

Student 5: Low Achieved
NZQA Intended for teacher use only

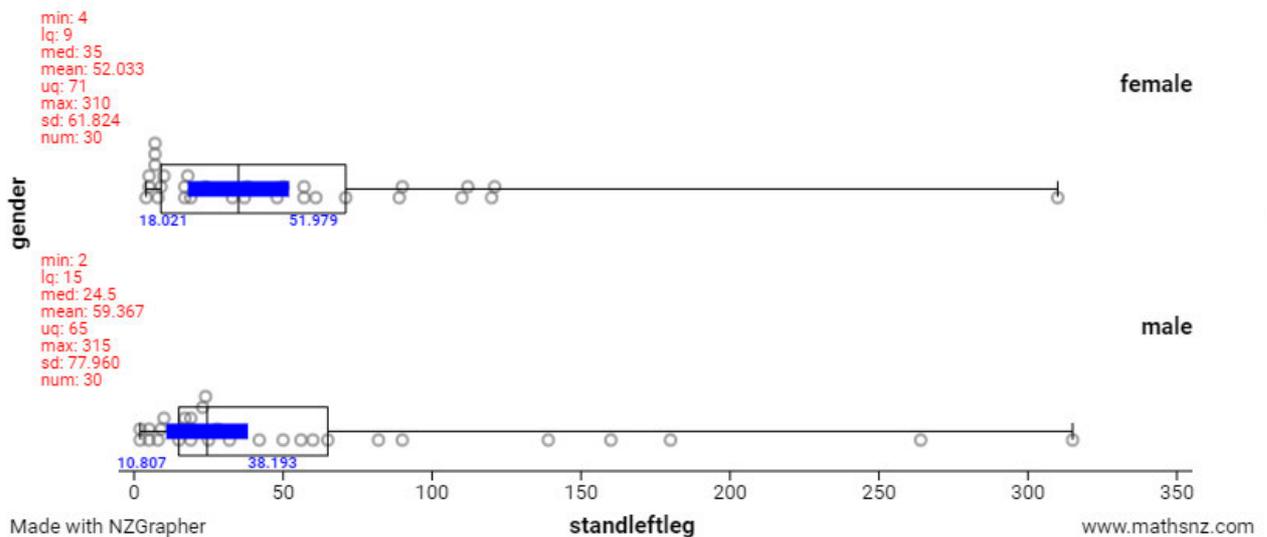
I wonder if male's can stand on their left leg longer than females in the dataset from the 2017 Census at school database. I think that male's can stand longer because they tend to have a more muscular build, meaning their legs are stronger. I will use the median time (seconds) to make an inference to see how long male's and female's can stand on their left leg in the dataset from the 2017 Census at school database.

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I will use simple random sampling to select 30 male and 30 female.

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Standing on left leg comparison



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From the graph above I notice that the sample median for female's is 35 seconds which is larger than the males of 24.5 seconds. This means females generally tend to stand longer on their left leg rather than male's in the 2017 Census at school database.

I notice that the middle 50% of data (IQR) for females is (71-9) 62 seconds which is larger than the middle 50 % of data (IQR) for males which is (65-15) 50 seconds. This means there is more variability within the sample of females.

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I also notice that the shape of the females data is skew and the shape of the males data is symmetrical with outliers.

If I did another sample my statistics would be different. This means the median and confidence intervals would also be different. However the population median would most likely still fall within the confidence intervals. Although if I took a larger sample the interval would have less variability and the confidence interval would be smaller.

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From my statistics gathered I am reasonably confident that from the dataset from the 2017 Census at school database the median for females standing on their left leg lies between 18.021 seconds and 51.979 seconds and I am reasonably confident that from the dataset from the 2017 Census at school database between 10.807 seconds and 38.193 seconds is the time for males.

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In conclusion from the results gathered the confidence intervals overlap therefore I cannot say that male can stand on their left leg longer than females in the dataset from the 2017 Census at school database.

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