

NORMING THE TONI-4 IN GEORGIA

Tamar Tatishvili

MAC Georgia



OVERVIEW

- Background of TONI-4
- Importance of norming in Georgia
- Research design
- Analysis plan
- Results of norming
- Interpretation of results



BACKGROUND OF TONI-4

- Does not require reading, writing, speaking, listening skills
- Problem-solving tasks
- Two forms: A and B, statistical analysis must be conducted separately



WHY IS NORMING NEEDED IN GEORGIA?

- U.S. norms only prior to this study
- Do not know whether differences exist
- Norming is needed for widespread use
- *Intended use* is to identify needs



SAMPLE FOR TONI-4 GEORGIA NORMING

- Pilot study ($n = 225$)
- Norming study ($n = 1155$)
- Full sample ($n = 1380$)



ANALYSIS

- Analysis of Variance (ANOVA) to test for group differences
 - Do scores for boys and girls differ?
 - Do scores differ by age?
- Comparing Georgian scores to existing U.S. norms
- Converting raw scores to a normed test score
 - Smoothing technique



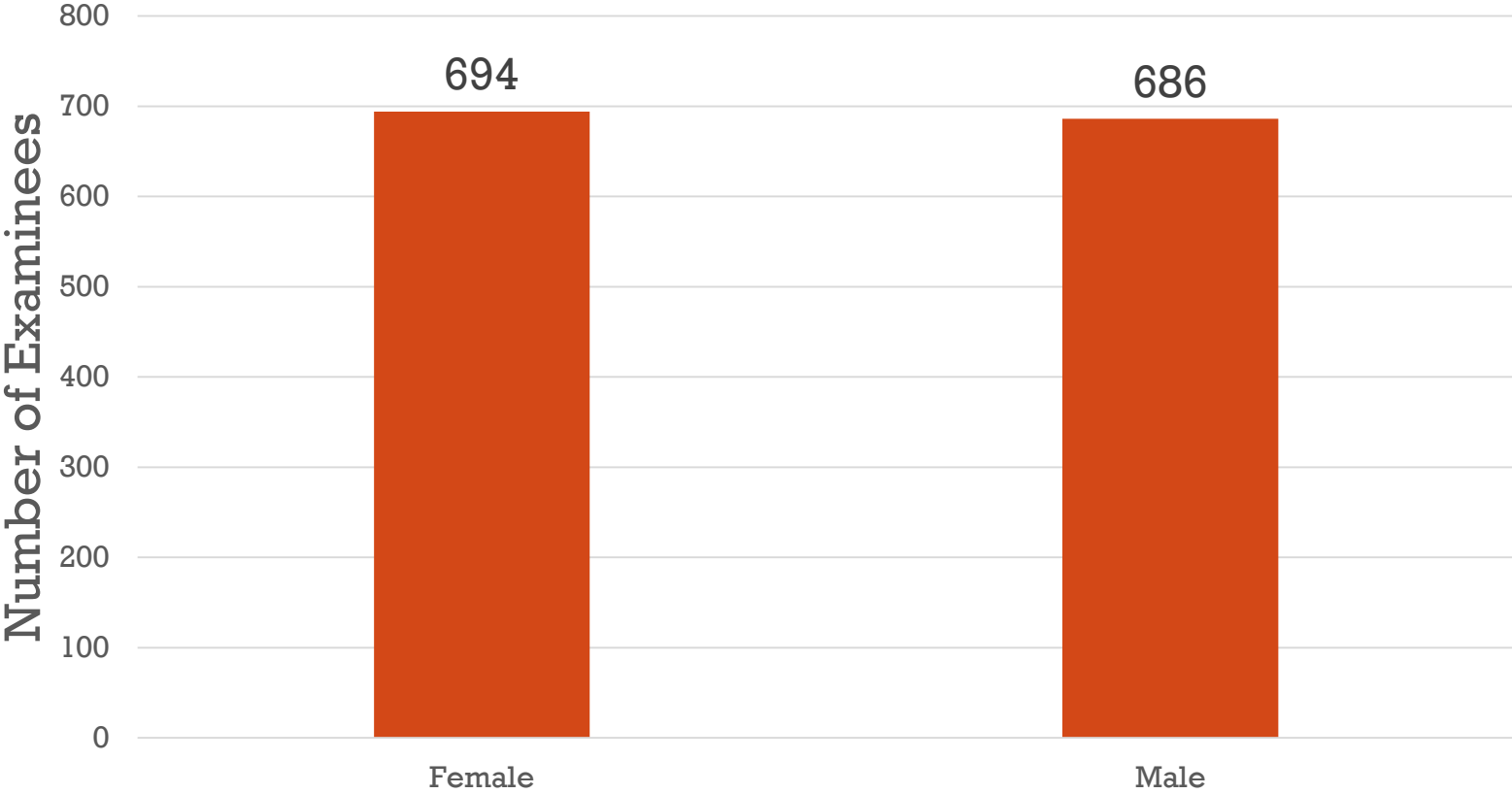
RESULTS



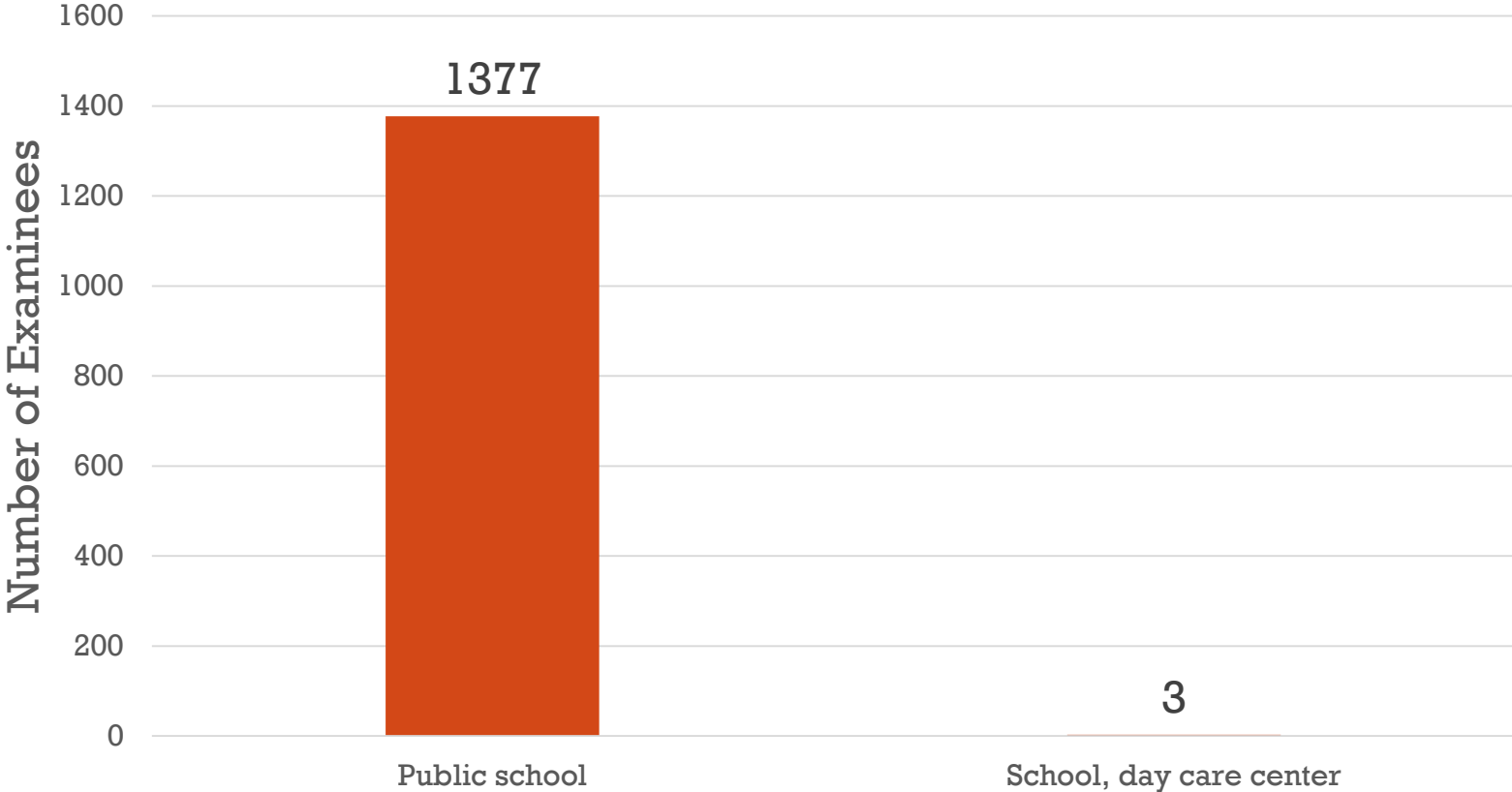
DEMOGRAPHIC CHARACTERISTICS



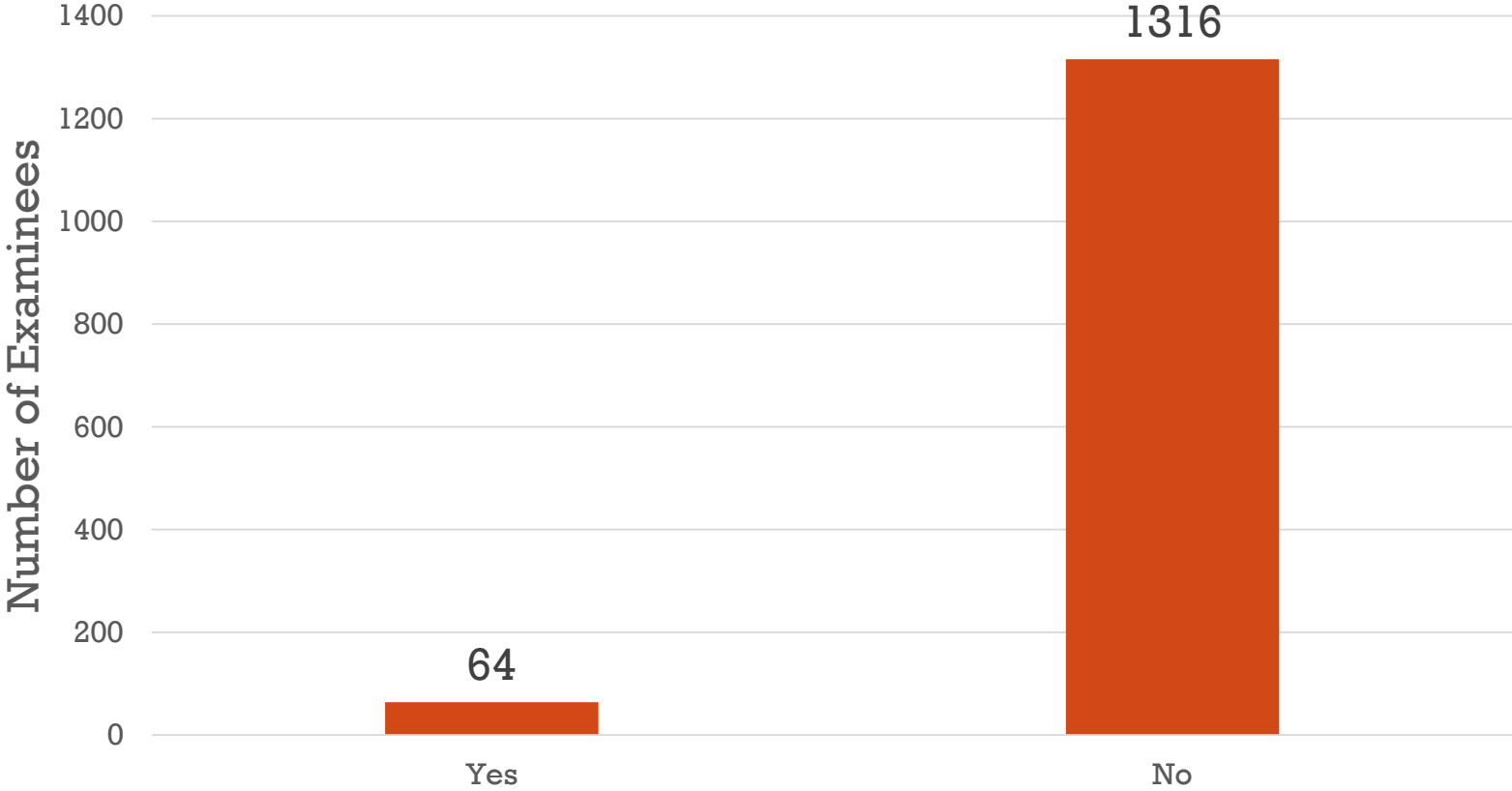
EXAMINEE GENDER ($N = 1380$)



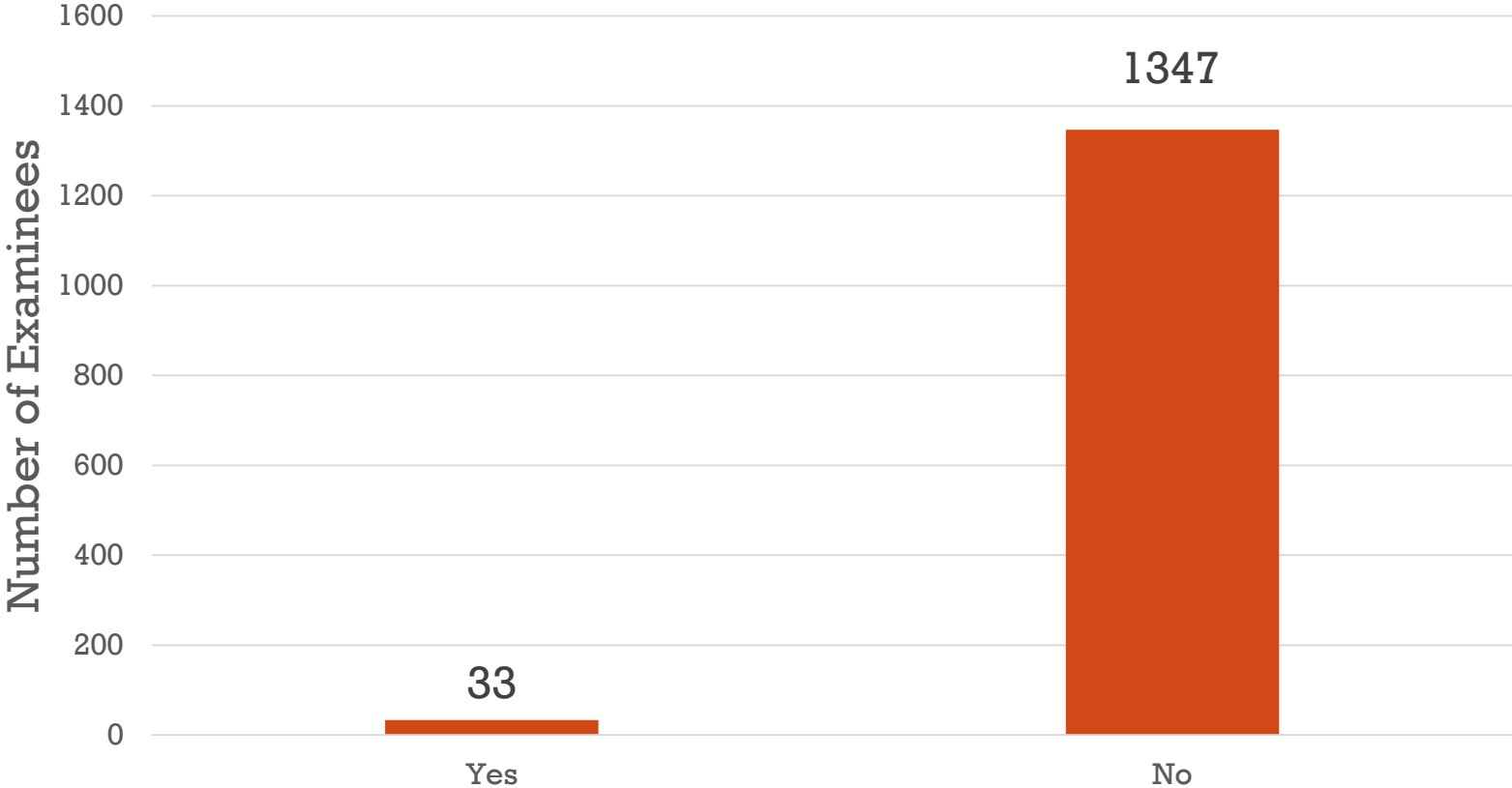
EXAMINEE REGISTRATION



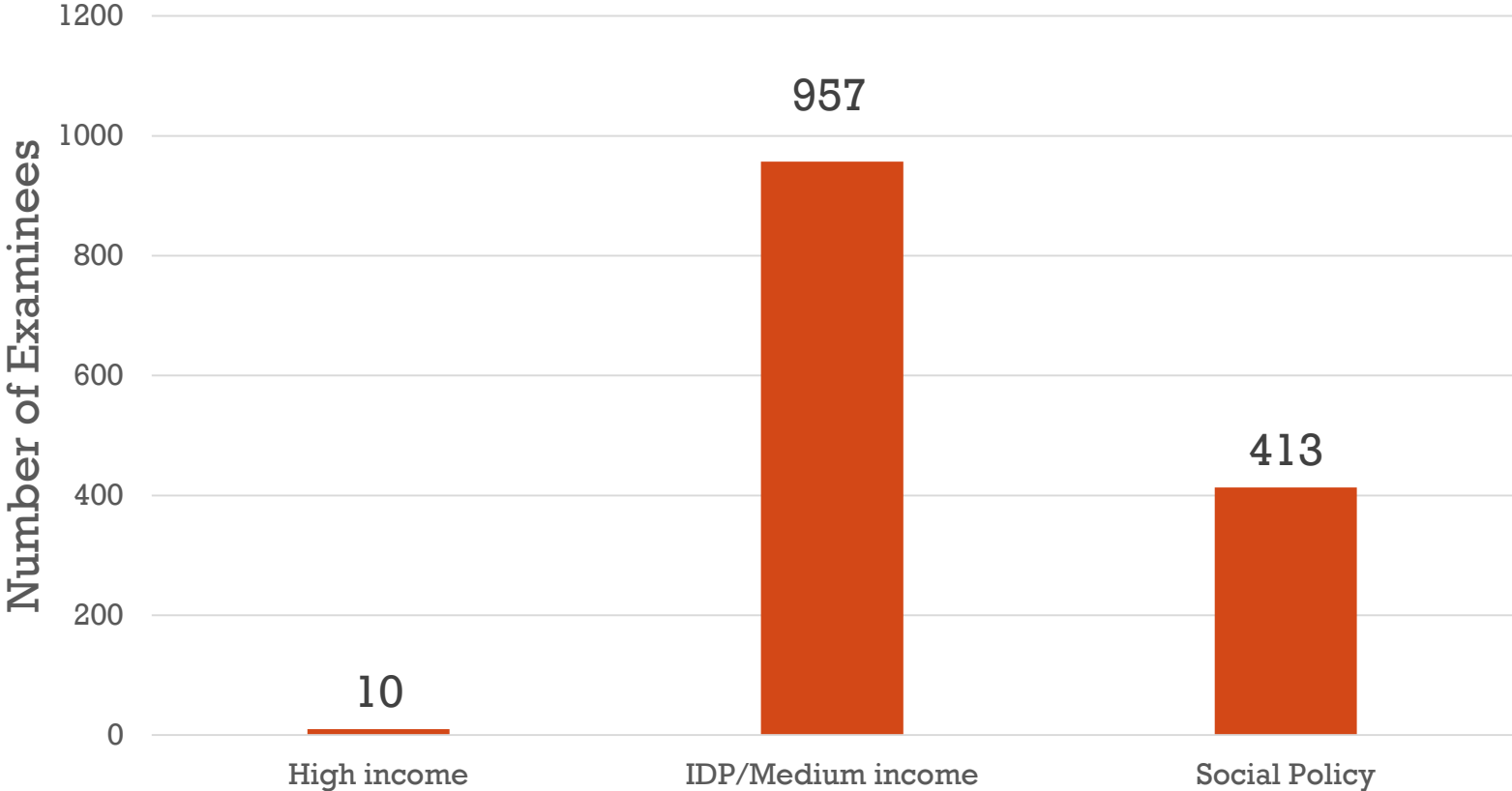
EXAMINEE DISABILITY STATUS



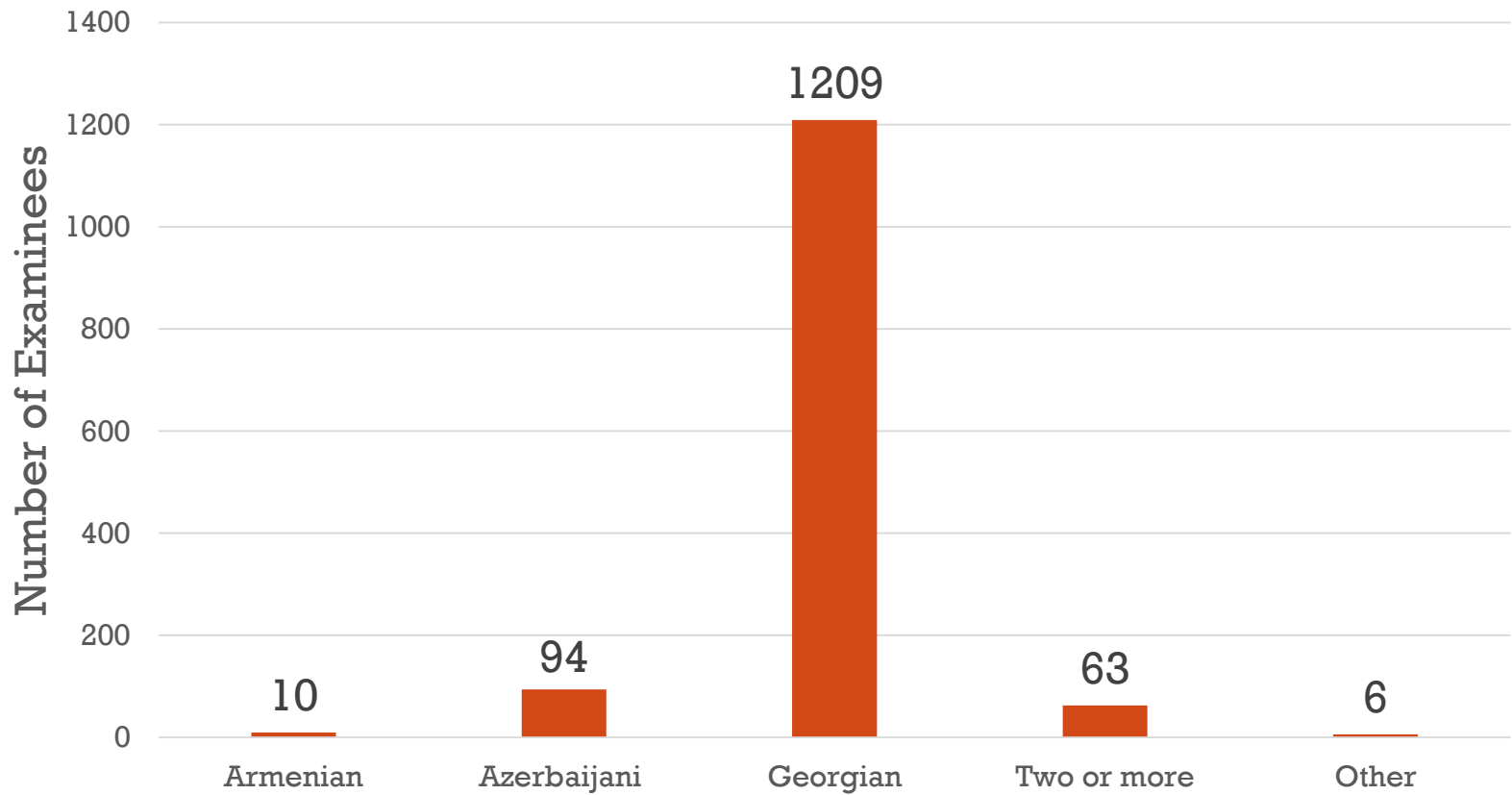
EXAMINEE MEDICATION



EXAMINEE SOCIAL STATUS



EXAMINEE ETHNICITY



TEST ADMINISTRATION CHARACTERISTICS



TESTING ADMINISTRATION CHARACTERISTICS: PILOT

	Characteristic	Frequency	Percent (%)
Instruction	Nonverbal	1	.5
	Oral	221	99.5
	Total	222	100.0
		Frequency	Percent
Administration	1 session	221	99.5
	Unknown	1	.5
	Total	222	100.0



TESTING ENVIRONMENT: PILOT

	<i>N</i>	Missing	Mean	Median	<i>SD</i>	Min.	Max.
Noise level	222	0	4.45	5.00	.858	1	5
Interruption	222	0	4.57	5.00	.814	1	5
Distractions	222	0	4.78	5.00	.587	2	5
Light	222	0	4.95	5.00	.246	3	5
Temperature	222	0	4.17	4.00	.906	2	5



TESTING EXAMINEE CHARACTERISTICS: PILOT

	<i>N</i>	Missing	Mean	Median	<i>SD</i>	Min.	Max.
Energy level	221	1	4.83	5.00	.402	3	5
Attitude toward test	221	1	4.87	5.00	.360	3	5
Rapport with examiner	221	1	4.90	5.00	.315	3	5
Perseverance	221	1	4.65	5.00	1.037	1	5
Visual acuity	221	1	4.94	5.00	.371	1	5
Hearing acuity	221	1	4.95	5.00	.305	2	5
State of health general	221	1	4.91	5.00	.370	2	5
State of health during testing	221	1	4.94	5.00	.279	3	5



TESTING ADMINISTRATION CHARACTERISTICS: FULL STUDY

	Characteristic	Frequency	Percent (%)
Instruction	Nonverbal	18	1.6
	Oral	1092	94.5
	Both	45	3.9
	Total	1155	100.0
Administration	1 session	1155	100.0
	Total	1155	100.0



TESTING ENVIRONMENT: FULL STUDY

	<i>N</i>	Missing	Mean	Median	<i>SD</i>	Min.	Max.
Noise level	1154	1	4.27	4	0.738	1	5
Interruption	1154	1	4.67	5	0.587	1	5
Distractions	1154	1	4.49	5	0.724	2	5
Light	1154	1	4.81	5	0.408	3	5
Temperature	1153	2	4.43	5	0.832	2	5



TESTING EXAMINEE CHARACTERISTICS: FULL STUDY

	<i>N</i>	Missing	Mean	Median	<i>SD</i>	Min.	Max.
Energy level	1154	1	4.77	5	0.451	2	5
Attitude toward test	1154	1	4.75	5	0.486	2	5
Rapport with examiner	1154	1	4.74	5	0.533	2	5
Perseverance	1154	1	4.65	5	0.582	3	5
Visual acuity	1154	1	4.97	5	0.206	2	5
Hearing acuity	1154	1	4.99	5	0.131	2	5
State of health general	1154	1	4.96	5	0.241	2	5
State of health during testing	1154	1	4.96	5	0.229	2	5



OVERALL DIFFERENCES AMONG GROUPS

Group	<i>F</i>	<i>p</i>	η^2	<i>M</i>	<i>SD</i>	<i>n</i>
Total	4.129	.001	.096	92.68	10.81	1002



NO SIGNIFICANT DIFFERENCES BY GENDER

Group	<i>F</i>	<i>p</i>	η^2	<i>M</i>	<i>SD</i>	<i>n</i>
Total	4.129	.001	.096	92.68	10.81	1002
Gender	1.186	.276	.001			
Female				92.11	9.92	426
Male				93.10	11.42	576



SIGNIFICANT DIFFERENCES BY AGE

Group	<i>F</i>	<i>p</i>	η^2	<i>M</i>	<i>SD</i>	<i>n</i>
Total	4.129	.001	.096	92.68	10.81	1002
Age	6.743	.001	.077			
6				96.55	11.14	100
7				97.14	9.53	100
8				95.98	11.06	96
9				94.62	10.23	71
10				94.47	9.64	76
11				91.47	10.63	85
12				90.27	10.36	79
13				90.84	12.44	97
14				91.4	10.90	86
15				88.27	8.49	75
16				88.49	10.41	63
17				90.19	9.37	57
18				86.71	4.66	17

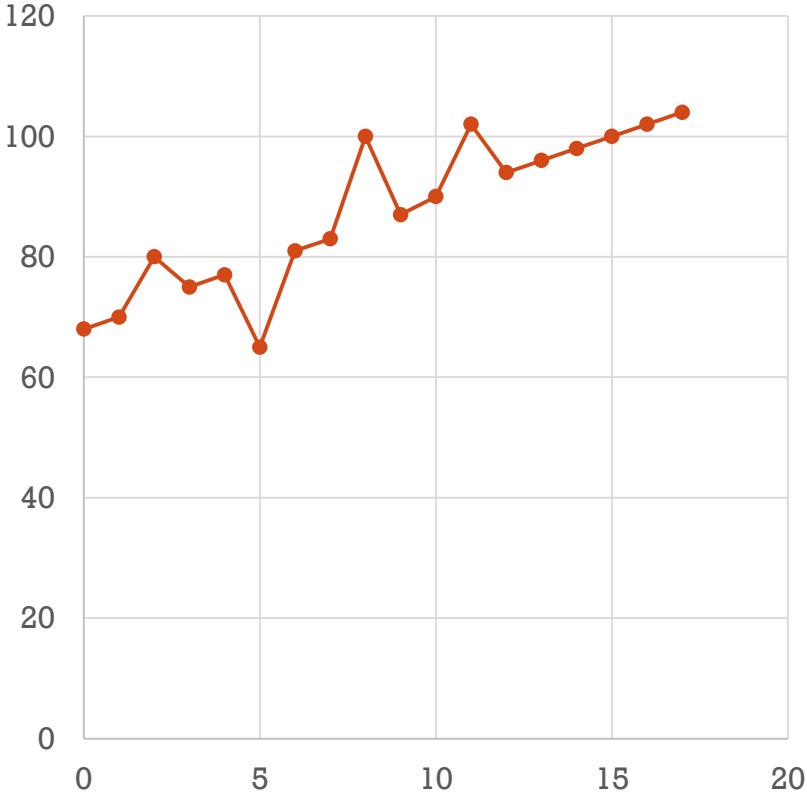
NORMING TABLES

- Norming conducting separately with each form A and B
- Convert raw scores to an index
- Calculated for each age group, based on the groups:
 - Mean
 - Standard deviation

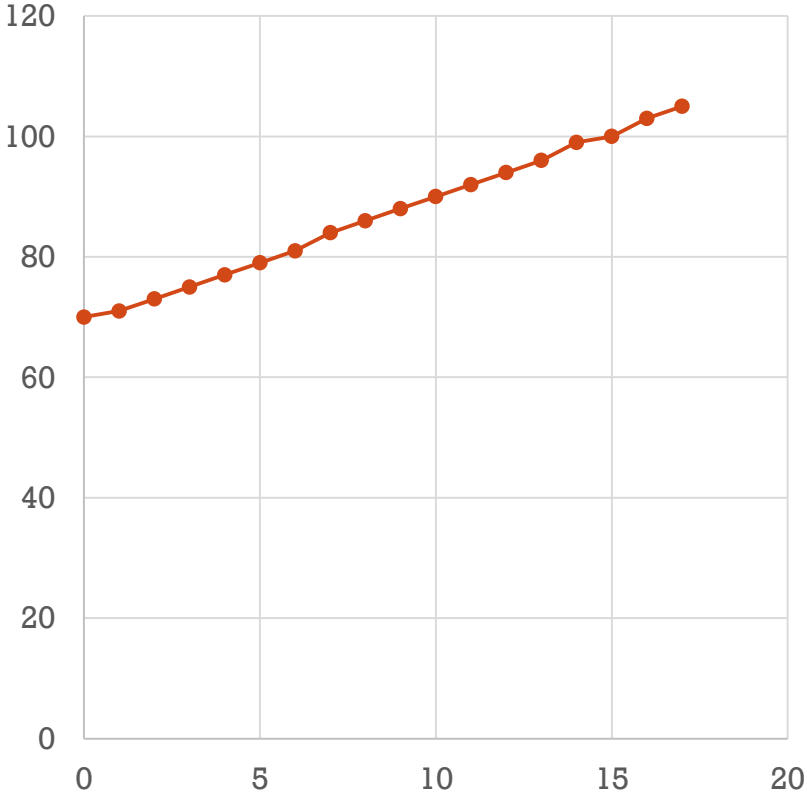


WHY SMOOTHING?

Before



After



LIMITATIONS

- No other intelligence test for criterion-relatedness
- Only one test, not generalizable, percentiles questionable



WHAT MIGHT ACCOUNT FOR THESE FINDINGS?

- Low motivation for higher grades
- High stakes → high anxiety for higher grades
- Change in educational programs
- Other thoughts?

