99.9	132–146	131–147
39	85	18	82–95	80–96	85	144	99.9	133–147	132–148
40	87	19	82–96	81–97	86	145	99.9	134–148	133–149
41	89	23	83–97	82–98	87	146	99.9	135–148	134–150
42	90	25	84–98	83–99	88	147	> 99.9	136–149	134–151
43	92	27	86–100	85–101	89	149	> 99.9	138–151	136–152
44	93	32	87–100	86–102	90	150	> 99.9	139–152	137–153
45	94	34	88–101	87–103	91	151	> 99.9	139–153	138–154
46	95	37	89–102	87–103	92	152	> 99.9	140–154	139–155
47	97	39	91–104	88–104	93	154	> 99.9	142–156	141–157
48	98	45	91–105	90–106	94	155	> 99.9	143–157	142–158
49	99	47	92–106	91–107	95	156	> 99.9	144–159	143–159
50	100	50	93–107	92–108					

Note. WISC–III = Wechsler Intelligence Scale for Children—III.

KAYNAKÇA

- *JONES, L. V., & THISSEN, D. (2006). 1 A HISTORY AND OVERVIEW OF PSYCHOMETRICS. HANDBOOK OF STATISTICS, 26, 1-27.*
- *MCARDLE, J. J., & PRESCOTT, C. A. (1992). AGE-BASED CONSTRUCT VALIDATION USING STRUCTURAL EQUATION MODELING. EXPERIMENTAL AGING RESEARCH, 18, 87-115.*
- *NIE, N. H., BENT, D. H., & HULL, C. H. (1975). SPSS: STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES (VOL. 227). NEW YORK: MCGRAW-HILL.*
- *ROSENBERG, J. M., BEYMER, P. N., ANDERSON, D. J., VAN LISSA, C. J., & SCHMIDT, J. A. (2019). TIDYLPA: AN R PACKAGE TO EASILY CARRY OUT LATENT PROFILE ANALYSIS (LPA) USING OPEN-SOURCE OR COMMERCIAL SOFTWARE. JOURNAL OF OPEN SOURCE SOFTWARE, 3(30), 978.*
- *REVELLE, W., & REVELLE, M. W. (2015). PACKAGE 'PSYCH'. THE COMPREHENSIVE R ARCHIVE NETWORK, 337, 338.*
- *STOUT, W. (2002). PSYCHOMETRICS: FROM PRACTICE TO THEORY AND BACK. PSYCHOMETRIKA, 67(4), 485-518.*

Eren Halil ÖZBERK | Leibniz-Institute for Educational Trajectories | Wilhelmsplatz 3 | 96047 Bamberg | Germany
Phone: +49 951 863-3400 | eren.ozberk@lifbi.de | www.lifbi.de

TEŞEKKÜRLER

LEIBNIZ INSTITUTE FOR
EDUCATIONAL TRAJECTORIES

Wilhelmsplatz 3
96047 Bamberg | Germany

www.lifbi.de

Dr. Eren Halil Özberk

Phone: +49 951 863-3420
eren.ozberk@lifbi.de