

## LAMPIRAN

### Lampiran 1 Lampiran Kuisisioner

Universitas Brawijaya (UB) Malang pada jenjang pendidikan Sarjana Jurusan Teknik Sipil, Konsentrasi Manajemen Konstruksi, dengan mahasiswa:

Nama : Ratri Puspitasari

NIM : 125060100111041

Pada kesempatan ini saya selaku mahasiswa Program Sarjana Teknik Sipil Universitas Brawijaya, bermaksud akan melakukan penelitian mengenai **“Analisis Faktor Penyebab Terjadinya Perubahan Pada Kontrak Lump Sum (Studi Kasus: Proyek Apartment and SOHO Ciputra World)”**.

Penelitian ini bertujuan untuk mengidentifikasi faktor yang menjadi penyebab terjadinya perubahan dalam kontrak pada proyek soho dan apartemen ciputra world.

Penelitian ini diharapkan dapat menjadi sumbangan yang nyata dalam dunia konstruksi. Oleh karena itu kuisisioner ini dirancang sedemikian rupa sehingga membutuhkan peran Bapak/Ibu/Saudara bersedia meluangkan waktunya dalam menjawab pertanyaan-pertanyaan ini.

Semua jawaban yang Bapak/Ibu/Saudara berikan kepada saya, hanya digunakan untuk kepentingan kademis dan akan dijamin kerahasiaannya. Jika ada pertanyaan-pertanyaan yang sekiranya kurang dipahami dalam mengisi kuisisioner ini, jangan segan untuk menghubungi saya.

Atas perhatian dan kerjasama Bapak/Ibu/Saudara, saya ucapkan terima kasih.

Hormat Saya

Ratri Puspitasari



## KUISIONER

### A. DATA RESPONDEN

1. Nama Responden :
2. Jabatan/posisi :
3. Lama Bekerja :
4. Nama Institusi/ Perusahaan :
5. Alamat :

### B. DATA PROYEK

1. Menurut Bapak/Ibu/Saudara, apakah dalam pelaksanaan proyek Pembangunan SOHO dan Apartemen Ciputra World ini terdapat perubahan dalam kontraknya/

- a. Ya
- b. Tidak

2. Dibawah ini merupakan pertanyaan-pertanyaan mengenai faktor penyebab perubahan kontrak pada proyek pembangunan SOHO dan Apartement Ciputra World yang mungkin berpengaruh terhadap adanya perubahan kontrak.

Beri tanda centang (√) pada kolom yang tersedia.

Kolom 1 : Tidak berpengaruh

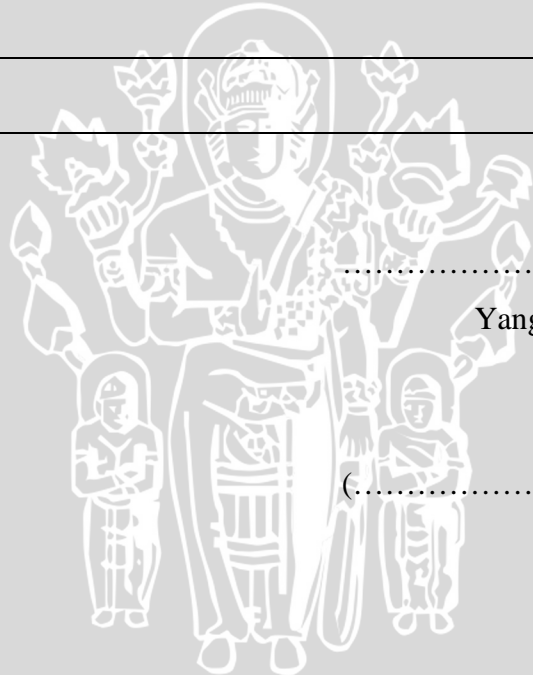
Kolom 2 : Agak berpengaruh

Kolom 3 : Berpengaruh

Kolom 4 : Sangat Berpengaruh

No	Faktor Penyebab	1	2	3	4
1	Perubahan Desain				
2	Perubahan Spesifikasi				
3	Kesalahan Desain				
4	Kurang Informasi Saat Perencanaan				
5	Adanya pekerjaan tambah				
6	Gambar /spesifikasi yang tidak lengkap				
7	Kontrak yang tidak lengkap				
8	Percepatan pekerjaan atas permintaan owner				
9	Penghentian pekerjaan sementara				

10	Perubahan metode kerja				
11	Perubahan Lingkungan Kerja				
12	Cuaca buruk				
13	Kegagalan owner menyediakan sites/material, alat				
14	Kerusakan akibat kelalaian dari pihak ke tiga				



.....Juni 2016  
Yang membuat

(.....)





## Lampiran 2 Rekap Hasil Kuisisioner

No	Faktor Penyebab	Tidak Berpengaruh	Agak Berpengaruh	Berpengaruh	Sangat Berpengaruh	jumlah responden	jumlah nilai
1	Perubahan Desain			2	9	11	42
2	Perubahan Spesifikasi	1		4	6	11	37
3	Perubahan Spesifikasi	1		3	7	11	38
4	Kurang Informasi Saat Perencanaan	1	6	3	1	11	26
5	Adanya pekerjaan tambah			5	6	11	39
6	Gambar /spesifikasi yang tidak lengkap	1	4	3	3	11	30
7	Kontrak yang tidak lengkap	1	2	4	4	11	33
8	Percepatan pekerjaan atas permintaan owner			5	6	11	39
9	Penghentian pekerjaan sementara	6	2	2	1	11	20
10	Perubahan metode kerja	6	1	2	2	11	22
11	Perubahan Lingkungan Kerja	4	5	1	1	11	21
12	Cuaca buruk	7	3		1	11	17
13	Kegagalan owner menyediakan sites/material, alat	5	3	2	1	11	21
14	Kerusakan akibat kelalaian dari pihak ke tiga	1		4	6	11	37

**Tabulasi hasil kuisisioner**

0	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14
Y1	4	4	4	3	4	3	4	3	3	3	3	2	3	3
Y2	4	4	4	2	4	2	2	3	1	1	2	2	1	4
Y3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Y4	4	4	4	2	4	2	1	4	1	1	1	1	1	3
Y5	4	3	3	2	4	4	3	3	3	4	2	1	2	3
Y6	3	1	1	3	4	4	4	3	1	1	2	1	2	1
Y7	4	3	3	2	3	3	4	4	2	2	2	2	1	4
Y8	4	4	4	3	3	3	3	4	1	1	1	1	1	3
Y9	4	3	4	2	3	2	3	4	2	1	2	1	2	4
Y10	4	4	4	2	3	2	2	3	1	1	1	1	3	4
Y11	3	3	3	1	3	1	3	4	1	3	1	1	1	4
	42	37	38	26	39	30	33	39	20	22	21	17	21	37

### Lampiran 3 Hasil SPSS Uji Validitas dan Perhitungan Validitas Secara Manual

- Hasil uji validitas dengan SPSS

Correlations		Total
X1	Pearson Correlation Sig. (2-tailed) N	.469 .146 11
X2	Pearson Correlation Sig. (2-tailed) N	.396 .227 11
X3	Pearson Correlation Sig. (2-tailed) N	.372 .260 11
X4	Pearson Correlation Sig. (2-tailed) N	.675 .023 11
X5	Pearson Correlation Sig. (2-tailed) N	.339 .308 11
X6	Pearson Correlation Sig. (2-tailed) N	.521 .100 11
X7	Pearson Correlation Sig. (2-tailed) N	.483 .132 11
X8	Pearson Correlation Sig. (2-tailed) N	.075 .828 11
X9	Pearson Correlation Sig. (2-tailed) N	.931 .000 11
X10	Pearson Correlation Sig. (2-tailed) N	.699 .017 11
X11	Pearson Correlation Sig. (2-tailed) N	.883 .000 11
X12	Pearson Correlation Sig. (2-tailed) N	.869 .001 11
X13	Pearson Correlation Sig. (2-tailed) N	.732 .010 11
X14	Pearson Correlation Sig. (2-tailed) N	.292 .384 11
Total	Pearson Correlation N	1 11





• **Perhitungan Validitas**

0	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	Y
Y1	4	4	4	3	4	3	4	3	3	3	3	2	3	3	46
Y2	4	4	4	2	4	2	2	3	1	1	2	2	1	4	36
Y3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	56
Y4	4	4	4	2	4	2	1	4	1	1	1	1	1	3	33
Y5	4	3	3	2	4	4	3	3	3	4	2	1	2	3	41
Y6	3	1	1	3	4	4	4	3	1	1	2	1	2	1	31
Y7	4	3	3	2	3	3	4	4	2	2	2	2	1	4	39
Y8	4	4	4	3	3	3	3	4	1	1	1	1	1	3	36
Y9	4	3	4	2	3	2	3	4	2	1	2	1	2	4	37
Y10	4	4	4	2	3	2	2	3	1	1	1	1	3	4	35
Y11	3	3	3	1	3	1	3	4	1	3	1	1	1	4	32

• **Variabel X1**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	4	46	16	2116	184
Y2	4	36	16	1296	144
Y3	4	56	16	3136	224
Y4	4	33	16	1089	132
Y5	4	41	16	1681	164
Y6	3	31	9	961	93
Y7	4	39	16	1521	156
Y8	4	36	16	1296	144
Y9	4	37	16	1369	148
Y10	4	35	16	1225	140
Y11	3	32	9	1024	96
∑	42	422	162	16714	1625

• **Variabel X2**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	4	46	16	2116	184
Y2	4	36	16	1296	144
Y3	4	56	16	3136	224
Y4	4	33	16	1089	132
Y5	3	41	9	1681	123
Y6	1	31	1	961	31
Y7	3	39	9	1521	117
Y8	4	36	16	1296	144
Y9	3	37	9	1369	111
Y10	4	35	16	1225	140
Y11	3	32	9	1024	96
∑	37	422	133	16714	1446

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1625) - (42 \times 422)}{\sqrt{((11 \times 162) - 42^2)((11 \times 16714) - 422^2)}}$$

$$= 0,469$$

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1446) - (37 \times 422)}{\sqrt{((11 \times 133) - 37^2)((11 \times 16714) - 422^2)}}$$

$$= 0,396$$

- **Variabel X3**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	4	46	16	2116	184
Y2	4	36	16	1296	144
Y3	4	56	16	3136	224
Y4	4	33	16	1089	132
Y5	3	41	9	1681	123
Y6	1	31	1	961	31
Y7	3	39	9	1521	117
Y8	4	36	16	1296	144
Y9	4	37	16	1369	148
Y10	4	35	16	1225	140
Y11	3	32	9	1024	96
Σ	38	422	140	16714	1483

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1483) - (38 \times 422)}{\sqrt{((11 \times 140) - 38^2)((11 \times 16714) - 422^2)}}$$

$$= 0,372$$

- **Variabel X4**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	2	36	4	1296	72
Y3	4	56	16	3136	224
Y4	2	33	4	1089	66
Y5	2	41	4	1681	82
Y6	3	31	9	961	93
Y7	2	39	4	1521	78
Y8	3	36	9	1296	108
Y9	2	37	4	1369	74
Y10	2	35	4	1225	70
Y11	1	32	1	1024	32
Σ	26	422	68	16714	1037

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1037) - (26 \times 422)}{\sqrt{((11 \times 68) - 26^2)((11 \times 16714) - 422^2)}}$$

$$= 0,675$$

- **Variabel X5**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	4	46	16	2116	184
Y2	4	36	16	1296	144
Y3	4	56	16	3136	224
Y4	4	33	16	1089	132
Y5	4	41	16	1681	164
Y6	4	31	16	961	124
Y7	3	39	9	1521	117
Y8	3	36	9	1296	108
Y9	3	37	9	1369	111
Y10	3	35	9	1225	105
Y11	3	32	9	1024	96
Σ	39	422	141	16714	1509

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1509) - (39 \times 422)}{\sqrt{((11 \times 141) - 39^2)((11 \times 16714) - 422^2)}}$$

$$= 0,339$$



• **Variabel X6**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	2	36	4	1296	72
Y3	4	56	16	3136	224
Y4	2	33	4	1089	66
Y5	4	41	16	1681	164
Y6	4	31	16	961	124
Y7	3	39	9	1521	117
Y8	3	36	9	1296	108
Y9	2	37	4	1369	74
Y10	2	35	4	1225	70
Y11	1	32	1	1024	32
Σ	30	422	92	16714	1189

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1189) - (30 \times 422)}{\sqrt{((11 \times 92) - 30^2)((11 \times 16714) - 422^2)}}$$

$$= 0,521$$

• **Variabel X7**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	4	46	16	2116	184
Y2	2	36	4	1296	72
Y3	4	56	16	3136	224
Y4	1	33	1	1089	33
Y5	3	41	9	1681	123
Y6	4	31	16	961	124
Y7	4	39	16	1521	156
Y8	3	36	9	1296	108
Y9	3	37	9	1369	111
Y10	2	35	4	1225	70
Y11	3	32	9	1024	96
Σ	33	422	109	16714	1301

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1301) - (33 \times 422)}{\sqrt{((11 \times 109) - 33^2)((11 \times 16714) - 422^2)}}$$

$$= 0,483$$

• **Variabel X8**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	3	36	9	1296	108
Y3	4	56	16	3136	224
Y4	4	33	16	1089	132
Y5	3	41	9	1681	123
Y6	3	31	9	961	93
Y7	4	39	16	1521	156
Y8	4	36	16	1296	144
Y9	4	37	16	1369	148
Y10	3	35	9	1225	105
Y11	4	32	16	1024	128
Σ	39	422	141	16714	1499

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1499) - (39 \times 422)}{\sqrt{((11 \times 141) - 39^2)((11 \times 16714) - 422^2)}}$$

$$= 0,075$$

- **Variabel X9**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	1	36	1	1296	36
Y3	4	56	16	3136	224
Y4	1	33	1	1089	33
Y5	3	41	9	1681	123
Y6	1	31	1	961	31
Y7	2	39	4	1521	78
Y8	1	36	1	1296	36
Y9	2	37	4	1369	74
Y10	1	35	1	1225	35
Y11	1	32	1	1024	32
Σ	20	422	48	16714	840

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(840) - (20 \times 422)}{\sqrt{((11 \times 48) - 20^2)((11 \times 16714) - 422^2)}}$$

$$= 0,931$$

- **Variabel X10**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	1	36	1	1296	36
Y3	4	56	16	3136	224
Y4	1	33	1	1089	33
Y5	4	41	16	1681	164
Y6	1	31	1	961	31
Y7	2	39	4	1521	78
Y8	1	36	1	1296	36
Y9	1	37	1	1369	37
Y10	1	35	1	1225	35
Y11	3	32	9	1024	96
Σ	22	422	60	16714	908

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(908) - (22 \times 422)}{\sqrt{((11 \times 60) - 22^2)((11 \times 16714) - 422^2)}}$$

$$= 0,699$$

- **Variabel X11**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	2	36	4	1296	72
Y3	4	56	16	3136	224
Y4	1	33	1	1089	33
Y5	2	41	4	1681	82
Y6	2	31	4	961	62
Y7	2	39	4	1521	78
Y8	1	36	1	1296	36
Y9	2	37	4	1369	74
Y10	1	35	1	1225	35
Y11	1	32	1	1024	32
Σ	21	422	49	16714	866

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(866) - (21 \times 422)}{\sqrt{((11 \times 49) - 21^2)((11 \times 16714) - 422^2)}}$$

$$= 0,883$$

• **Variabel X12**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	2	46	4	2116	92
Y2	2	36	4	1296	72
Y3	4	56	16	3136	224
Y4	1	33	1	1089	33
Y5	1	41	1	1681	41
Y6	1	31	1	961	31
Y7	2	39	4	1521	78
Y8	1	36	1	1296	36
Y9	1	37	1	1369	37
Y10	1	35	1	1225	35
Y11	1	32	1	1024	32
	17	422	35	16714	711

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(711) - (17 \times 422)}{\sqrt{((11 \times 35) - 17^2)((11 \times 16714) - 422^2)}}$$

$$= 0,869$$

• **Variabel X13**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	1	36	1	1296	36
Y3	4	56	16	3136	224
Y4	1	33	1	1089	33
Y5	2	41	4	1681	82
Y6	2	31	4	961	62
Y7	1	39	1	1521	39
Y8	1	36	1	1296	36
Y9	2	37	4	1369	74
Y10	3	35	9	1225	105
Y11	1	32	1	1024	32
	21	422	51	16714	861

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(861) - (21 \times 422)}{\sqrt{((11 \times 51) - 21^2)((11 \times 16714) - 422^2)}}$$

$$= 0,732$$

• **Variabel X14**

	X	Y	x <sup>2</sup>	y <sup>2</sup>	XY
Y1	3	46	9	2116	138
Y2	4	36	16	1296	144
Y3	4	56	16	3136	224
Y4	3	33	9	1089	99
Y5	3	41	9	1681	123
Y6	1	31	1	961	31
Y7	4	39	16	1521	156
Y8	3	36	9	1296	108
Y9	4	37	16	1369	148
Y10	4	35	16	1225	140
Y11	4	32	16	1024	128
	37	422	133	16714	1439

$$r_{xy} = \frac{n(\sum XY) - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2)(n \sum Y^2 - (\sum Y)^2)}}$$

$$= \frac{11(1439) - (37 \times 422)}{\sqrt{((11 \times 133) - 37^2)((11 \times 16714) - 422^2)}}$$

$$= 0,292$$



#### Lampiran 4 Hasil SPSS Uji Reliabilitas dan Perhitungan Reliabilitas Secara Manual

- Hasil Analisis SPSS

##### Reliability Statistics

Cronbach's Alpha	N of Items
.839	14

- Perhitungan Reliabilitas manual

		Butir Pertanyaan															
		X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14		
Responden	Y1	4	4	4	3	4	3	4	3	3	3	3	2	3	3	46	2116
	Y2	4	4	4	2	4	2	2	3	1	1	2	2	1	4	36	1296
	Y3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	56	3136
	Y4	4	4	4	2	4	2	1	4	1	1	1	1	1	3	33	1089
	Y5	4	3	3	2	4	4	3	3	3	4	2	1	2	3	41	1681
	Y6	3	1	1	3	4	4	4	3	1	1	2	1	2	1	31	961
	Y7	4	3	3	2	3	3	4	4	2	2	2	2	1	4	39	1521
	Y8	4	4	4	3	3	3	3	4	1	1	1	1	1	3	36	1296
	Y9	4	3	4	2	3	2	3	4	2	1	2	1	2	4	37	1369
	Y10	4	4	4	2	3	2	2	3	1	1	1	1	3	4	35	1225
	Y11	3	3	3	1	3	1	3	4	1	3	1	1	1	4	32	1024
x		42	37	38	26	39	30	33	39	20	22	21	17	21	37	422	16714
x <sup>2</sup>		162	133	140	68	141	92	109	141	48	60	49	35	51	133	st <sup>2</sup>	47.68595
s <sup>2</sup>		0.15	0.78	0.79	0.6	0.25	0.93	0.91	0.25	1.06	1.45	0.81	0.79	0.99	0.78		10.5289

### Nilai Varian Butir Instrumen

$$S_i^2 = \frac{\sum X_i^2 - \frac{(\sum X_i)^2}{n}}{n}$$

$$S_1^2 = \frac{162 - \frac{42^2}{11}}{11} = 0,15$$

$$S_2^2 = \frac{133 - \frac{37^2}{11}}{11} = 0,78$$

$$S_3^2 = \frac{140 - \frac{38^2}{11}}{11} = 0,70$$

$$S_4^2 = \frac{68 - \frac{26^2}{11}}{11} = 0,6$$

$$S_5^2 = \frac{141 - \frac{39^2}{11}}{11} = 0,25$$

$$S_6^2 = \frac{92 - \frac{30^2}{11}}{11} = 0,93$$

$$S_7^2 = \frac{109 - \frac{33^2}{11}}{11} = 0,91$$

$$S_8^2 = \frac{141 - \frac{39^2}{11}}{11} = 0,25$$

$$S_9^2 = \frac{48 - \frac{20^2}{11}}{11} = 1,06$$

$$S_{10}^2 = \frac{60 - \frac{22^2}{11}}{11} = 1,45$$

$$S_{11}^2 = \frac{49 - \frac{21^2}{11}}{11} = 0,81$$

$$S_{12}^2 = \frac{35 - \frac{17^2}{11}}{11} = 0,79$$

$$S_{13}^2 = \frac{51 - \frac{21^2}{11}}{11} = 0,99$$

$$S_{14}^2 = \frac{133 - \frac{37^2}{11}}{11} = 0,78$$

Jumlah nilai varian butir instrument

$$\sum S_i^2 = 10,5289$$

Nilai Total Varian Butir Instrumen

$$S_t^2 = \frac{\sum X_t^2 - \frac{(\sum X_t)^2}{n}}{n}$$

$$S_t^2 = \frac{16714 - \frac{422^2}{11}}{11} = 47.68595$$

Uji reliabilitas

$$r_{11} = \left[ \frac{k}{k-1} \right] \left[ 1 - \frac{\sum S_i^2}{S_t^2} \right]$$

$$= \left[ \frac{14}{14-1} \right] \left[ 1 - \frac{10,5289}{47.68595} \right]$$

$$= 0,839$$



## Lampiran 5 Hasil SPSS Uji Korelasi dan Perhitungan Korelasi Secara Manual

- Hasil Uji Korelasi dengan SPSS

		Correlations				
		X1	X2	X3	X5	X7
X1	Pearson Correlation	1	.729*	.770**	.043	-.247
	Sig. (2-tailed)		.011	.006	.900	.464
	N	11	11	11	11	11
X2	Pearson Correlation	.729*	1	.947**	-.038	-.433
	Sig. (2-tailed)	.011		.000	.912	.184
	N	11	11	11	11	11
X3	Pearson Correlation	.770**	.947**	1	-.149	-.428
	Sig. (2-tailed)	.006	.000		.662	.189
	N	11	11	11	11	11
X5	Pearson Correlation	.043	-.038	-.149	1	.000
	Sig. (2-tailed)	.900	.912	.662		1.000
	N	11	11	11	11	11
X7	Pearson Correlation	-.247	-.433	-.428	.000	1
	Sig. (2-tailed)	.464	.184	.189	1.000	
	N	11	11	11	11	11

\*. Correlation is significant at the 0.05 level (2-tailed).

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





- **Perhitungan Korelasi Manual**

Persamaan Korelasi Pearson:

$$r = \frac{(n \sum_{i=1}^n X_i Y_i) - (\sum_{i=1}^n X_i)(\sum_{i=1}^n Y_i)}{\sqrt{n \cdot \sum_{i=1}^n X_i^2 - (\sum_{i=1}^n X_i)^2} \sqrt{n \cdot \sum_{i=1}^n Y_i^2 - (\sum_{i=1}^n Y_i)^2}}$$

- Variabel X1-X2

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	4	16	16	16
Y3	4	4	16	16	16
Y4	4	4	16	16	16
Y5	4	3	16	9	12
Y6	3	1	9	1	3
Y7	4	3	16	9	12
Y8	4	4	16	16	16
Y9	4	3	16	9	12
Y10	4	4	16	16	16
Y11	3	3	9	9	9
	42	37	162	133	144

Dengan: X=X1, Y=X2

$$r = \frac{(11 \times 144) - (42)(37)}{\sqrt{((11 \cdot 162) - (42)^2)} \sqrt{((11 \cdot 133) - (37)^2)}}$$

$$r = \frac{1584 - 1554}{\sqrt{18} \sqrt{94}}$$

$$r = 0,7293$$

- Variabel X1-X3

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	4	16	16	16
Y3	4	4	16	16	16
Y4	4	4	16	16	16
Y5	4	3	16	9	12
Y6	3	1	9	1	3
Y7	4	3	16	9	12
Y8	4	4	16	16	16
Y9	4	4	16	16	16
Y10	4	4	16	16	16
Y11	3	3	9	9	9
	42	38	162	140	148

Dengan: X=X1, Y=X3

$$r = \frac{(11 \times 148) - (42)(38)}{\sqrt{((11 \cdot 162) - (42)^2)} \sqrt{((11 \cdot 140) - (38)^2)}}$$

$$r = \frac{1628 - 1596}{\sqrt{18} \sqrt{96}}$$

$$r = 0,7698$$

- Variabel X1-X5

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	4	16	16	16
Y3	4	4	16	16	16
Y4	4	4	16	16	16
Y5	4	4	16	16	16
Y6	3	4	9	16	12
Y7	4	3	16	9	12
Y8	4	3	16	9	12
Y9	4	3	16	9	12
Y10	4	3	16	9	12
Y11	3	3	9	9	9
	42	39	162	141	149

Dengan: X=X1, Y=X5

$$r = \frac{(11 \times 149) - (42)(39)}{\sqrt{((11 \cdot 162) - (42)^2)} \sqrt{((11 \cdot 141) - (39)^2)}}$$

$$r = \frac{1639 - 1638}{\sqrt{18}\sqrt{30}}$$

$$r = 0,043$$

- Variabel X1-X7

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	2	16	4	8
Y3	4	4	16	16	16
Y4	4	1	16	1	4
Y5	4	3	16	9	12
Y6	3	4	9	16	12
Y7	4	4	16	16	16
Y8	4	3	16	9	12
Y9	4	3	16	9	12
Y10	4	2	16	4	8
Y11	3	3	9	9	9
	42	33	162	109	125

Dengan: X=X1, Y=X7

$$r = \frac{(11 \times 125) - (42)(33)}{\sqrt{((11 \cdot 162) - (42)^2)} \sqrt{((11 \cdot 109) - (33)^2)}}$$

$$r = \frac{1375 - 1386}{\sqrt{18}\sqrt{110}}$$

$$r = -0,2472$$

- Variabel X2-X3

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	4	16	16	16
Y3	4	4	16	16	16
Y4	4	4	16	16	16
Y5	3	3	9	9	9
Y6	1	1	1	1	1
Y7	3	3	9	9	9
Y8	4	4	16	16	16
Y9	3	4	9	16	12
Y10	4	4	16	16	16
Y11	3	3	9	9	9
	37	38	133	140	136

Dengan: X=X2, Y=X3



$$r = \frac{(11 \times 136) - (37)(38)}{\sqrt{((11 \cdot 133) - (37)^2)}\sqrt{((11 \cdot 140) - (38)^2)}}$$

$$r = \frac{1496 - 1406}{\sqrt{94}\sqrt{96}}$$

$$r = 0,9474$$

- Variabel X2-X5

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	4	16	16	16
Y3	4	4	16	16	16
Y4	4	4	16	16	16
Y5	3	4	9	16	12
Y6	1	4	1	16	4
Y7	3	3	9	9	9
Y8	4	3	16	9	12
Y9	3	3	9	9	9
Y10	4	3	16	9	12
Y11	3	3	9	9	9
	37	39	133	141	131

Dengan: X=X2, Y=X5

$$r = \frac{(11 \times 131) - (37)(39)}{\sqrt{((11 \cdot 133) - (37)^2)}\sqrt{((11 \cdot 141) - (39)^2)}}$$

$$r = \frac{1441 - 1443}{\sqrt{94}\sqrt{30}}$$

$$r = -0,037$$

- Variabel X2-X7

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	2	16	4	8
Y3	4	4	16	16	16
Y4	4	1	16	1	4
Y5	3	3	9	9	9
Y6	1	4	1	16	4
Y7	3	4	9	16	12
Y8	4	3	16	9	12
Y9	3	3	9	9	9
Y10	4	2	16	4	8
Y11	3	3	9	9	9
	37	33	133	109	107

Dengan: X=X2, Y=X7

$$r = \frac{(11 \times 107) - (37)(33)}{\sqrt{((11 \cdot 133) - (37)^2)} \sqrt{((11 \cdot 109) - (33)^2)}}$$

$$r = \frac{1177 - 1221}{\sqrt{94} \sqrt{110}}$$

$$r = -0,4327$$

- Variabel X3-X7

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	4	16	16	16
Y3	4	4	16	16	16
Y4	4	4	16	16	16
Y5	3	4	9	16	12
Y6	1	4	1	16	4
Y7	3	3	9	9	9
Y8	4	3	16	9	12
Y9	4	3	16	9	12
Y10	4	3	16	9	12
Y11	3	3	9	9	9
	38	39	140	141	134

Dengan: X=X3, Y=X5

$$r = \frac{(11 \times 134) - (38)(39)}{\sqrt{((11 \cdot 140) - (38)^2)} \sqrt{((11 \cdot 141) - (39)^2)}}$$

$$r = \frac{1474 - 1485}{\sqrt{96}\sqrt{30}}$$

$$r = -0,149$$

- Variabel X3-X7

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	2	16	4	8
Y3	4	4	16	16	16
Y4	4	1	16	1	4
Y5	3	3	9	9	9
Y6	1	4	1	16	4
Y7	3	4	9	16	12
Y8	4	3	16	9	12
Y9	4	3	16	9	12
Y10	4	2	16	4	8
Y11	3	3	9	9	9
	38	33	140	109	110

Dengan: X=X3, Y=X7

$$r = \frac{(11 \times 110) - (38)(33)}{\sqrt{((11 \cdot 140) - (38)^2)}\sqrt{((11 \cdot 109) - (33)^2)}}$$

$$r = \frac{1210 - 1254}{\sqrt{96}\sqrt{110}}$$

$$r = -0,4282$$

- Variabel X5-X7

	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X.Y
Y1	4	4	16	16	16
Y2	4	2	16	4	8
Y3	4	4	16	16	16
Y4	4	1	16	1	4
Y5	4	3	16	9	12
Y6	4	4	16	16	16
Y7	3	4	9	16	12
Y8	3	3	9	9	9
Y9	3	3	9	9	9
Y10	3	2	9	4	6
Y11	3	3	9	9	9
	39	33	141	109	117



Dengan:  $X=X5$ ,  $Y=X7$

$$r = \frac{(11 \times 117) - (39)(33)}{\sqrt{((11 \cdot 141) - (39)^2)}\sqrt{((11 \cdot 109) - (33)^2)}}$$
$$r = \frac{1287 - 1287}{\sqrt{30}\sqrt{110}}$$
$$r = 0,000$$



## Lampiran 6 Hasil SPSS Analisis Faktor

### Tahap 1:

Nilai KMO

#### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.640
Bartlett's Test of Sphericity	Approx. Chi-Square
	df
	Sig.
	27.185
	10
	.002

### Anti Image Correlation

#### Anti-image Matrices

		X1	X2	X3	X5	X7
Anti-image Covariance	X1	.369	.014	-.071	-.149	-.087
	X2	.014	.090	-.071	-.089	.016
	X3	-.071	-.071	.072	.103	.032
	X5	-.149	-.089	.103	.806	.068
	X7	-.087	.016	.032	.068	.787
Anti-image Correlation	X1	.798 <sup>a</sup>	.078	-.439	-.274	-.161
	X2	.078	.645 <sup>a</sup>	-.878	-.331	.061
	X3	-.439	-.878	.592 <sup>a</sup>	.428	.137
	X5	-.274	-.331	.428	.064 <sup>a</sup>	.085
	X7	-.161	.061	.137	.085	.886 <sup>a</sup>

a. Measures of Sampling Adequacy(MSA)

### Tahap 2

Nilai KMO-MSA

#### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.726
Bartlett's Test of Sphericity	Approx. Chi-Square
	df
	Sig.
	26.704
	6
	.000

### Anti Image Korelasi

#### Anti-image Matrices

		X1	X2	X3	X7
Anti-image Covariance	X1	.399	-.003	-.069	-.081
	X2	-.003	.101	-.082	.027
	X3	-.069	-.082	.088	.029
	X7	-.081	.027	.029	.793
Anti-image Correlation	X1	.883 <sup>a</sup>	-.014	-.370	-.143
	X2	-.014	.682 <sup>a</sup>	-.864	.094
	X3	-.370	-.864	.651 <sup>a</sup>	.111
	X7	-.143	.094	.111	.912 <sup>a</sup>

a. Measures of Sampling Adequacy(MSA)

### Communalities

#### Communalities

	Initial	Extraction
X1	1.000	.716
X2	1.000	.906
X3	1.000	.928
X7	1.000	.309

Extraction Method: Principal Component Analysis.

### Total Variance Explained

#### Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.859	71.487	71.487	2.859	71.487	71.487
2	.804	20.101	91.588			
3	.286	7.155	98.743			
4	.050	1.257	100.000			

Extraction Method: Principal Component Analysis.



## Component matrix

Component Matrix<sup>a</sup>

	Component
	1
X1	.846
X2	.952
X3	.963
X7	-.556

Extraction Method:  
Principal  
Component  
Analysis.

a. 1  
components  
extracted.

## Gambar Scree plot

