Using Morey's SEV app for P values with the ex. On p. 144

Link to app* (see last slide)

https://richarddmorey.shinyapps.io/severity/?mu0=150&mu1=150&sigma=10&n=100&xbar=151&xmin=146&xmax=156&alpha=0.025&dir=%3E

H_0: μ ≤ 150 vs. H_1: μ > 150 (Let σ = 10, ***n* = 100**)

let significance level α = .025

M is the sample mean, its value is M_0.

1SE = σ/√25 = *10/5 = 2*

Click on the "sampling distribution" of the app, and under "display option", choose P-value.

Let M_0 = 150 (it doesn't matter what you put in the alternative box of the app for purposes of the p-value). The p-value = .5.

SEVERITY DEMONSTRATION

Source Code

Data details

Sample mean: 150

Sample size: 100

Population σ: 10

Test options

Null μ: 150

Alternative μ: 150

Direction: >

α level: 0.025

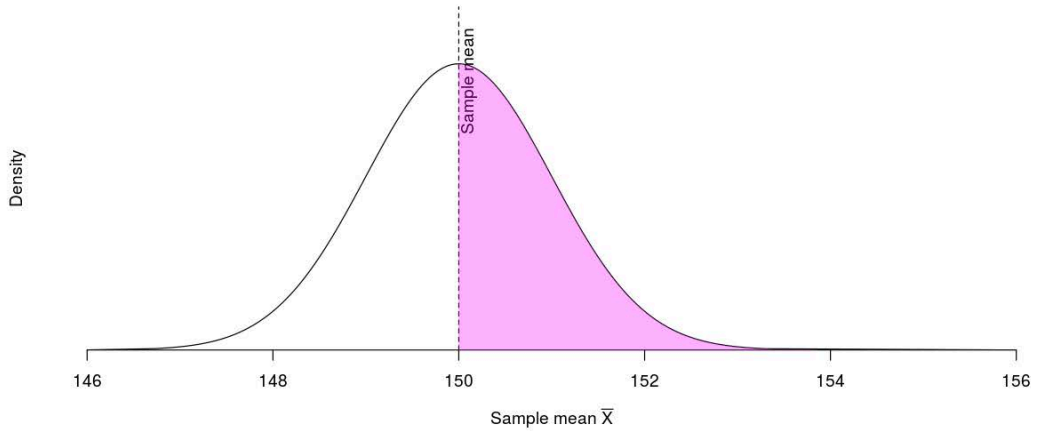
Display options

Demonstration of...: p value

x axis min.: 146

x axis max.: 156

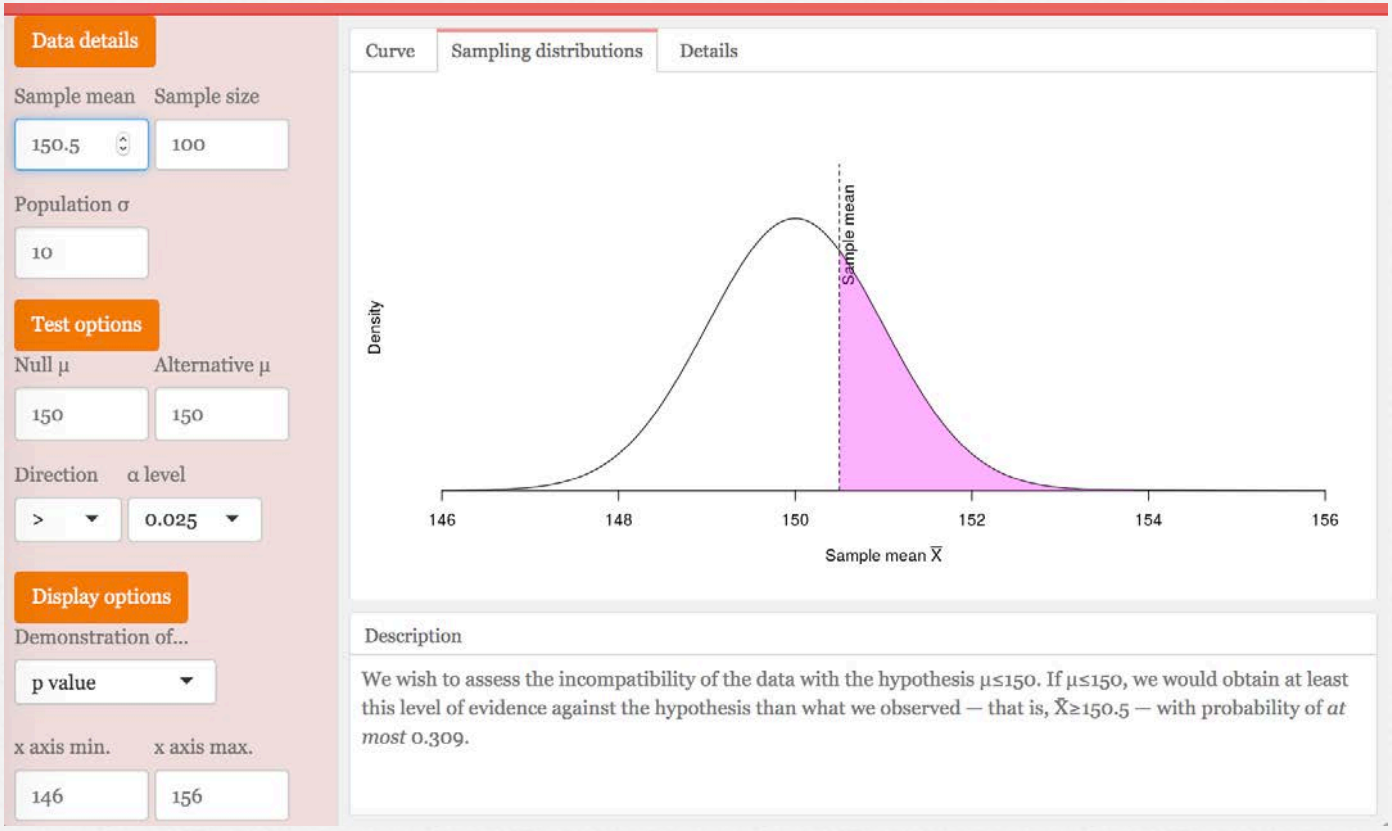
Curve | Sampling distributions | Details



Description

We wish to assess the incompatibility of the data with the hypothesis μ≤150. If μ≤150, we would obtain at least this level of evidence against the hypothesis than what we observed — that is, $\bar{X}$≥150 — with probability of *at most* 0.5.

With M_0 = 150.5, the P-value is .3.



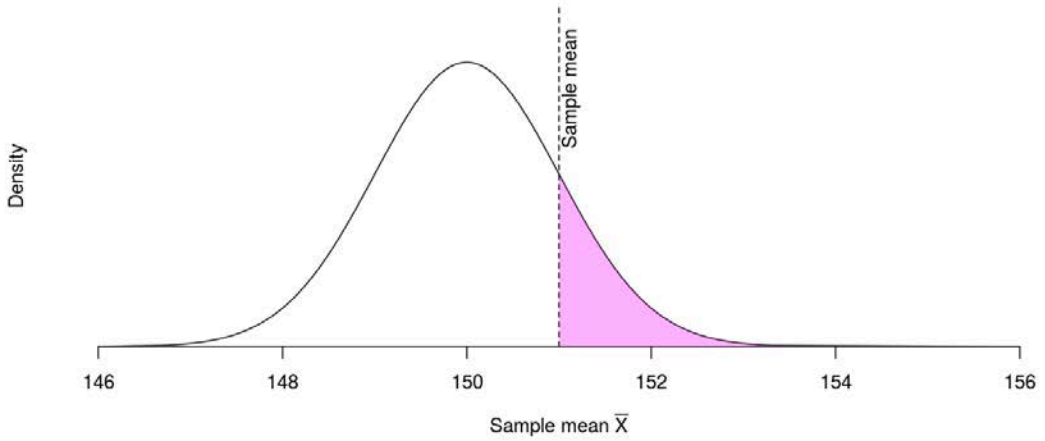
With M_0 = 151, the P-value is .16.

Sample mean: 151
Sample size: 100
Population σ: 10

Test options
Null μ: 150
Alternative μ: 150
Direction: >
α level: 0.025

Display options
Demonstration of...: p value
x axis min.: 146
x axis max.: 156

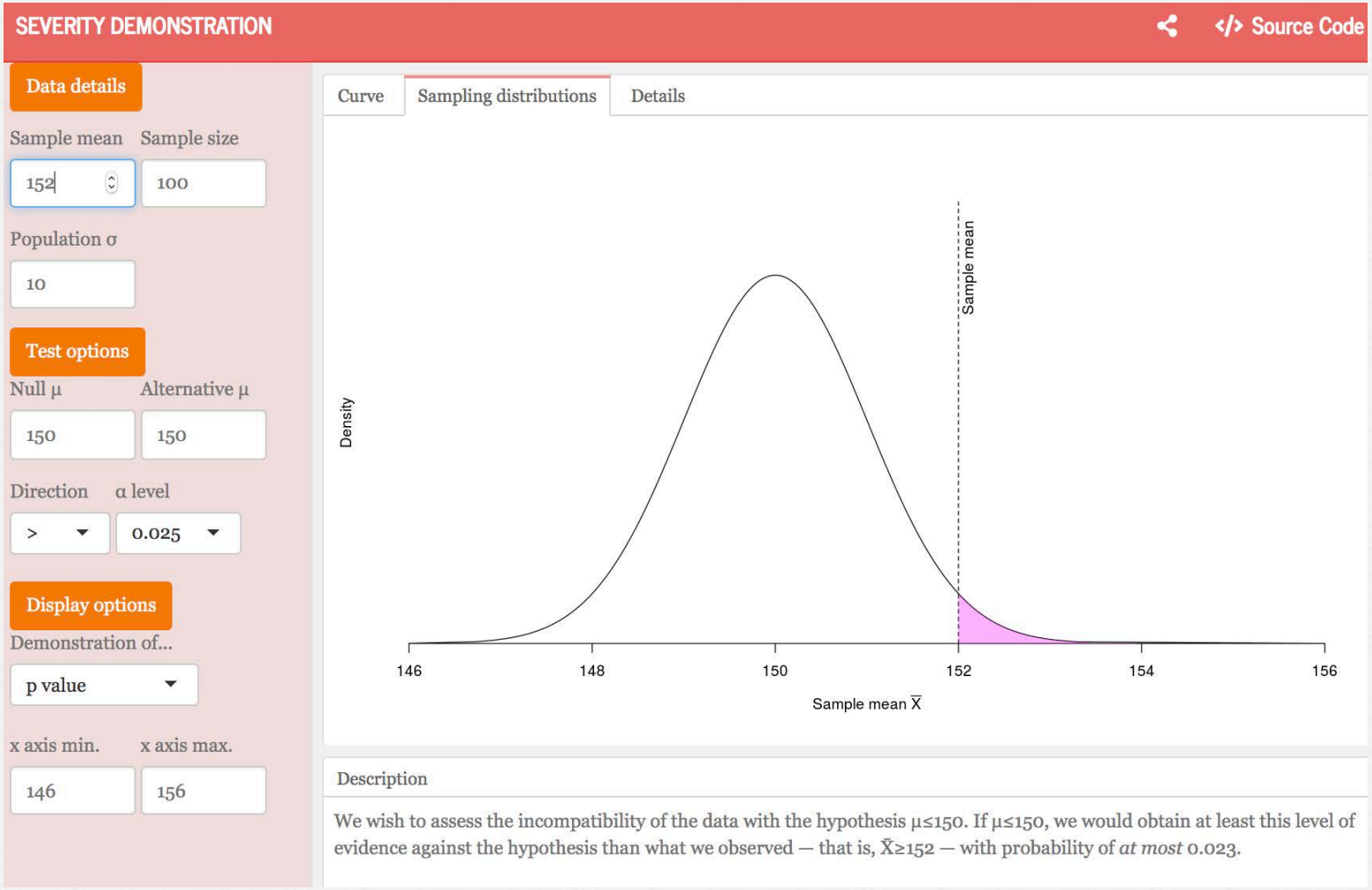
Curve | Sampling distributions | Details



Description

We wish to assess the incompatibility of the data with the hypothesis μ≤150. If μ≤150, we would obtain at least this level of evidence against the hypothesis than what we observed — that is, $\bar{X} \geq 151$ — with probability of *at most* 0.159.

With M_0 = 152, the P-value is .025.



Note that by changing the specifications of the test, you can change the default for the link to that example. The “details” tab gives you the link.