The Titanic

RMS Titanic was a British passenger liner that sank in the North Atlantic Ocean in the early morning hours of 15 April 1912, after it collided with an iceberg during its maiden voyage from Southampton to New York City. From my research I know that there were an estimated 2,224 passengers and crew aboard the ship, and more than 1,500 died, making it one of the deadliest commercial peacetime maritime disasters in modern history. The RMS Titanic was the largest ship afloat at the time it entered service and was the second of three Olympic-class ocean liners operated by the White Star Line. If there were differences in survival rates because of the median fair being paid by passengers it could give us rough indications as to whether or not passengers had more or less access to emergency exits. I have read that some passengers who paid more has better access to emergency survival avenues i.e. emergency exit boats in relation to the median fair they paid to board the ship.

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Question

Therefore I wonder what the difference is between the median fare of passengers, who survived and those who did not survive the Titanic disaster in 1912. I think that those who paid more would have been more likely to survive. I will use a random sample of 200 people that were on the titanic when it sank in 1912. The Numerical Variable is the fare measured in British Pounds. The Categorical Variable is the survivors and non-survivors that were on the Titanic when it sank in 1912.

Analysis

Survivor and Non Survivors fares

min: 0
lq: 7.885
med: 12.18
mean: 22.219
uq: 26
max: 263
sd: 33.552
num: 132

No

min: 7.23
lq: 13.68
med: 26.55
mean: 41.173
uq: 52.825
max: 262.38
sd: 45.964
num: 68

Yes

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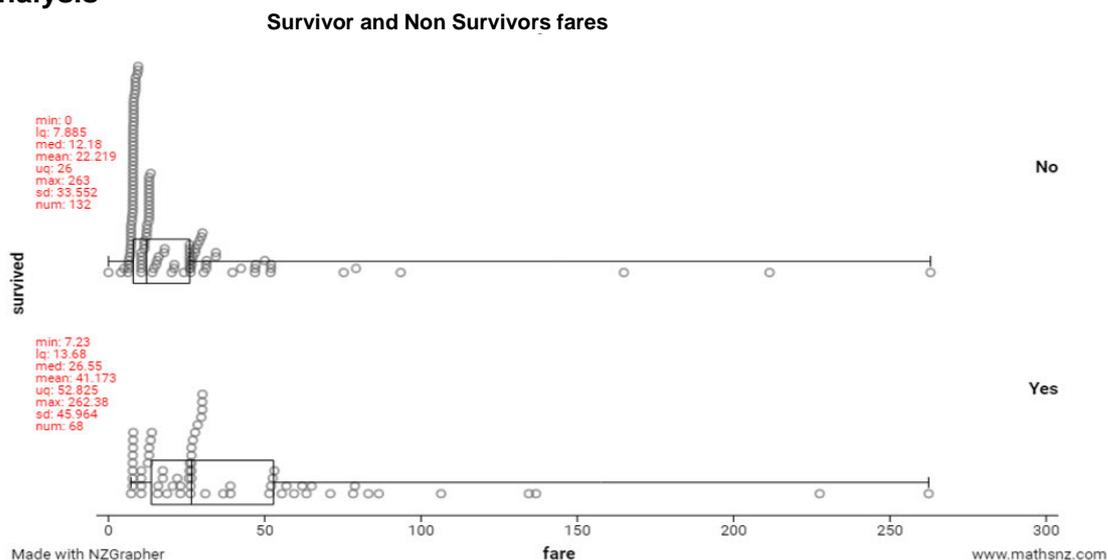
The survivors median fare is 14.37(BP) higher than the non-survivors. This is to be expected as those passengers paying more could be paying extra for easier access to emergency survival avenues i.e. emergency exit boats as stated above therefore to increased survival probability.The middle 50% of the fares for survivors are between 13.7 and 52.9 (BP) whereas the middle 50% of the fares for non-survivors is from 7.9 to 26 (BP).

Shift I Overlap

The median fare of the survivors is higher than the Upper quartile for the non-survivors. There is an overlap where the Upper quartile, median and lower quartile fares are all higher for the survivors compared with the non-survivors. The difference between the medians is 14.37(BP) which is 0.645 (BP) of the overall spread which is a significant difference.

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Shape The fares for both survivors and non-survivors appear to be skewed to the right however non survivors fares seem to have a bimodal shape having two peaks whereas the survivors fares are clearly unimodal (one peak)

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Spread

The interquartile range for the survivors is 39.14 (BP)(whereas the interquartile range for the non-survivors is 18.11 (BP) indicating that the survivors have more variation in their fares than the non-survivors. The standard deviation is also higher for the survivors. Overall visually the middle 50% of data for survivors seem to be more spread out than the non-survivors. The above statements are to be expected as evidence within them indicates that larger amounts of money paid per fair means increased probability of survival to those individuals. This suggests survivors paid higher fares.

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Special Features

Looking at the graphs I can see many unusual findings but the most interesting is that the top fare paying passenger was a non survivor paying 270(BP). A close second was survivor paying a fare of 262.38(BP). This is interesting yet unusual as these readings disagree with the previous assumptions i have made about fairs and survival rates.

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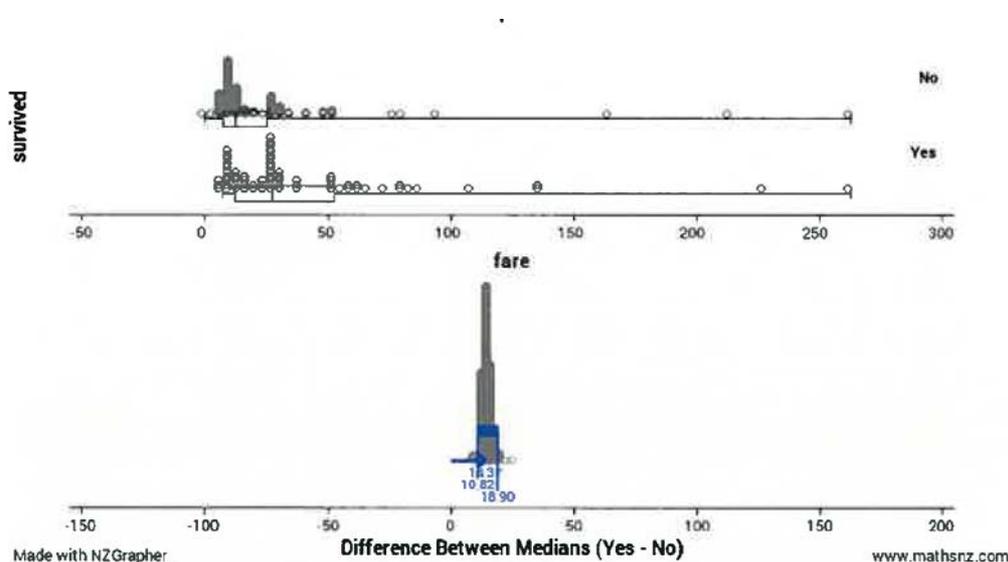
Inference

From the bootstrapping confidence interval it is fairly safe bet that survivors median fare will be between 10.82(BP) and 18.9 BP) more than the non-survivors median fare on the Titanic in 1912.

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Conclusion

I am fairly sure that back in the population of all passengers boarding the Titanic in 1912 that survivors median fare will be more than non-survivors median fare. I can make this call as the confidence interval says that survivors median fare is likely to between 10:82 and 18.9(BP) more than non-survivors median fare and the entire confidence interval is Positive. I can also confidently say that there is a difference between the fare price and the survival rates of those passengers who boarded the Titanic. I am basing this conclusion on the bootstrap confidence interval that I calculated and via careful analyzation of my findings. This involves resampling from my original sample of 200 people who were on board. If I were to take another sample, the results may be different as that sample will contain a different makeup of passengers on the ship, but I would expect that there would be a difference between the median fares where the median would be higher for the survivors

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1. **References -** https://www._g_oo_gle.eo.nz/search?q=titanic+wikipedia&rlz=1 C1 GGRV enN2751NZ751 &og=titanic+wikip&ags=chrome.1.69i57i015.12023j0i7 &sourceid=chrome &ie=UTF-8