

# R Shiny Based Mobile Tools To Aid Regulatory Decisions And Program Evaluation

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## Abstract:

Current practice calls for the use of SOPs, manuals, and other pre-calculated information that tends to generalize problem/article/program parameters in order to fit the problems/articles/programs into a common bin. In this work I present a dynamic concept that would allow the decision maker to calculate the risk/public health impact of the decision with parameters derived from the actual specific problem/article/program that the decision maker is trying to solve, analyze or evaluate.

## Subject matter:

I am presenting two separate tools, 1) a Economically Optimized Sampling Calculator that takes into account the cost of sampling, probability of correctly identifying violative article, and residual public health cost of mitigation of adverse events possibly precipitated by an adulterated article reaching the market, and 2) a Point Estimate Density Calculator that allows one to assess in audit, recall audit check and such, how well does sampled documentation or commodity represent the bulk of unsampled documentation/commodity.

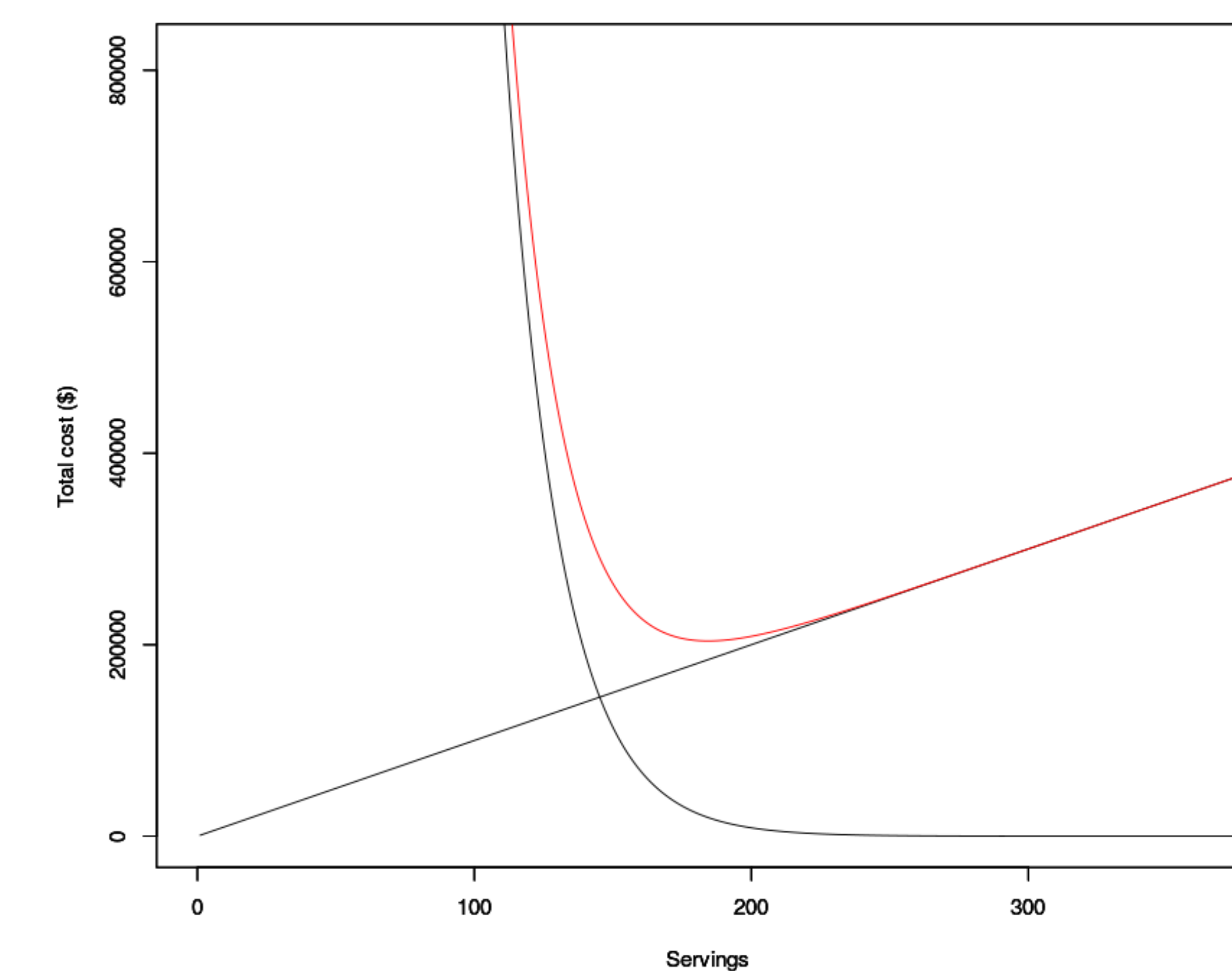
## Method:

I used the R programming platform and Shiny package, this allows the decision makers to perform guided interactive calculations in any internet browser on their computer or phone.

## Economically Optimized Sampling Calculator

### Sampling calculator

Economically optimized sampling strategy: 184 servings. Sampling cost: \$ 184000 . Public health impact: \$ 19911 . Public health impact if no sampling performed: \$ 250,000,000

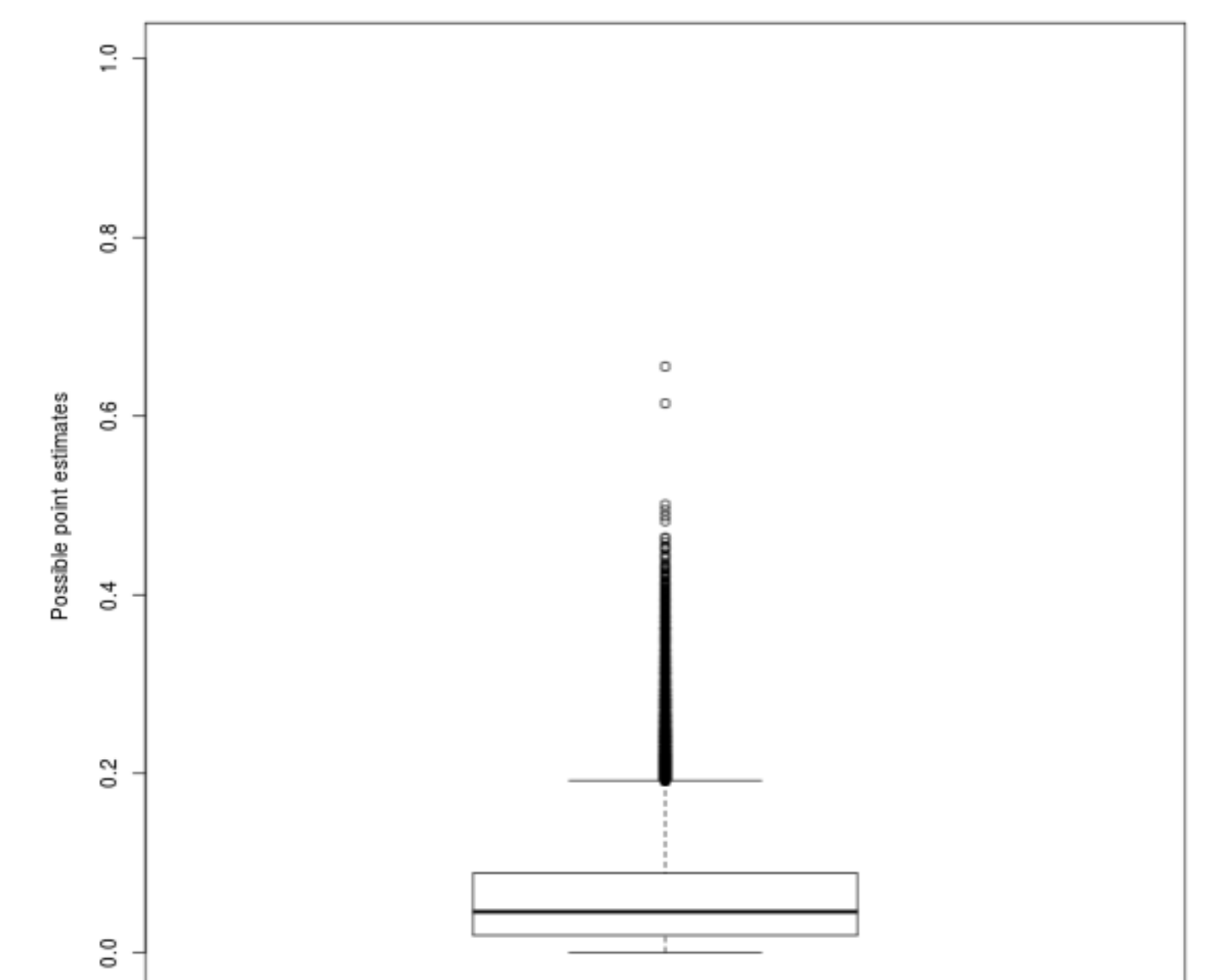
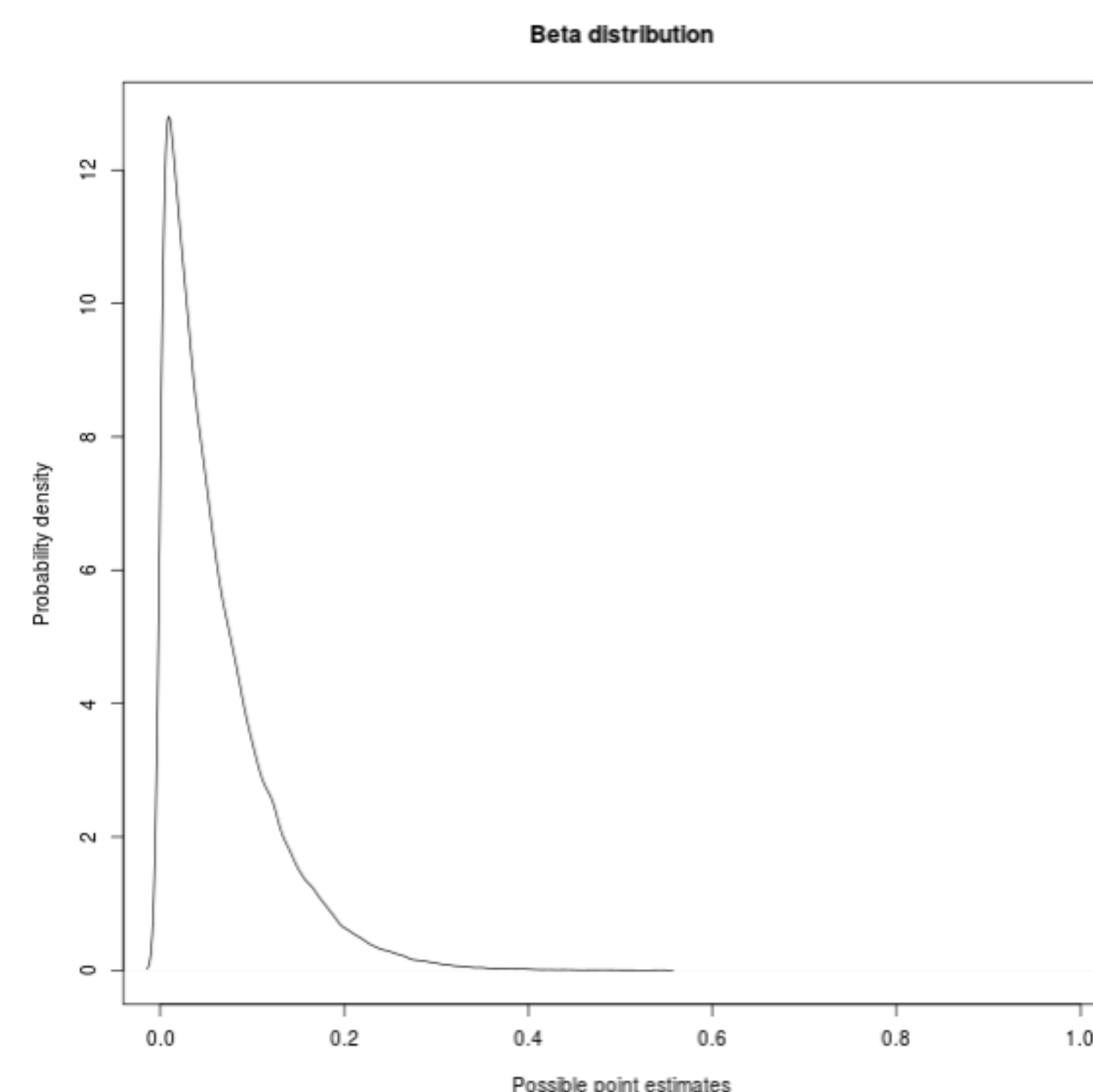


## Point Estimate Probability Density Calculator

### Distribution of Point Estimates

95% confidence range for point estimates: 0.002 to 0.218

density boxplot



## Live links:

[https://tomasdrgon.shinyapps.io/Sampling\\_economy/](https://tomasdrgon.shinyapps.io/Sampling_economy/)

[https://tomasdrgon.shinyapps.io/point\\_estimate\\_distribution\\_with\\_confidence\\_interval/](https://tomasdrgon.shinyapps.io/point_estimate_distribution_with_confidence_interval/)