

Data Table:

	# of Confederates				
	1	2	3	4	5
	0	0	3	4	8
	1	2	4	4	9
	0	1	3	5	7
	1	2	2	6	6
	1	0	4	5	8
$\Sigma Y$	3	5	16	24	38
$\Sigma Y^2$	3	9	54	48	294
$\bar{Y}$	.6	1	3.2	4.8	7.6

$$[T] = 86^2/25 = 295.84$$

$$[A] = (3^2 + 5^2 + 16^2 + 24^2 + 38^2)/5 = 462$$

$$[Y] = 478$$

	Source	df	SS	MS	F	Table F
$H_0: \mu = 0$ $H_A: \mu \neq 0$	Mean	1	$[T] = 295.84$	295.84	369.8	$(1,20) = 4.35$
$H_0: \alpha_j = 0$ for all j $H_A: \alpha_j \neq 0$ for some j	A	$(a-1)=4$	$[A] - [T] = 166.16$	41.54	51.925	$(4,20) = 2.8$
	S/A	$a(n-1)=20$	$[Y] - [A] = 16$	.8		
	Total	$a_n = 25$	$[Y] = 478$			

Does compliance increase as number of confederates increases??

Test linear trend:

Coefficients: -2 -1 0 1 2

$$\hat{\psi}_{\text{linear}} = 17.8 \quad SS_{\text{linear}} = 158.42$$

$$F_{\text{linear}} = 198.025 \quad (\text{compare to } F(1, 20) = 4.35)$$

$H_0: \psi = 0$  is rejected

Test Residual:

$$SS_{\text{residual}} = 166.16 - 158.42 = 7.74$$

$$F_{\text{residual}} = 9.675 \text{ (compare to } F(1, 20) = 4.85)$$

Significant, so . . .

Test Quadratic:

$$\hat{\Psi}_{\text{quad}} = 4.2 \quad SS_{\text{quad}} = 6.3$$

$$F_{\text{quad}} = 7.88 \text{ (compare to } F(1, 20) = 4.35)$$

$H_0: \psi = 0$  is rejected

Test Residual

$$SS_{\text{residual}} = 7.74 - 6.3 = 1.44$$

$$F_{\text{residual}} = 1.8 \text{ (compare to } F(1, 20) = 4.35)$$

n.s., so stop trend analysis

How much variance does each trend account for?

Linear:  $158.42/166.16 = 95\%$

Quadratic:  $6.3/166.16 = 3.8\%$

Which increases in number of confederates matter?

Planned comparison: critical  $\bar{d} = 1.18$

$$\text{Fisher-Hayter: } \bar{d} = \frac{3.96 \sqrt{2(8)}}{\sqrt{5}} = 2.24$$

	1	2	3	4	5
1	--	.4	2.6	4.2	7.0
2		--	2.2	3.8	6.6
3			--	1.6	4.4
4				--	2.8
5					--

From the table of mean differences at the left, we can see that all pairs of means differ significantly except 1 vs. 2, 2 vs. 3, and 3 vs. 4 confederates.