A Study on the Apparent Randomness of a Wildlife Sample

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Sampling is used to estimate characteristics of the population when we are unable to investigate the population as a whole. In an ideal world a sample would be a perfectly scaled-down version of the original population in the sense that every characteristic of the population would be matched in the sample [1]. Although this ideal is almost impossible to meet, researchers aim to get as close to this as possible. Even though wildlife researchers are aware of the advantages of random sampling, these methods are usually not implemented. In practice, most samples are convenience samples [2, 3] so the selection probabilities of the elements cannot be described, making it impossible to derive statistically valid estimators and their errors. This talk will assess the impact of taking a convenience sample by making use of cattle livestock data. We aim to provide measures of how the quality of the sample, in other words the randomness or nonrandomness of the sample, affects statistical analysis. We aim to show that a convenience sample obtained in this setting will yield less reliable results than a probability sample. We would like to add a measure attached to a convenience statistical analysis in order to make a comparison with the unknown statistical analysis attached to a true random sample.

References

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