A Tale of Survivability through Key Passenger Attributes

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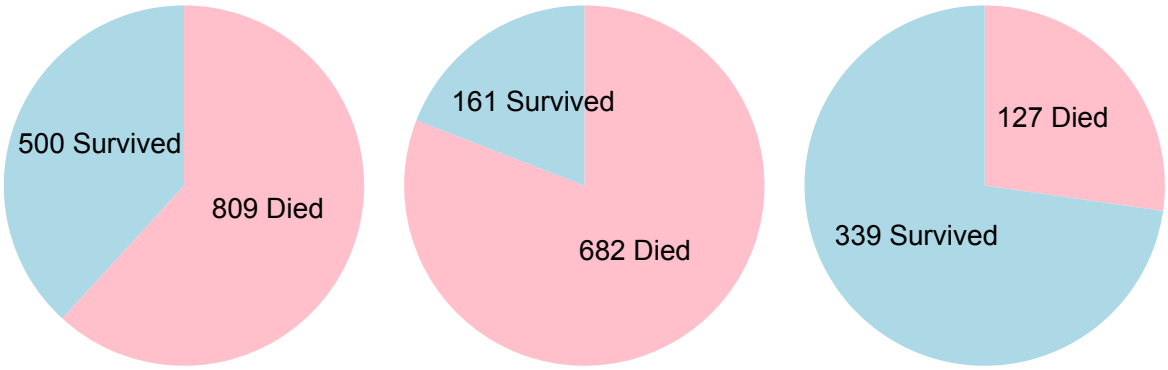
In April of 1912, the Titanic left on its maiden voyage with 2,224 passengers (approx. 915 of which were crew). The Titanic, the largest vessel at the time, left England on a voyage to New York City. Just four days after leaving port, the Titanic hit an iceberg at 11:40pm ship time, causing the massive ship to sink in roughly 2 hours time (approx. 2 hours before another ship was able to navigate to the wreck and save many people). While the iceberg caused this disaster, the loss of life was primarily due to a lack of lifeboats, as well as, poorly executed protocol. The Titanic only had enough lifeboats to carry about half of those onboard. Many lifeboats were launched only partly loaded.

Using the passenger list (excluding crew), I decided to tell a visual story of survivability using key passenger attributes that correlated with survival. Those attributes being sex, age, fare and class.

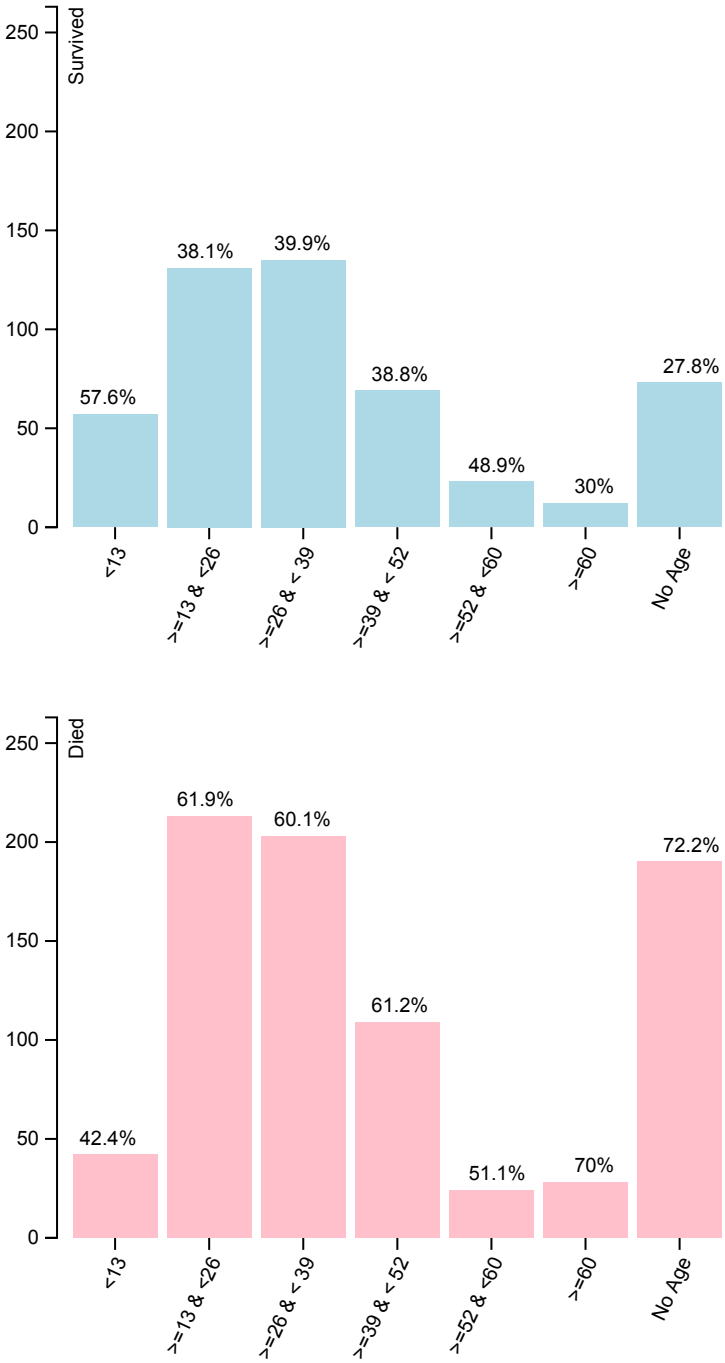
Survivability by Sex:



All Passengers (38.2%) Male Passengers (19.1%) Female Passengers (72.7%)

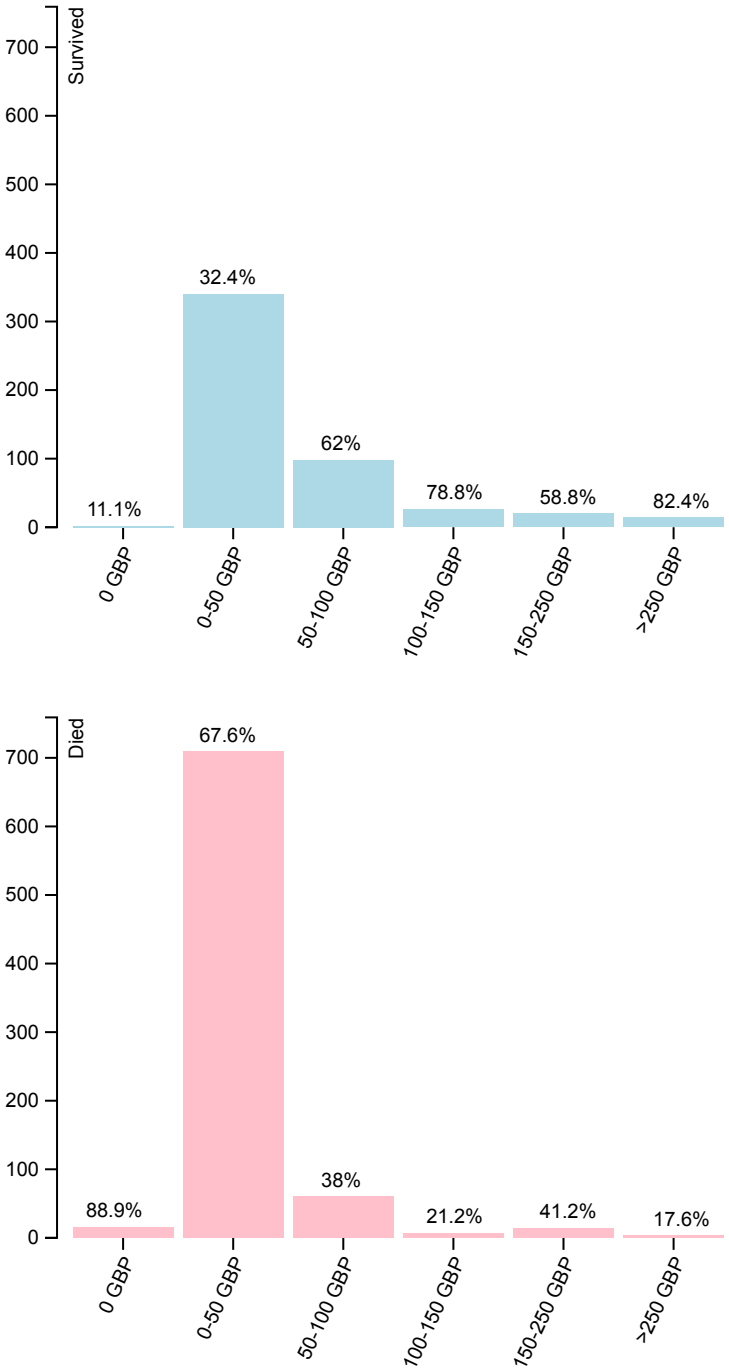
Overall, we see that of the 1,309 passengers, only 500 survived this disaster. A disproportionate number of males died during this disaster (only 19.1% survived), which is in direct contrast to females (72.7% survived). This was primarily due to the "Women and Children" first protocol followed by many of the officers loading the lifeboats. This is the most significant feature contibuting to survivability.

Survivability by Age:



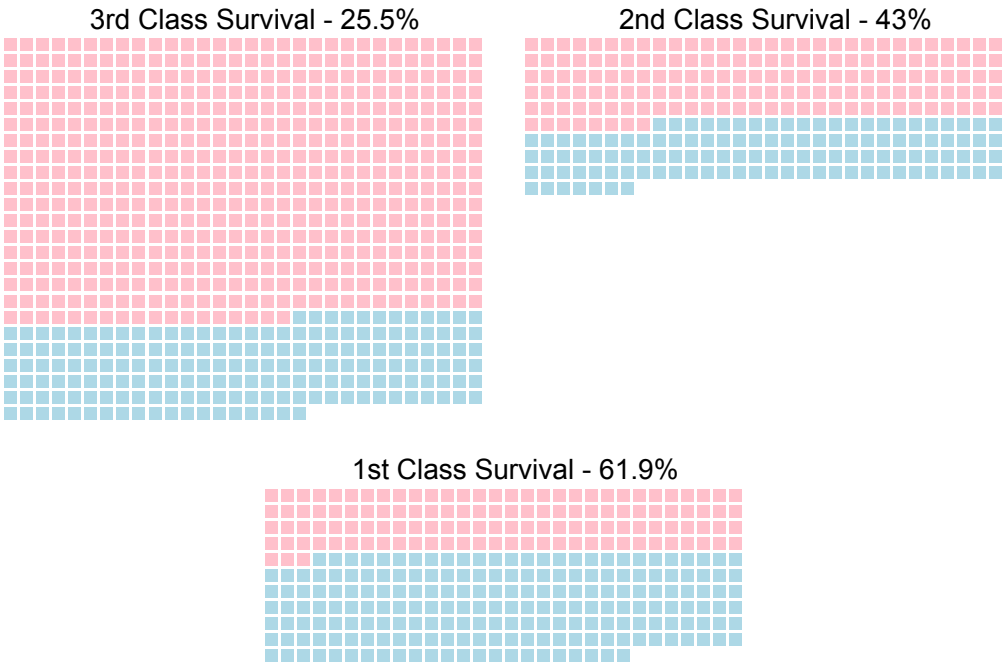
Above, I have binned passengers into groups of 13 years. The percentages apply across the graphs, showing the rate (of survival or death) for each bin. Similar to the above pie charts, the protocol of "Women and Children First" was true for those persons under 13 years of age (survival at 57.6%), though not as significant as we saw for females (who survived 72.7% of time). Further, we notice that at ages 13 to 52 (likely some of the most capable passengers) only had a survivability of about 40%. All this further strengthens the point that of the women and children point of view.

Survivability by Fare:



Beyond the "Women and Children" theme that we had seen above, another key attribute of survival was a persons "class" which is explored in the final two visualizations (above and below). In the above visualization, I have binned passengers by the fare they paid, again segregated by whether they survived or died. Again, I have labeled the bars with the percent of survival across the similar bars, with the axis being the count of passengers. We note that There was MUCH higher survivability amongst the persons that paid greater than 50 Great British Pound (GBP), with those paying more than 100 GBP having a fairly higher survivability. While most passengers paid less than 50 GBP (about 1050 passengers), survivability was low (725 or approx. 70% died).

Survivability by Cabin Class:



Finally, and building on the other major theme of "Class" (besides "Women and Children" from the first two), this visualization exemplifies the point that survivability was greater for those passengers that were in 1st class, as 62% of those passengers survived. Contrasting that was 3rd class, which had a paltry 25.5% survival.

Hover over the squares to see passenger detail.

Overall, it should be understood that survivability was truly a complex matter, where only those aboard understand how certain people came to die or survive. However, through a visual analysis of certain key passenger attributes (sex, age, fare paid and cabin class), we are able to see more clearly what correlates (but does not cause) survivability to increase or decrease. My conclusion, after much time spent analyzing and visualizing this data, is that these attributes did increase or decrease ones chance of survival, with passenger sex and cabin class being two of the most prominent contributors.