§8.1

1、设电阻值为 $X(\Omega)$，则 $X\sim N(2.64, 0.06^2)$，样本容量 $n=36$，均值 $\bar{x}=2.61$，$\alpha=0.01$

假设 $H_0:\mu=\mu_0=2.64$，$H_1:\mu\neq\mu_0$.

$\frac{\bar{x}-\mu}{\sigma/\sqrt{n}}\sim N(0,1)$

H_0 的拒绝域：$\left\{\frac{|\bar{x}-\mu_0|}{\sigma/\sqrt{n}}>u_{1-\frac{\alpha}{2}}\right\}$

$\because \frac{|\bar{x}-\mu_0|}{\sigma/\sqrt{n}}\approx 3 > u_{1-\frac{\alpha}{2}}=2.575$

$\therefore$ 拒绝 H_0

$\therefore$ 有显著性影响.

2. $X\sim N(\mu,\sigma^2)$，$\sigma=40$，$n=9$，$\bar{x}=\mu+20$，$\alpha=0.01$

假设 $H_0:\mu\leq\mu_0$，$H_1:\mu>\mu_0$.

$\because \frac{\bar{x}-\mu}{\sigma/\sqrt{n}}\sim N(0,1)$

$\therefore H_0$ 的拒绝域为 $\left\{\frac{|\bar{x}-\mu_0|}{\sigma/\sqrt{n}}>u_{1-\frac{\alpha}{2}}\right\}$

$\because \frac{|\bar{x}-\mu_0|}{\sigma/\sqrt{n}}\approx 1.5 < u_{1-\frac{\alpha}{2}}=2.575$

$\therefore$ 接受 H_0

$\therefore$ 无显著提高.

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