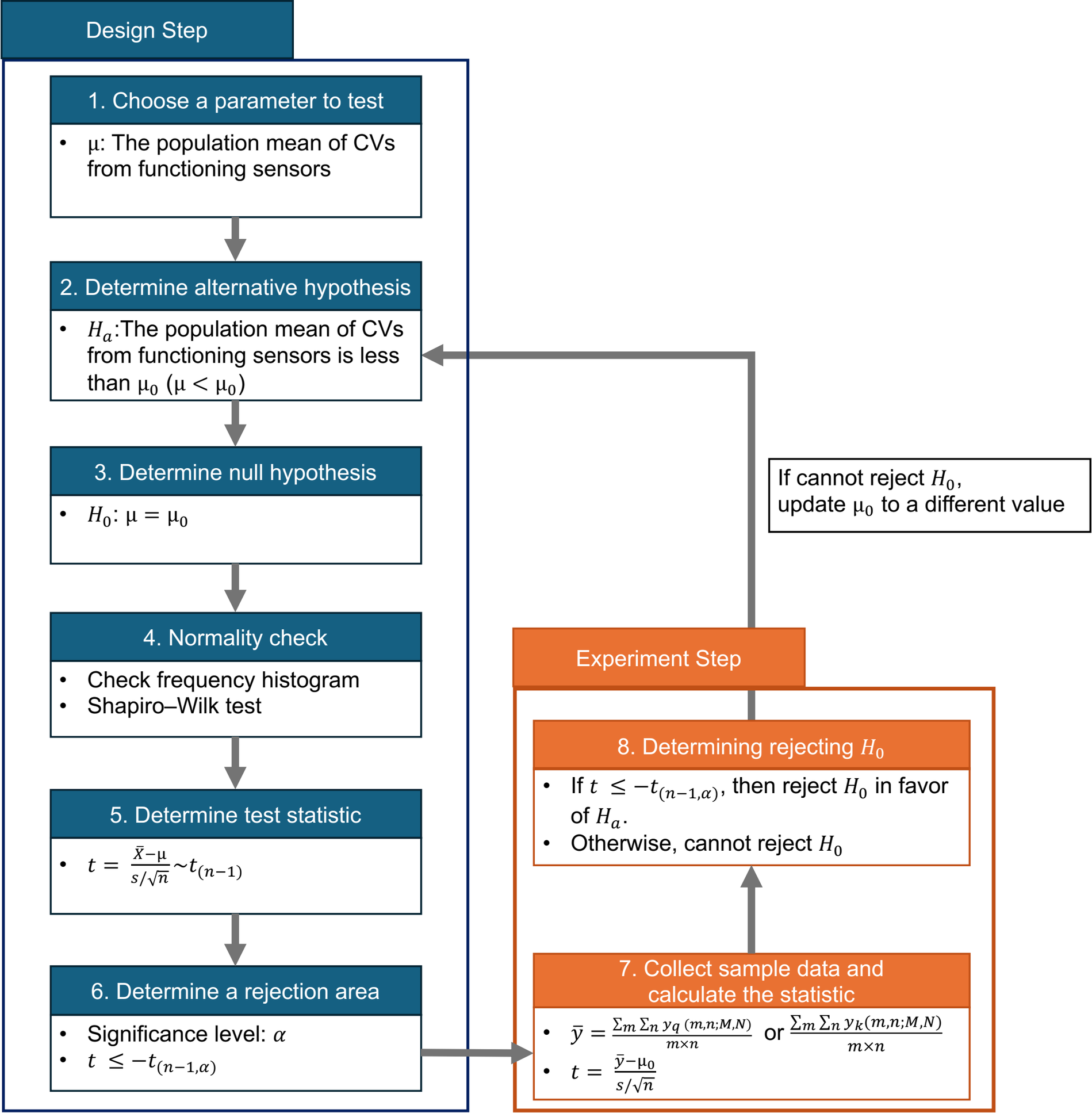
Design Step
1. Choose a parameter to test
• μ: The population mean of CVs from functioning sensors
2. Determine alternative hypothesis
• H_a:The population mean of CVs from functioning sensors is less than μ_0 ($\mu < \mu_0$)
3. Determine null hypothesis
• H_0: $\mu = \mu_0$
4. Normality check
• Check frequency histogram
• Shapiro–Wilk test
5. Determine test statistic
• $t = \frac{\bar{X}-\mu}{s/\sqrt{n}} \sim t_{(n-1)}$
6. Determine a rejection area
• Significance level: α
• $t \leq -t_{(n-1,\alpha)}$
If cannot reject H_0, update μ_0 to a different value
Experiment Step
8. Determining rejecting H_0
• If $t \leq -t_{(n-1,\alpha)}$, then reject H_0 in favor of H_a.
• Otherwise, cannot reject H_0
7. Collect sample data and calculate the statistic
• $\bar{y} = \frac{\sum_m \sum_n y_{q\,(m,n;M,N)}}{m \times n}$ or $\frac{\sum_m \sum_n y_{k(m,n;M,N)}}{m \times n}$
• $t = \frac{\bar{y}-\mu_0}{s/\sqrt{n}}$