

**LAMPIRAN 4**

**Uji Validitas X2 (Kemampuan)**

No. Resp	ITEM INSTRUMEN X2															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Jumlah
1	4	3	3	3	4	4	4	5	4	5	3	4	4	3	5	58
2	3	4	4	4	4	3	3	4	3	4	3	3	3	4	3	52
3	3	3	3	3	3	3	4	3	3	4	3	3	3	4	3	48
4	3	3	3	3	3	2	3	3	3	3	2	3	3	2	4	43
5	5	3	4	4	3	4	5	3	4	5	4	3	4	3	4	58
6	4	3	3	5	3	3	3	3	3	5	3	3	5	3	3	52
7	3	4	4	4	5	3	5	5	5	5	4	4	5	4	5	65
8	4	4	4	4	4	4	3	4	3	4	4	3	4	4	4	57
9	3	3	3	4	3	4	3	4	3	4	3	4	3	3	4	51
10	3	3	3	3	4	4	3	4	3	5	3	4	4	3	4	53
11	4	4	3	4	4	3	4	4	3	4	4	3	3	5	5	57
12	4	5	4	5	3	3	4	4	3	5	5	4	4	3	3	59
13	4	3	4	3	4	4	3	3	4	4	4	3	4	2	4	53
14	3	4	4	4	4	3	3	4	4	5	4	3	3	3	3	54
15	3	3	3	5	3	3	3	3	4	5	3	4	3	3	3	51
16	4	4	3	5	4	4	4	5	4	5	5	5	4	4	4	64
17	3	3	3	4	3	3	4	4	4	4	4	3	4	4	4	54
18	4	4	4	5	4	4	4	4	4	4	3	3	5	4	4	60
19	3	3	3	3	3	3	3	4	3	4	2	4	4	4	4	50
20	4	4	3	5	4	4	3	5	3	5	5	5	5	5	4	64
Jumlah	71	70	68	80	72	68	71	78	70	89	71	71	77	70	77	1103
r hitung	0,514	0,606	0,311	0,527	0,626	0,526	0,534	0,730	0,468	0,595	0,760	0,493	0,631	0,501	0,409	
r tabel	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	0,444	
ket.	V	V	D	V	V	V	V	V	V	V	V	V	V	V	D	

$\Sigma X1^2$	$\Sigma X2^2$	$\Sigma X3^2$	$\Sigma X4^2$	$\Sigma X5^2$	$\Sigma X6^2$	$\Sigma X7^2$	$\Sigma X8^2$	$\Sigma X9^2$	$\Sigma X10^2$	$\Sigma X11^2$	$\Sigma X12^2$	$\Sigma X13^2$	$\Sigma X4^2$	$\Sigma X15^2$	$Y^2$
16	9	9	9	16	16	16	25	16	25	9	16	16	9	25	3364
9	16	16	16	16	9	9	16	9	16	9	9	9	16	9	2704
9	9	9	9	9	9	16	9	9	16	9	9	9	16	9	2304
9	9	9	9	9	4	9	9	9	9	4	9	9	4	16	1849
25	9	16	16	9	16	25	9	16	25	16	9	16	9	16	3364
16	9	9	25	9	9	9	9	9	25	9	9	25	9	9	2704
9	16	16	16	25	9	25	25	25	25	16	16	25	16	25	4225
16	16	16	16	16	16	9	16	9	16	16	9	16	16	16	3249
9	9	9	16	9	16	9	16	9	16	9	16	9	9	16	2601
9	9	9	9	16	16	9	16	9	25	9	16	16	9	16	2809
16	16	9	16	16	9	16	16	9	16	16	9	9	25	25	3249
16	25	16	25	9	9	16	16	9	25	25	16	16	9	9	3481
16	9	16	9	16	16	9	9	16	16	16	9	16	4	16	2809
9	16	16	16	16	9	9	16	16	25	16	9	9	9	9	2916
9	9	9	25	9	9	9	9	16	25	9	16	9	9	9	2601
16	16	9	25	16	16	16	25	16	25	25	25	16	16	16	4096
9	9	9	16	9	9	16	16	16	16	16	9	16	16	16	2916
16	16	16	25	16	16	16	16	16	16	9	9	25	16	16	3600
9	9	9	9	9	9	9	16	9	16	4	16	16	16	16	2500
16	16	9	25	16	16	9	25	9	25	25	25	25	25	16	4096
259	252	236	332	266	238	261	314	252	403	267	261	307	258	305	61437

$\Sigma XY 1$	$\Sigma XY 2$	$\Sigma XY 3$	$\Sigma XY 4$	$\Sigma XY 5$	$\Sigma XY 6$	$\Sigma XY 7$	$\Sigma XY 8$	$\Sigma XY 9$	$\Sigma XY 10$	$\Sigma XY 11$	$\Sigma XY 12$	$\Sigma XY 13$	$\Sigma XY 14$	$\Sigma XY 15$
232	174	174	174	232	232	232	290	232	290	174	232	232	174	290
156	208	208	208	208	156	156	208	156	208	156	156	156	208	156
144	144	144	144	144	144	192	144	144	192	144	144	144	192	144
129	129	129	129	129	86	129	129	129	129	86	129	129	86	172
290	174	232	232	174	232	290	174	232	290	232	174	232	174	232
208	156	156	260	156	156	156	156	156	260	156	156	260	156	156
195	260	260	260	325	195	325	325	325	325	260	260	325	260	325
228	228	228	228	228	228	171	228	171	228	228	171	228	228	228
153	153	153	204	153	204	153	204	153	204	153	204	153	153	204
159	159	159	159	212	212	159	212	159	265	159	212	212	159	212
228	228	171	228	228	171	228	228	171	228	228	171	171	285	285
236	295	236	295	177	177	236	236	177	295	295	236	236	177	177
212	159	212	159	212	212	159	159	212	212	212	159	212	106	212
162	216	216	216	216	162	162	216	216	270	216	162	162	162	162
153	153	153	255	153	153	153	153	204	255	153	204	153	153	153
256	256	192	320	256	256	256	320	256	320	320	320	256	256	256
162	162	162	216	162	162	216	216	216	216	216	162	216	216	216
240	240	240	300	240	240	240	240	240	240	180	180	300	240	240
150	150	150	150	150	150	150	200	150	200	100	200	200	200	200
256	256	192	320	256	256	192	320	192	320	320	320	320	320	256
3949	3900	3767	4457	4011	3784	3955	4358	3891	4947	3988	3952	4297	3905	4276

## Lampiran 4

### Uji Validitas Variabel X<sub>2</sub>

Pengujian validitas dilakukan menggunakan rumus Korelasi Pearson

$$r_{xy} = \frac{N \cdot \sum XY - \sum X \sum Y}{\sqrt{[N \cdot \sum X^2 - (\sum X)^2][N \cdot \sum Y^2 - (\sum Y)^2]}}$$

$$r_{xy} = \frac{20(3949) - (70)(1103)}{\sqrt{((20(259) - (71)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{78980 - 78313}{\sqrt{(139)(12131)}} = \frac{667}{1298,54} = 0,514$$

$$r_{xy} = \frac{20(3900) - (70)(1103)}{\sqrt{((20(252) - (70)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{78000 - 77210}{\sqrt{(140)(12131)}} = \frac{790}{1303,20} = 0,606$$

$$r_{xy} = \frac{20(3767) - (68)(1103)}{\sqrt{((20(236) - (68)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{75340 - 75004}{\sqrt{(96)(12131)}} = \frac{336}{1079,15} = 0,311$$

$$r_{xy} = \frac{20(4457) - (80)(1103)}{\sqrt{((20(332) - (80)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{89140 - 88240}{\sqrt{(240)(12131)}} = \frac{900}{1706,29} = 0,527$$

$$r_{xy} = \frac{20(4011) - (72)(1103)}{\sqrt{((20(266) - (72)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{80220 - 79416}{\sqrt{(136)(12131)}} = \frac{804}{1284,45} = 0,626$$

$$r_{xy} = \frac{20(3784) - (68)(1103)}{\sqrt{((20(238) - (68)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{75680 - 75004}{\sqrt{(136)(12131)}} = \frac{676}{1284,45} = 0,526$$

$$r_{xy} = \frac{20(3955) - (71)(1103)}{\sqrt{((20(261) - (71)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{79100 - 78313}{\sqrt{(179)(12131)}} = \frac{787}{1473,58} = 0,534$$

$$r_{xy} = \frac{20(4358) - (78)(1103)}{\sqrt{((20(314) - (78)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{87160 - 86034}{\sqrt{(196)(12131)}} = \frac{1126}{1541,97} = 0,730$$

$$r_{xy} = \frac{20(3891) - (70)(1103)}{\sqrt{((20(252) - (70)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{77820 - 77210}{\sqrt{(140)(12131)}} = \frac{610}{1303,20} = 0,468$$

$$r_{xy} = \frac{20(4947) - (89)(1103)}{\sqrt{((20(403) - (89)^2)(20(61437) - (1103)^2))}}$$

$$r_{xy} = \frac{98940 - 98167}{\sqrt{(139)(12131)}} = \frac{773}{1298,54} = 0,595$$

$$r_{xy} = \frac{20(3988)-(71)(1103)}{\sqrt{((20(267)-(71)^2)(20(61437)-(1103)^2))}} = \frac{79760-78313}{\sqrt{(299)(12131)}} = \frac{1447}{1904,51} = 0,760$$

$$r_{xy} = \frac{79760-78313}{\sqrt{(299)(12131)}} = \frac{1447}{1904,51} = 0,760$$

$$r_{xy} = \frac{20(3952)-(71)(1103)}{\sqrt{((20(261)-(71)^2)(20(61437)-(1103)^2))}} = \frac{79040-78313}{\sqrt{(179)(12131)}} = \frac{727}{1473,58} = 0,493$$

$$r_{xy} = \frac{79040-78313}{\sqrt{(179)(12131)}} = \frac{727}{1473,58} = 0,493$$

$$r_{xy} = \frac{20(4297)-(77)(1103)}{\sqrt{((20(307)-(77)^2)(20(61437)-(1103)^2))}} = \frac{85940-84931}{\sqrt{(211)(12131)}} = \frac{1009}{1599,89} = 0,631$$

$$r_{xy} = \frac{85940-84931}{\sqrt{(211)(12131)}} = \frac{1009}{1599,89} = 0,631$$

$$r_{xy} = \frac{20(3905)-(70)(1103)}{\sqrt{((20(258)-(70)^2)(20(61437)-(1103)^2))}} = \frac{78100-77210}{\sqrt{(260)(12131)}} = \frac{890}{1775,96} = 0,501$$

$$r_{xy} = \frac{78100-77210}{\sqrt{(260)(12131)}} = \frac{890}{1775,96} = 0,501$$

$$r_{xy} = \frac{20(4276)-(77)(1103)}{\sqrt{((20(305)-(77)^2)(20(61437)-(1103)^2))}} = \frac{85520-84931}{\sqrt{(171)(12131)}} = \frac{589}{1440,28} = 0,409$$

$$r_{xy} = \frac{85520-84931}{\sqrt{(171)(12131)}} = \frac{589}{1440,28} = 0,409$$

Dari hasil perhitungan seluruh item ditampilkan pada tabel berikut

No Item	r hitung	r tabel	Ket
1	0,514	0,444	Valid
2	0,606	0,444	Valid
3	0,311	0,444	Tidak Valid
4	0,527	0,444	Valid
5	0,626	0,444	Valid
6	0,526	0,444	Valid
7	0,534	0,444	Valid
8	0,730	0,444	Valid
9	0,468	0,444	Valid
10	0,595	0,444	Valid
11	0,760	0,444	Valid
12	0,493	0,444	Valid
13	0,631	0,444	Valid
14	0,501	0,444	Valid
15	0,409	0,444	Tidak Valid

Dari hasil perhitungan seperti tercantum pada tabel diatas maka terdapat 2 item pernyataan pada variabel X<sub>2</sub> yang dinyatakan tidak valid dan harus dikeluarkan dari instrument.

### Uji Reliabilitas Variabel X<sub>2</sub>

Uji reliabilitas instrument dengan alpha cronbach, terlebih dahulu menghitung varians masing masing butir dengan rumus berikut,

$$\sigma_1^2 = \frac{\sum X^2 - \frac{(\sum X)^2}{n}}{n-1}$$

$$\sigma_1^2 = \frac{259 - \frac{(71)^2}{20}}{19} = 0,366$$

$$\sigma_1^2 = \frac{252 - \frac{(70)^2}{20}}{19} = 0,368$$

$$\sigma_1^2 = \frac{236 - \frac{(68)^2}{20}}{19} = 0,253$$

$$\sigma_1^2 = \frac{332 - \frac{(80)^2}{20}}{19} = 0,631$$

$$\sigma_1^2 = \frac{266 - \frac{(72)^2}{20}}{19} = 0,358$$

$$\sigma_1^2 = \frac{238 - \frac{(68)^2}{20}}{19} = 0,358$$

$$\sigma_1^2 = \frac{261 - \frac{(71)^2}{20}}{19} = 0,471$$

$$\sigma_1^2 = \frac{314 - \frac{(78)^2}{20}}{19} = 0,516$$

$$\sigma_1^2 = \frac{252 - \frac{(70)^2}{20}}{19} = 0,368$$

$$\sigma_1^2 = \frac{403 - \frac{(89)^2}{20}}{19} = 0,366$$

$$\sigma_1^2 = \frac{267 - \frac{(71)^2}{20}}{19} = 0,787$$

$$\sigma_1^2 = \frac{261 - \frac{(71)^2}{20}}{19} = 0,471$$

$$\sigma_1^2 = \frac{307 - \frac{(77)^2}{20}}{19} = 0,555$$

$$\sigma_1^2 = \frac{258 - \frac{(70)^2}{20}}{19} = 1,684$$

$$\sigma_1^2 = \frac{305 - \frac{(77)^2}{20}}{19} = 0,450$$

Dari hasil perhitungan varians seluruh item ditampilkan pada tabel berikut

No item	$\sigma_1^2$
1	0,366
2	0,369
3	0,253
4	0,631
5	0,358
6	0,358
7	0,471
8	0,516

9	0,368
10	0,366
11	0,787
12	0,471
13	0,555
14	0,684
15	0,450
$\sum s_i^2$	7,002

Menghitung varians total item sebagai berikut

$$\sigma_1^2 = \frac{61437 - \frac{(1103)^2}{20}}{19} = 31,924$$

Menghitung nilai Alpha Cronbach dengan rumus

$$r_{11} = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum s_i^2}{s_i^2} \right)$$

$$r_{11} = \left( \frac{20}{19} \right) \left( 1 - \frac{7,002}{31,924} \right)$$

$$r_{11} = (1,053)(0,781)$$

$$r_{11} = 0,822 \text{ (reliabilitasnya sangat tinggi)}$$