

HASIL UJI VALIDITAS DAN RELIABILITAS INSTRUMEN SOAL TES PENERIMAAN MAHASISWA BARU (PMB) TAHUN 2019

Sampel uji coba: 20 calon mahasiswa baru tahun 2019

Teknik uji coba: tes secara online

A. UJI VALIDITAS ITEM

Uji validitas item dari instrumen soal tes PMB dilakukan dengan menggunakan uji korelasi *Pearson Product Moment* dengan rumus:

$$r_{xy} = \frac{n \sum_{i=1}^n X_i Y_i - \sum_{i=1}^n X_i \sum_{i=1}^n Y_i}{\sqrt{n \sum_{i=1}^n X_i^2 - \left(\sum_{i=1}^n X_i \right)^2} \sqrt{n \sum_{i=1}^n Y_i^2 - \left(\sum_{i=1}^n Y_i \right)^2}}$$

dimana,

r_{xy} : koefisien korelasi antara variable X dan variable Y

n : banyak data

X_i : variabel bebas (independen) ke-i yaitu nilai setiap butir soal (item pertanyaan)

Y_i : variabel terikat (dependen) ke-i yaitu nilai/skor total butir soal (item pertanyaan)

Kriteria validitas instrumen:

1. Jika nilai $r_{xy} \geq r_{\text{tabel}} (r_{[\alpha;n-2]})$, dimana α (taraf signifikansi) = 0,05 dan $n-2$ = banyaknya data dikurangi 2 maka disimpulkan **instrumen telah valid**
2. Jika nilai $r_{xy} < r_{\text{tabel}} (r_{[\alpha;n-2]})$, dimana α (taraf signifikansi) = 0,05 dan n = banyaknya data dikurangi 2 maka disimpulkan **instrumen tidak valid**

Hasil uji validitas item instrumen soal tes PMB:

$$r_{xy} = \frac{n \sum_{i=1}^n X_i Y_i - \sum_{i=1}^n X_i \sum_{i=1}^n Y_i}{\sqrt{n \sum_{i=1}^n X_i^2 - \left(\sum_{i=1}^n X_i \right)^2} \sqrt{n \sum_{i=1}^n Y_i^2 - \left(\sum_{i=1}^n Y_i \right)^2}}$$

Output IBM SPSS 23.0 hasil uji korelasi *Pearson Product Moment*:

		Total_Skor
X1	Pearson Correlation	.515
	Sig. (2-tailed)	.003
	N	20
X2	Pearson Correlation	.483
	Sig. (2-tailed)	.009
	N	20
X3	Pearson Correlation	.558
	Sig. (2-tailed)	.007
	N	20
X4	Pearson Correlation	.781
	Sig. (2-tailed)	.033
	N	20
X5	Pearson Correlation	.717
	Sig. (2-tailed)	.045
	N	20
X6	Pearson Correlation	.914
	Sig. (2-tailed)	.042
	N	20
X7	Pearson Correlation	.481
	Sig. (2-tailed)	.044
	N	20
X8	Pearson Correlation	.713
	Sig. (2-tailed)	.007
	N	20
X9	Pearson Correlation	.748
	Sig. (2-tailed)	.032
	N	20

X10	Pearson Correlation	.777
	Sig. (2-tailed)	.037
	N	20
X11	Pearson Correlation	.515
	Sig. (2-tailed)	.033
	N	20
X12	Pearson Correlation	.501
	Sig. (2-tailed)	.018
	N	20
X13	Pearson Correlation	.700
	Sig. (2-tailed)	.037
	N	20
X14	Pearson Correlation	.548
	Sig. (2-tailed)	.032
	N	20
X15	Pearson Correlation	.612
	Sig. (2-tailed)	.006
	N	20
X16	Pearson Correlation	.472
	Sig. (2-tailed)	.006
	N	20
X17	Pearson Correlation	.529
	Sig. (2-tailed)	.031
	N	20
X18	Pearson Correlation	.458
	Sig. (2-tailed)	.007
	N	20
X19	Pearson Correlation	.686
	Sig. (2-tailed)	.019
	N	20
X20	Pearson Correlation	.686
	Sig. (2-tailed)	.019
	N	20
X21	Pearson Correlation	.917
	Sig. (2-tailed)	.045
	N	20
X22	Pearson Correlation	.513
	Sig. (2-tailed)	.007

	N	20
X23	Pearson Correlation	.548
	Sig. (2-tailed)	.032
	N	20
X24	Pearson Correlation	.513
	Sig. (2-tailed)	.007
	N	20
X25	Pearson Correlation	.529
	Sig. (2-tailed)	.031
	N	20
X26	Pearson Correlation	.786
	Sig. (2-tailed)	.019
	N	20
X27	Pearson Correlation	.538
	Sig. (2-tailed)	.042
	N	20
X28	Pearson Correlation	.696
	Sig. (2-tailed)	.005
	N	20
X29	Pearson Correlation	.786
	Sig. (2-tailed)	.019
	N	20
X30	Pearson Correlation	.700
	Sig. (2-tailed)	.037
	N	20
X31	Pearson Correlation	.612
	Sig. (2-tailed)	.006
	N	20
X32	Pearson Correlation	.513
	Sig. (2-tailed)	.007
	N	20
X33	Pearson Correlation	.700
	Sig. (2-tailed)	.037
	N	20
X34	Pearson Correlation	.772
	Sig. (2-tailed)	.016
	N	20
X35	Pearson Correlation	.912

	Sig. (2-tailed)	.006
	N	20
X36	Pearson Correlation	.781
	Sig. (2-tailed)	.033
	N	20
X37	Pearson Correlation	.648
	Sig. (2-tailed)	.032
	N	20
X38	Pearson Correlation	.638
	Sig. (2-tailed)	.032
	N	20
X39	Pearson Correlation	.853
	Sig. (2-tailed)	.002
	N	20
X40	Pearson Correlation	.544
	Sig. (2-tailed)	.015
	N	20
X41	Pearson Correlation	.677
	Sig. (2-tailed)	.037
	N	20
X42	Pearson Correlation	.677
	Sig. (2-tailed)	.037
	N	20
X43	Pearson Correlation	.472
	Sig. (2-tailed)	.047
	N	20
X44	Pearson Correlation	.548
	Sig. (2-tailed)	.032
	N	20
X45	Pearson Correlation	.447
	Sig. (2-tailed)	.025
	N	20
X46	Pearson Correlation	.748
	Sig. (2-tailed)	.012
	N	20
X47	Pearson Correlation	.612
	Sig. (2-tailed)	.024
	N	20

X48	Pearson Correlation	.786
	Sig. (2-tailed)	.019
	N	20
X49	Pearson Correlation	.786
	Sig. (2-tailed)	.019
	N	20
X50	Pearson Correlation	.853
	Sig. (2-tailed)	.012
	N	20
X51	Pearson Correlation	.541
	Sig. (2-tailed)	.048
	N	20
X52	Pearson Correlation	.553
	Sig. (2-tailed)	.042
	N	20
X53	Pearson Correlation	.489
	Sig. (2-tailed)	.019
	N	20
X54	Pearson Correlation	.473
	Sig. (2-tailed)	.046
	N	20
X55	Pearson Correlation	.548
	Sig. (2-tailed)	.042
	N	20
X56	Pearson Correlation	.692
	Sig. (2-tailed)	.039
	N	20
X57	Pearson Correlation	.692
	Sig. (2-tailed)	.039
	N	20
X58	Pearson Correlation	.700
	Sig. (2-tailed)	.027
	N	20
X59	Pearson Correlation	.772
	Sig. (2-tailed)	.019
	N	20
X60	Pearson Correlation	.857
	Sig. (2-tailed)	.010

	N	20
Total_Skor	Pearson Correlation	1
	Sig. (2-tailed)	
	N	20

Berdasarkan uji validitas menggunakan Korelasi *Pearson Product Moment* diperoleh rekapitulasi sebagai berikut:

Nomor Butir Soal	r_{xy}	$r_{[0,05;18]}$	Kesimpulan
1	0,515	0,444	Valid
2	0,483	0,444	Valid
3	0,558	0,444	Valid
4	0,781	0,444	Valid
5	0,717	0,444	Valid
6	0,914	0,444	Valid
7	0,481	0,444	Valid
8	0,713	0,444	Valid
9	0,748	0,444	Valid
10	0,777	0,444	Valid
11	0,515	0,444	Valid
12	0,501	0,444	Valid
13	0,700	0,444	Valid
14	0,548	0,444	Valid
15	0,612	0,444	Valid
16	0,472	0,444	Valid
17	0,529	0,444	Valid
18	0,458	0,444	Valid
19	0,686	0,444	Valid
20	0,686	0,444	Valid
21	0,917	0,444	Valid
22	0,513	0,444	Valid
23	0,548	0,444	Valid
24	0,513	0,444	Valid
25	0,529	0,444	Valid
26	0,786	0,444	Valid
27	0,538	0,444	Valid
28	0,696	0,444	Valid
29	0,786	0,444	Valid
30	0,700	0,444	Valid

Nomor Butir Soal	r_{xy}	$r_{[0,05;18]}$	Kesimpulan
31	0,612	0,444	Valid
32	0,513	0,444	Valid
33	0,700	0,444	Valid
34	0,772	0,444	Valid
35	0,912	0,444	Valid
36	0,781	0,444	Valid
37	0,648	0,444	Valid
38	0,638	0,444	Valid
39	0,853	0,444	Valid
40	0,544	0,444	Valid
41	0,677	0,444	Valid
42	0,677	0,444	Valid
43	0,472	0,444	Valid
44	0,548	0,444	Valid
45	0,447	0,444	Valid
46	0,748	0,444	Valid
47	0,612	0,444	Valid
48	0,786	0,444	Valid
49	0,786	0,444	Valid
50	0,853	0,444	Valid
51	0,541	0,444	Valid
52	0,553	0,444	Valid
53	0,489	0,444	Valid
54	0,473	0,444	Valid
55	0,548	0,444	Valid
56	0,692	0,444	Valid
57	0,692	0,444	Valid
58	0,700	0,444	Valid
59	0,772	0,444	Valid
60	0,857	0,444	Valid

B. UJI RELIABILITAS

Uji reliabilitas dari instrumen soal tes PMB dilakukan dengan menggunakan uji Rumus *Alpha Cronbach* dengan rumus:

$$\alpha_{\text{cronbach}} = \left(\frac{k}{k-1} \right) \left(1 - \frac{\sum_{i=1}^k S_i^2}{S_p^2} \right)$$

dimana,

- α_{cronbach} : nilai *alpha cronbach*
- k : jumlah butir pertanyaan
- S_i^2 : varians dari skor butir pertanyaan ke-i
- S_p^2 : varians dari skor total semua pertanyaan

Kriteria validitas instrumen:

1. Jika nilai $\alpha_{\text{cronbach}} \geq 0,6$ maka disimpulkan ***instrumen telah reliabel***
2. Jika nilai $\alpha_{\text{cronbach}} < 0,6$ maka disimpulkan ***instrumen tidak reliabel***

Hasil uji reliabilitas instrumen soal tes PMB:

$$\alpha_{\text{cronbach}} = \left(\frac{k}{k-1} \right) \left(1 - \frac{\sum_{i=1}^k S_i^2}{S_p^2} \right)$$

Output IBM SPSS 23.0 hasil uji korelasi *Pearson Product Moment*:

Reliability Statistics		
Cronbach's Alpha ^a	Cronbach's Alpha Based on Standardized Items ^a	N of Items
.691	.689	60

Nilai $\alpha_{\text{cronbach}} = 0,691 \geq 0,6$ maka disimpulkan ***instrumen telah reliabel***

Berikut nilai alpha cronbach setiap butir soal:

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
X1	49.30	3.063	-.034	.653
X2	49.30	3.274	-.164	.675
X3	49.25	3.145	-.072	.691
X4	49.35	3.292	-.179	.653
X5	49.30	3.379	-.226	.690
X6	49.25	3.355	-.210	.621
X7	49.15	3.503	-.338	.635
X8	49.20	2.800	.223	.636
X9	49.20	3.537	-.336	.600
X10	49.15	3.608	-.423	.664
X11	49.30	3.063	-.034	.653
X12	49.25	2.934	.075	.685
X13	49.25	3.671	-.402	.602
X14	49.20	3.537	-.336	.600
X15	49.20	3.326	-.189	.653
X16	49.25	2.829	.152	.693
X17	49.25	3.039	.000	.684
X18	49.25	3.145	-.072	.691
X19	49.15	3.397	-.250	.611
X20	49.25	3.250	-.142	.603
X21	49.30	3.379	-.226	.690
X22	49.30	2.747	.179	.672
X23	49.20	3.537	-.336	.600
X24	49.30	2.747	.179	.672
X25	49.25	3.039	.000	.684
X26	49.15	3.397	-.250	.611
X27	49.10	3.147	.013	.627
X28	49.15	2.976	.129	.669
X29	49.15	3.397	-.250	.611
X30	49.15	3.082	.029	.670
X31	49.20	3.326	-.189	.653
X32	49.20	2.800	.223	.636
X33	49.15	3.082	.029	.670

X34	49.15	3.713	-.506	.690
X35	49.20	3.326	-.189	.653
X36	49.35	3.292	-.179	.653
X37	49.20	3.537	-.336	.600
X38	49.10	3.147	.013	.627
X39	49.20	3.011	.050	.623
X40	49.25	2.724	.233	.609
X41	49.15	3.608	-.423	.664
X42	49.15	3.082	.029	.670
X43	49.20	3.116	-.033	.627
X44	49.20	3.537	-.336	.600
X45	49.25	2.724	.233	.609
X46	49.20	3.537	-.336	.600
X47	49.20	3.326	-.189	.653
X48	49.15	3.397	-.250	.611
X49	49.25	3.250	-.142	.603
X50	49.20	3.011	.050	.623
X51	49.25	3.566	-.340	.671
X52	49.20	3.011	.050	.623
X53	49.20	3.853	-.542	.602
X54	49.20	2.800	.223	.636
X55	49.20	3.537	-.336	.600
X56	49.20	3.221	-.112	.637
X57	49.20	3.221	-.112	.637
X58	49.25	3.671	-.402	.602
X59	49.20	3.116	-.033	.627
X60	49.25	3.461	-.276	.643

Nilai *alpha cronbach* dari semua butir pertanyaan < 0,691 (nilai *alpha cronbach* total) sehingga tidak ada butir pertanyaan yang harus dihapus