2. Results of Rapid Injection of 5-FU for Treatment of Advanced Carcinoma of the Large Bowel

Group	# of Patients	% P_i	$\frac{P_i(1-P_i)}{n_i-1}$	$(P_i-\bar{P})^2$
1	15	65	0.01625	0.1296
2	50	45	0.00505	0.0256
3	20	36	0.01213	0.0049
4	38	31	0.00578	0.0004
5	130	25	0.00145	0.0016
6	250	15	0.00051	0.0196
7	40	10	0.00231	0.0361
8	18	5	0.00279	0.0576
sum	561	-	0.04627	0.2754

Please calculate the variation within samples

$$E\left\{\frac{\pi_i(1-\pi_i)}{n_i}\right\} = \frac{\sum_{i=1}^{n}\frac{P_i(1-P_i)}{n_i-1}}{N} = \frac{0.04627}{8} = 0.00578$$

variation among study to study, and summarize your conclusion.

$\bar{P} = 0.29 \qquad N = 8$

$$S_p^2 = \frac{\sum_{i=1}^{n}(p_i-\bar{p})^2}{N-1} = \frac{0.2754}{7} = 0.03934$$

$$\hat{\sigma}_\pi^2 = S_p^2 - E\left\{\frac{\pi_i(1-\pi_i)}{n_i}\right\} = 0.03934 - 0.00578 = 0.03356$$

conclusion:

The data is not good. because the major part is from σ_π^2 (study to study)