Prior to completing this discussion forum, read the Sampling Distributions and the Bootstrap Download Sampling Distributions and the Bootstraparticle. Respond to the following prompt by Day 4 of the learning week. Cite resources and references appropriately in APA format.

Discuss the differences between a parametric and a non-parametric bootstrap, as discussed in the Sampling Distributions and the Bootstrap article you read this week. Provide real-world examples of when and how you would use each method.

Post a thoughtful, substantive response to at least one of your classmates by Day 7. You are encouraged to post your required replie(s) early in the week to promote more meaningful and interactive discourse in this discussion forum.

To understand how your posts will be assessed, view the scoring rubric.

Click Reply below to respond to the discussion prompt.

When conducting experiments, it is important to always be aware of your sampling and your data that you are using, where you got it from, and the reliability of the data. When considering the replicability of the study on thing that is critical is understanding the difference between parametric, and non-parametric bootstrap.

Parametric bootstrap is when you are using the sample to estimate the parameters that are then used to then create the possibility of getting more samples (Kulesa et al., 2015). With that being said, if you have a limited amount of samples, Parametric bootstrap might be beneficial to you because you are able to produce values that are not inside of you data set already. This strategy can help produce more data for training a Machine learning model to get a more accurate during the training by feeding it more derived data.

Non-parametric bootstrap on the other hand is when the surveyer takes the approximate population and samples randomly with replacement values to get more data. (Kulesa et al., 2015) Non-parametric is limited to creating only within the distribution, and can’t generate some of the outliers our models could and would see.

Parametric bootstrap is useful when creating a model that needs to have or include some outliers, as the data in that model will have and contain a wider range of data. But when building a model that has no need for a wide range, one should consider non-parametric as it will deliver more data within the curve.

References

Kulesa, A., Krzywinski, M., Blainey, P., &amp; Altman, N. (2015). Sampling distributions and the bootstrap. Nature Methods, 12(6), 477–478. https://doi.org/10.1038/nmeth.3414