

Table 6.3 Distribution of Wilks' Lambda, $\Lambda^* = |\mathbf{W}|/|\mathbf{B} + \mathbf{W}|$

No. of variables	No. of groups	Sampling distribution for multivariate normal data
$p = 1$	$g \geq 2$	$\left(\frac{\sum n_{\ell} - g}{g - 1} \right) \left(\frac{1 - \Lambda^*}{\Lambda^*} \right) \sim F_{g-1, \sum n_{\ell} - g}$
$p = 2$	$g \geq 2$	$\left(\frac{\sum n_{\ell} - g - 1}{g - 1} \right) \left(\frac{1 - \sqrt{\Lambda^*}}{\sqrt{\Lambda^*}} \right) \sim F_{2(g-1), 2(\sum n_{\ell} - g - 1)}$
$p \geq 1$	$g = 2$	$\left(\frac{\sum n_{\ell} - p - 1}{p} \right) \left(\frac{1 - \Lambda^*}{\Lambda^*} \right) \sim F_{p, \sum n_{\ell} - p - 1}$
$p \geq 1$	$g = 3$	$\left(\frac{\sum n_{\ell} - p - 2}{p} \right) \left(\frac{1 - \sqrt{\Lambda^*}}{\sqrt{\Lambda^*}} \right) \sim F_{2p, 2(\sum n_{\ell} - p - 2)}$