Birth Weights of African Elephants Born in Captivity

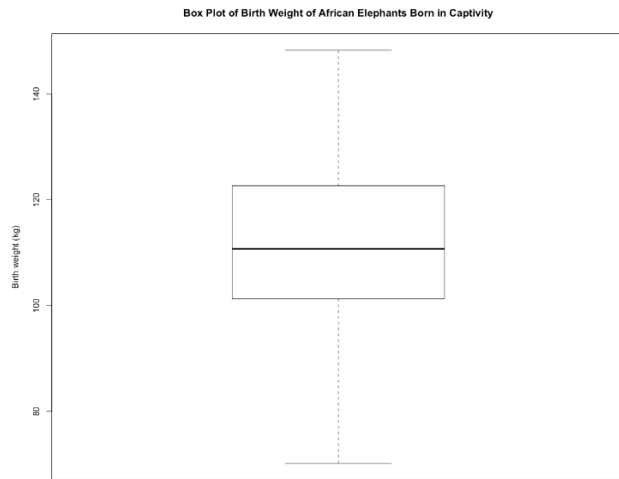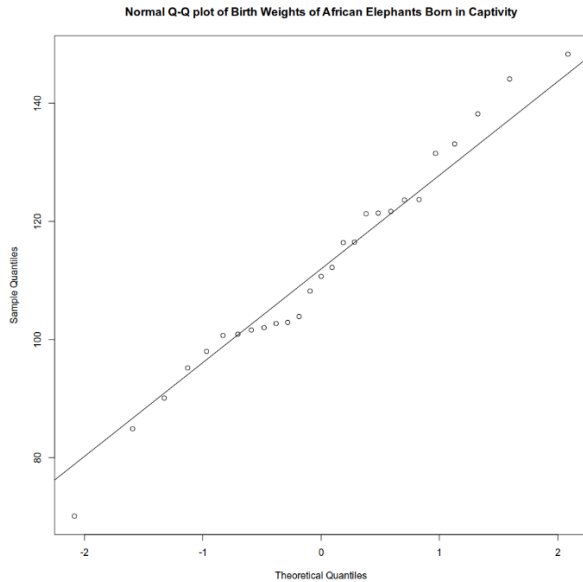Normal Q-Q plot of Birth Weights of African Elephants Born in Captivity

Box Plot of Birth Weight of African Elephants Born in Captivity

Comment on Normality

Based on Normal Quantile-Quantile plot the normality assumption required by the t procedure does not seem to be violated. Besides an outlier near the bottom, there aren't any values that seem to stray too far away from the line.

Confidence interval interpretation

The 95% confidence interval for the Birth Weight of African Elephants Born in Captivity is (104.8026, 119.1900). As such, we can be 95% confident that the true mean Birth Weight of all African Elephants born in captivity is between 104.8026 kg and 119.1900 kg.

One Sample t-test

data: birthWeights$Weight

t = 32.002, df = 26, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

 104.8026 119.1900

sample estimates:

mean of x

 111.9963

Hypothesis test

There is no interesting hypothesis test that can be performed with just the data provided. Almost all interesting hypothesis tests would involve comparing these elephants to another group of elephants, say, elephants that were not born in captivity. But, we were not provided data for another group of elephants to compare to this group.

Comments on sampling methodology

The author of this study collected pre-existing data from organizations that have Elephants under their care. The author does not say what the sampling method was of each of these institutions. But he does state that they're "accredited by the relevant national or international associations of zoos and aquariums". Given that they're accredited I'm going to assume that they made a good faith effort not to introduce bias to their sampling method (I'm guessing they just weighed every Elephant born under their care). Given that assumption, I think unlikely that our sample is significantly biased.