

Performance of Wilcoxon Signed Rank

ST551 Lecture 14

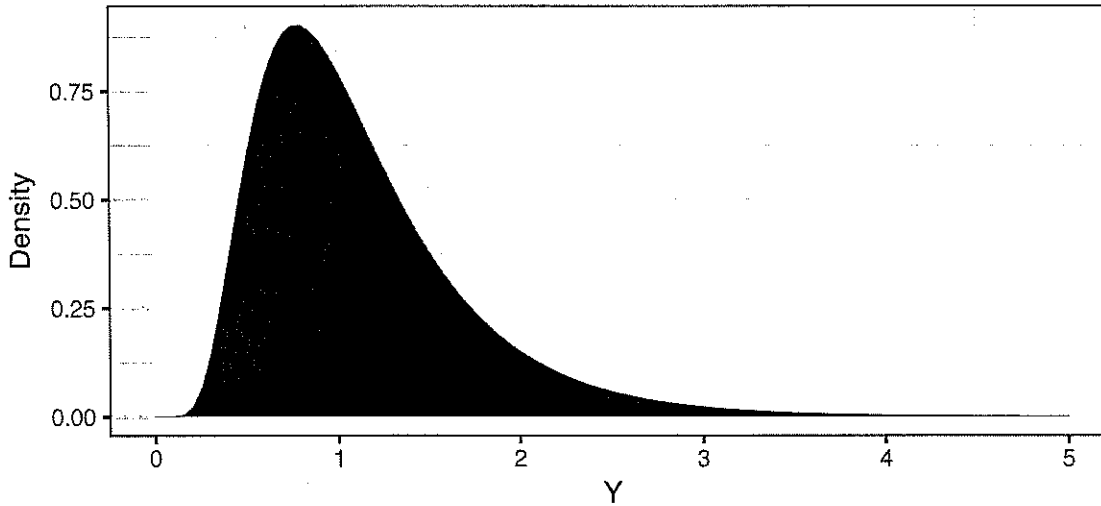
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What we would like to see ^{me}

Imagine we have a population that is Log Normal(0, 0.25).

Population Distribution

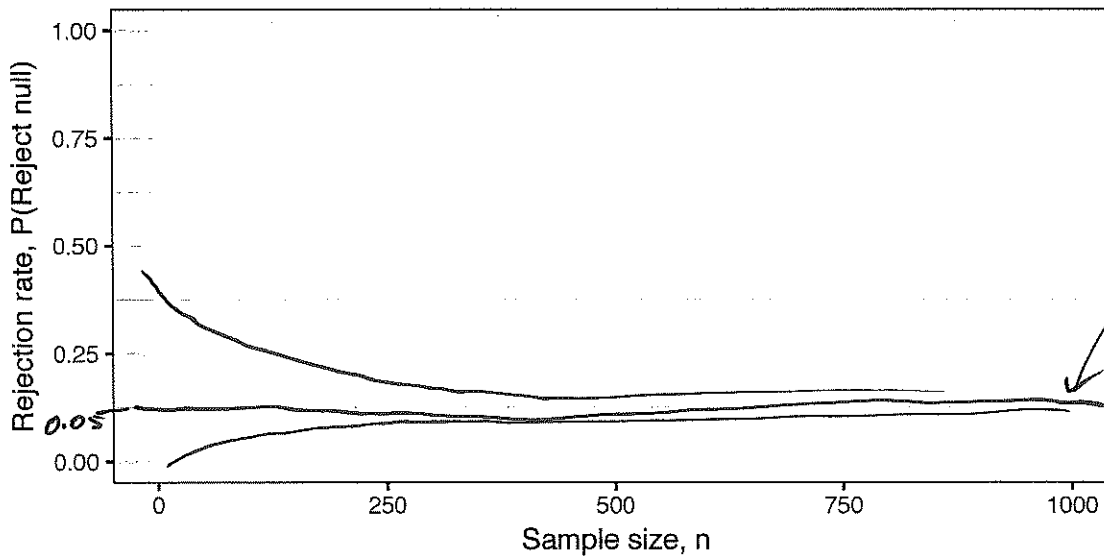


This population has mean, $\mu = \exp(0.125)$ and median, $M = 1$.

→ TRUE

Q1: Consider the null hypothesis $H_0 : \mu = \exp(0.125)$, where μ is the population mean.

Use the template below to sketch the relationship between the rejection rate, for level $\alpha = 0.05$, and sample size you would expect if the Wilcoxon Signed Rank test was a good test of the population mean.



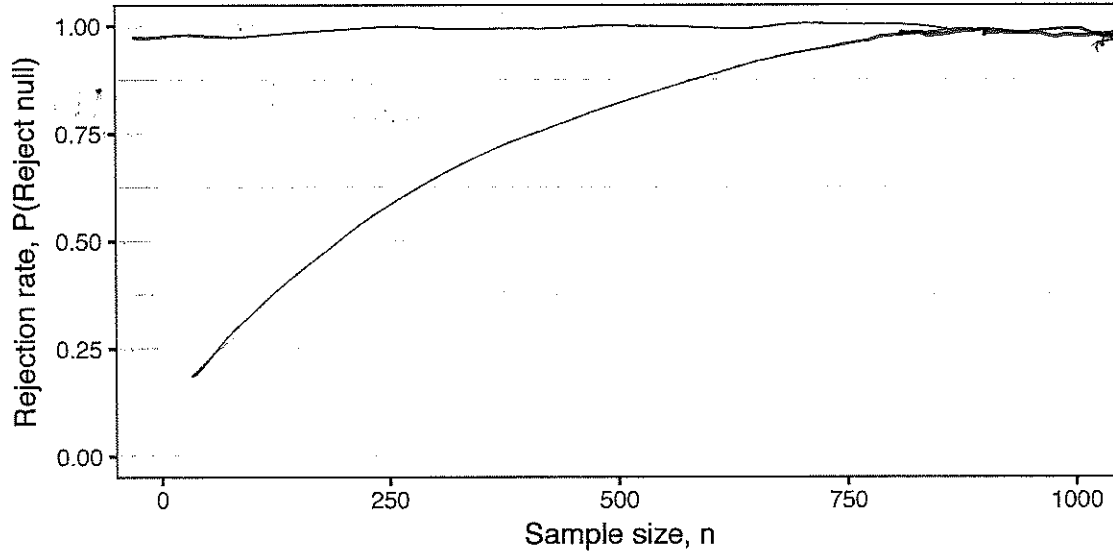
Finite exact

Exactness

FALSE

Q2: Consider the null hypothesis $H_0 : \mu = \exp(0.0625)$, where μ is the population mean.

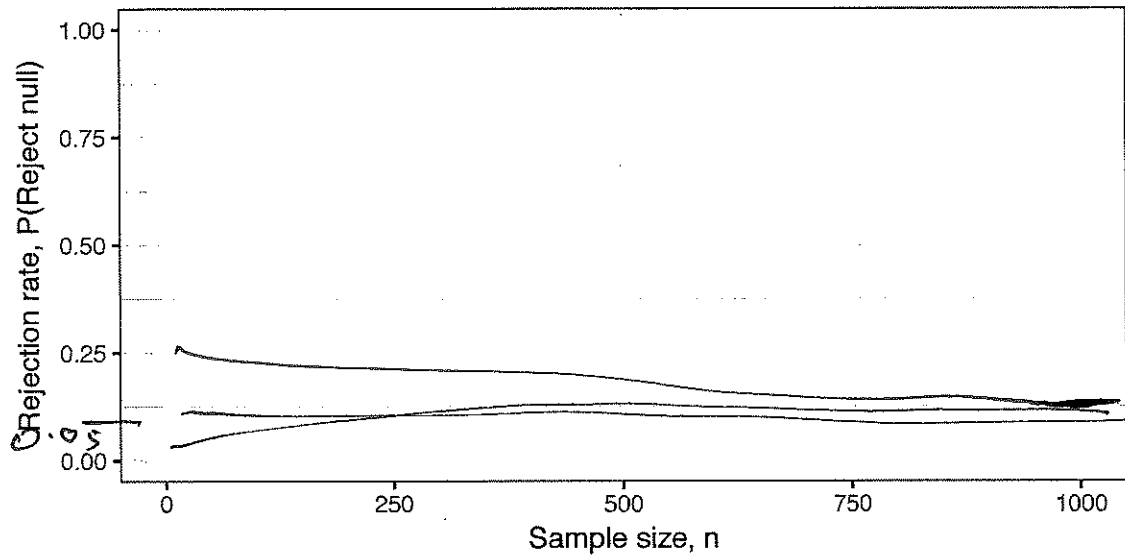
Use the template below to sketch the relationship between the rejection rate, for level $\alpha = 0.05$, and sample size you would expect if the Wilcoxon Signed Rank test was a good test of the population **mean**.



consistency
power $\rightarrow 1$

Q3: Consider the null hypothesis $H_0 : M = 1$ where M is the population median.

Use the template below to sketch the relationship between the rejection rate, for level $\alpha = 0.05$, and sample size you would expect if the Wilcoxon Signed Rank test was a good test of the population **median**.



Q4: Consider the null hypothesis $H_0: M = 1.06$, where M is the population median.

Use the template below to sketch the relationship between the rejection rate, for level $\alpha = 0.05$, and sample size you would expect if the Wilcoxon Signed Rank test was a *good* test of the population median.

