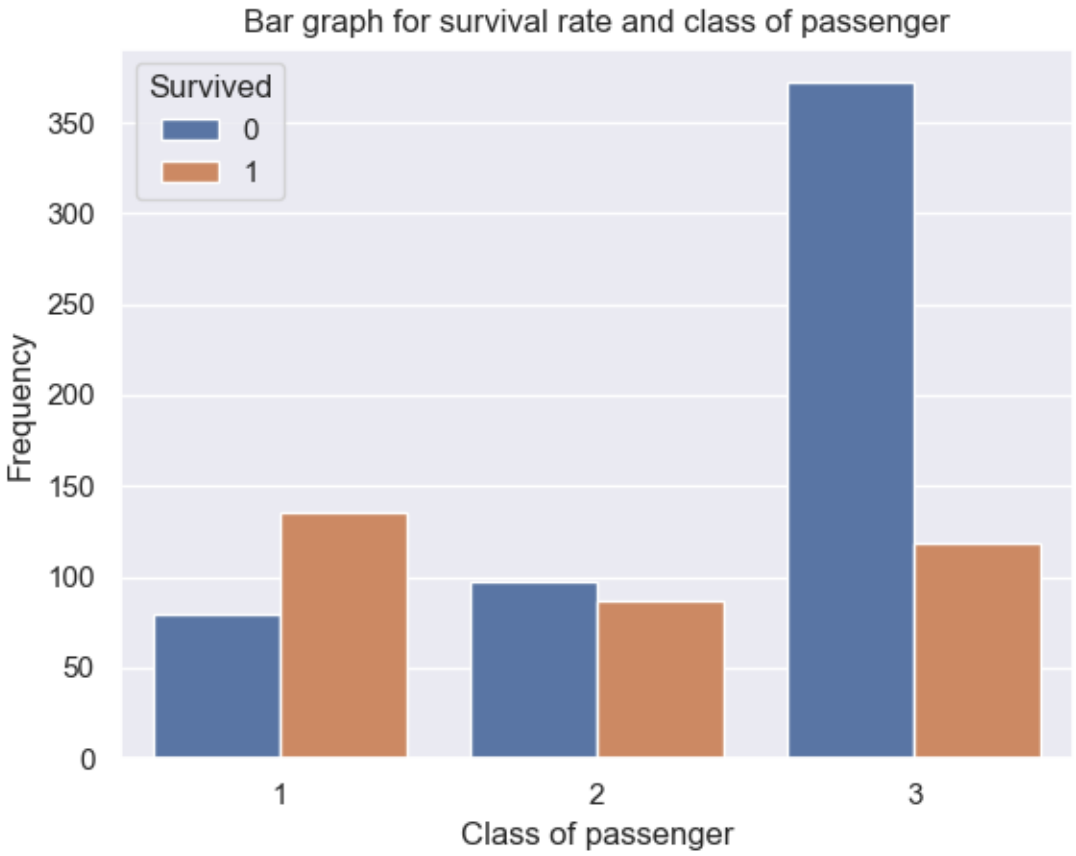
Analytics for Titanic Dataset

Three selected hypotheses:

- Determine if the survival rate is associated to the class of passenger
- Determine if the survival rate is associated to the gender
- Determine the survival rate is associated to the age

1. Determine if the survival rate is associated to the class of passenger

1.1. Bar plot:



Observations: the survival rate is different for each class of passengers

- The number of deaths has been highest for passengers in class 3, and lowest for passengers in class 1
- Thenumber of survivals is far outweighed by the number of deaths in class 3. It looks balance in class 2. In contrast, passengers in class 1 have a higher proportion in number of survivals.

1.2. Chi-square:

H0: Survival rate and class of passengers are independent.

Ha: Survival rate and class of passengers are not independent

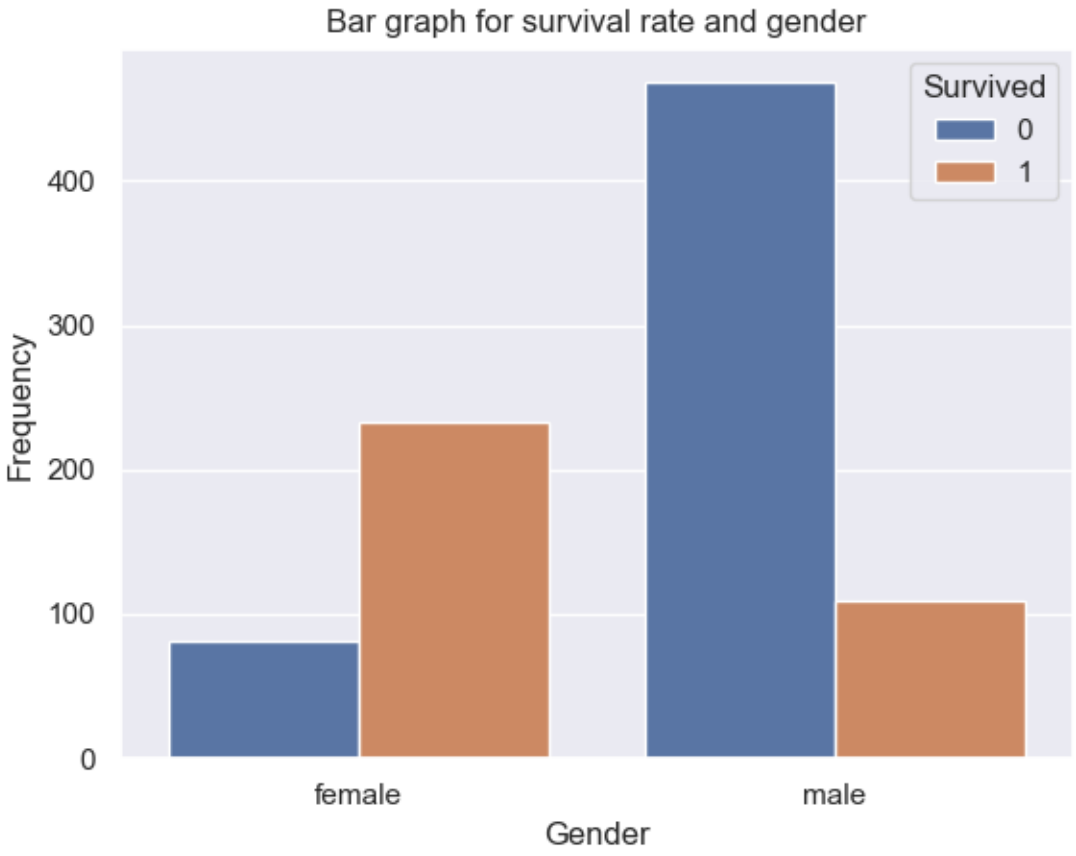
chi2 statistic = 102.89

df = 2 → dp = 5.99 12

Since the chi2 > dp, we reject the null hypothesis and conclude that; survival rate and class of passengers are not significantly independent of each other among all subjects in the population.

2. Determine if the survival rate is associated to the gender

2.1. Bar plot:



Observations: the survival rate is different for each gender of passengers

- Most of the deaths are male.
- The number of deaths in male passengers is much higher than that of survival males. While in female passenger, the survival rate is greater than death rate.

2.2. Chi square

H0: Survival rate and class of passengers are independent.

Ha: Survival rate and class of passengers are not independent

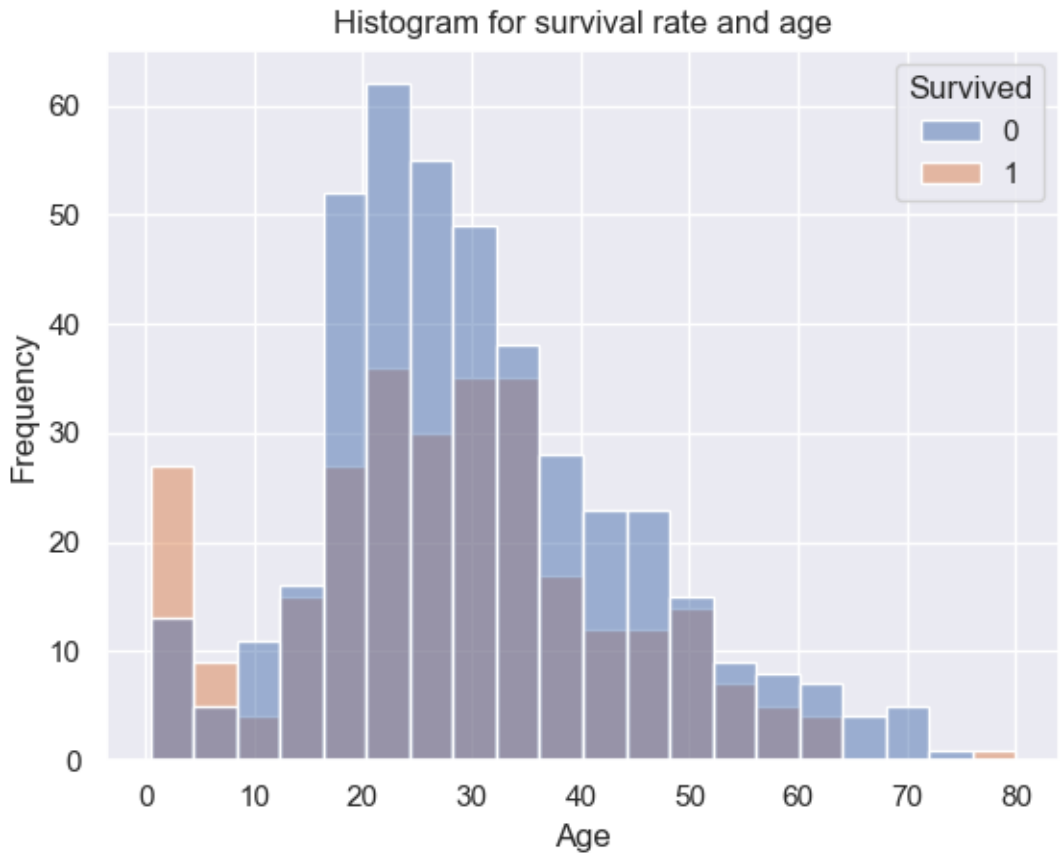
chi2 statistic = 260.72

df = 1 → dp = 3.84

Since the chi2 > dp, we reject the null hypothesis and conclude that; survival rate and gender are not significantly independent of each other among all subjects in the population.

3. Determine the survival rate is associated to the age

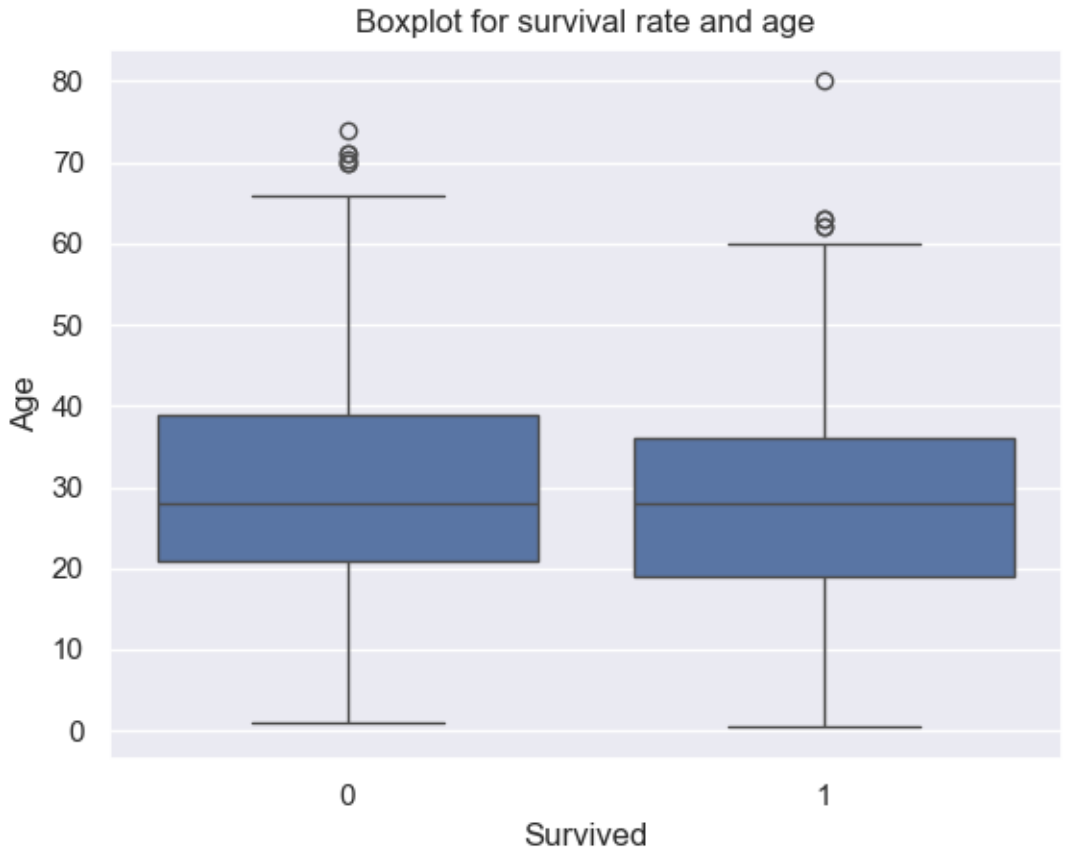
3.1. Histogram



Observations:

- The distribution of both survival and death rate are right-skewed.
- There death rate is greater than survival rate in all ages, except for the children less than 10 years old.

3.2. Box plot



Observations:

- The death rate and survival rate are quite similar in deviation and variation.