

Table 8.1, Expected values and standard errors of some common estimators

(Dennis D. Wackerly, William Mendenhall III, and Richard L. Schaeffer (2002). [\*Mathematical Statistics with Applications, 6th Edition\*](#). Duxbury Advanced Series.)

Target parameter $\theta$	Sample size(s)	Point estimator $\hat{\theta}$	$E(\hat{\theta})$	Standard Error $\sigma_{\hat{\theta}}$
$\mu$	$n$	$\bar{Y}$	$\mu$	$\frac{\sigma}{\sqrt{n}}$
$p$	$n$	$\hat{p} = \frac{Y}{n}$	$p$	$\sqrt{\frac{p(1-p)}{n}}$
$\mu_1 - \mu_2$	$n_1$ and $n_2$	$\bar{Y}_1 - \bar{Y}_2$	$\mu_1 - \mu_2$	$\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}^{\dagger*}$
$p_1 - p_2$	$n_1$ and $n_2$	$\hat{p}_1 - \hat{p}_2$	$p_1 - p_2$	$\sqrt{\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}}^{\dagger}$

\*  $\sigma_1^2$  and  $\sigma_2^2$  are the variances of population 1 and 2, respectively.

<sup>†</sup> The two samples are assumed to be independent.