

Lampiran 4

Uji Validitas Variabel X1

Pengujian validitas dilakukan menggunakan rumus Korelasi Pearson

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

$$r_{xy} = \frac{20(7281) - (86)(1686)}{\sqrt{((20(374) - (86)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{145620 - 144996}{\sqrt{(84)(12964)}} = \frac{624}{1043,54} = 0,598$$

$$r_{xy} = \frac{20(6946) - (82)(1686)}{\sqrt{((20(340) - (82)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{138920 - 138252}{\sqrt{(76)(12964)}} = \frac{668}{992,60} = 0,673$$

$$r_{xy} = \frac{20(7029) - (83)(1686)}{\sqrt{((20(349) - (83)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{140580 - 139938}{\sqrt{(91)(12964)}} = \frac{642}{1086,15} = 0,591$$

$$r_{xy} = \frac{20(7035) - (83)(1686)}{\sqrt{((20(349) - (83)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{140700 - 139938}{\sqrt{(91)(12964)}} = \frac{762}{1086,15} = 0,702$$

$$r_{xy} = \frac{20(7183) - (85)(1686)}{\sqrt{((20(367) - (85)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{143660 - 143310}{\sqrt{(115)(12964)}} = \frac{350}{1221,01} = 0,287$$

$$r_{xy} = \frac{20(7440) - (88)(1686)}{\sqrt{((20(392) - (88)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{148800 - 148368}{\sqrt{(96)(12964)}} = \frac{432}{1115,59} = 0,387$$

$$r_{xy} = \frac{20(7619) - (90)(1686)}{\sqrt{((20(410) - (90)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{152380 - 151740}{\sqrt{(100)(12964)}} = \frac{640}{1138,60} = 0,562$$

$$r_{xy} = \frac{20(7204) - (85)(1686)}{\sqrt{((20(369) - (85)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{144080 - 143310}{\sqrt{(155)(12964)}} = \frac{770}{1417,54} = 0,543$$

$$r_{xy} = \frac{20(7200) - (85)(1686)}{\sqrt{((20(367) - (85)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{144000 - 143310}{\sqrt{(115)(12964)}} = \frac{690}{1221,01} = 0,565$$

$$r_{xy} = \frac{20(7038) - (83)(1686)}{\sqrt{((20(355) - (83)^2)(20(142778) - (1686)^2))}}$$

$$r_{xy} = \frac{140760 - 139938}{\sqrt{(211)(12964)}} = \frac{822}{1653,91} = 0,497$$

$$r_{xy} = \frac{20(7028)-(83)(1686)}{\sqrt{((20(349)-(83)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{140560-139938}{\sqrt{(91)(12964)}} = \frac{622}{1086,15} = 0,573$$

$$r_{xy} = \frac{20(6776)-(80)(1686)}{\sqrt{((20(328)-(80)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{135520-134880}{\sqrt{(160)(12964)}} = \frac{640}{1440,22} = 0,444$$

$$r_{xy} = \frac{20(7278)-(86)(1686)}{\sqrt{((20(376)-(86)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{145560-144996}{\sqrt{(124)(12964)}} = \frac{564}{1267,89} = 0,445$$

$$r_{xy} = \frac{20(7041)-(83)(1686)}{\sqrt{((20(351)-(83)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{140820-139938}{\sqrt{(131)(12964)}} = \frac{882}{1303,18} = 0,677$$

$$r_{xy} = \frac{20(7370)-(87)(1686)}{\sqrt{((20(383)-(87)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{147400-146682}{\sqrt{(91)(12964)}} = \frac{718}{1086,15} = 0,661$$

$$r_{xy} = \frac{20(6961)-(82)(1686)}{\sqrt{((20(344)-(82)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{139220-138252}{\sqrt{(156)(12964)}} = \frac{968}{1422,11} = 0,681$$

$$r_{xy} = \frac{20(7029)-(83)(1686)}{\sqrt{((20(349)-(83)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{140580-139938}{\sqrt{(91)(12964)}} = \frac{642}{1086,15} = 0,591$$

$$r_{xy} = \frac{20(7130)-(84)(1686)}{\sqrt{((20(360)-(84)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{142600-141624}{\sqrt{(144)(12964)}} = \frac{976}{1366,31} = 0,714$$

$$r_{xy} = \frac{20(7097)-(84)(1686)}{\sqrt{((20(356)-(84)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{141940-141624}{\sqrt{(64)(12964)}} = \frac{316}{910,88} = 0,347$$

$$r_{xy} = \frac{20(7093)-(84)(1686)}{\sqrt{((20(356)-(84)^2(20(142778)-(1686)^2))}}$$

$$r_{xy} = \frac{141860-141624}{\sqrt{(64)(12964)}} = \frac{236}{910,88} = 0,259$$

Dari hasil perhitungan seluruh item ditampilkan pada tabel berikut

No Item	r hitung	r tabel	Ket
1	0,598	0,444	Valid
2	0,673	0,444	Valid
3	0,591	0,444	Valid
4	0,702	0,444	Valid
5	0,287	0,444	Tidak Valid
6	0,387	0,444	Tidak Valid
7	0,562	0,444	Valid
8	0,543	0,444	Valid
9	0,565	0,444	Valid
10	0,497	0,444	Valid
11	0,573	0,444	Valid
12	0,444	0,444	Valid
13	0,445	0,444	Valid
14	0,677	0,444	Valid
15	0,661	0,444	Valid
16	0,681	0,444	Valid
17	0,591	0,444	Valid
18	0,714	0,444	Valid
19	0,347	0,444	Tidak Valid
20	0,259	0,444	Tidak Valid

Dari hasil perhitungan seperti tercantum pada tabel diatas maka terdapat 7 item pernyataan pada variabel X1 yang dinyatakan tidak valid dan harus dikeluarkan dari instrument.

Uji Reliabilitas Variabel X1

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

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

$$\sigma_1^2 = \frac{374 - \frac{(86)^2}{20}}{19} = 0,221$$

$$\sigma_1^2 = \frac{340 - \frac{(82)^2}{20}}{19} = 0,2$$

$$\sigma_1^2 = \frac{349 - \frac{(83)^2}{20}}{19} = 0,239$$

$$\sigma_1^2 = \frac{349 - \frac{(83)^2}{20}}{19} = 0,239$$

$$\sigma_1^2 = \frac{367 - \frac{(85)^2}{20}}{19} = 0,303$$

$$\sigma_1^2 = \frac{392 - \frac{(88)^2}{20}}{19} = 0,253$$

$$\sigma_1^2 = \frac{410 - \frac{(90)^2}{20}}{19} = 0,263$$

$$\sigma_1^2 = \frac{369 - \frac{(85)^2}{20}}{19} = 0,408$$

$$\sigma_1^2 = \frac{367 - \frac{(85)^2}{20}}{19} = 0,303$$

$$\sigma_1^2 = \frac{355 - \frac{(83)^2}{20}}{19} = 0,555$$

$$\sigma_1^2 = \frac{349 - \frac{(83)^2}{20}}{19} = 0,239$$

$$\sigma_1^2 = \frac{328 - \frac{(80)^2}{20}}{19} = 0,421$$

$$\sigma_1^2 = \frac{376 - \frac{(86)^2}{20}}{19} = 0,326$$

$$\sigma_1^2 = \frac{351 - \frac{(83)^2}{20}}{19} = 0,539$$

$$\sigma_1^2 = \frac{383 - \frac{(87)^2}{20}}{19} = 0,239$$

$$\sigma_1^2 = \frac{344 - \frac{(82)^2}{20}}{19} = 0,411$$

$$\sigma_1^2 = \frac{349 - \frac{(83)^2}{20}}{19} = 0,239$$

$$\sigma_1^2 = \frac{360 - \frac{(84)^2}{20}}{19} = 0,379$$

$$\sigma_1^2 = \frac{356 - \frac{(84)^2}{20}}{19} = 0,168$$

$$\sigma_1^2 = \frac{356 - \frac{(84)^2}{20}}{19} = 0,168$$

Dari hasil perhitungan varians seluruh item ditampilkan pada tabel berikut

No item	σ_1^2
1	0,221
2	0,2
3	0,239
4	0,239
5	0,303
6	0,253
7	0,263
8	0,408
9	0,303
10	0,555
11	0,239
12	0,421
13	0,326
14	0,539
15	0,239
16	0,411
17	0,239
18	0,379
19	0,168
20	0,168
$\sum s_i^2$	5,915

Menghitung varians total item sebagai berikut

$$\sigma_1^2 = \frac{142778 - \frac{(1686)^2}{20}}{19} = 34,116$$

Menghitung nilai Alpha Cronbach dengan rumus

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

$$r_{11} = \left(\frac{20}{19} \right) \left(1 - \frac{5,915}{34,116} \right)$$

$$r_{11} = (1,053)(0,827)$$

$$r_{11} = 0,870 \text{ (reliabilitasnya tinggi)}$$