**Observations from the plots:**

* Most deceased passengers were from the lower ticket class (class 3). While survived passengers were almost equally distributed over the three tickets classes.[Ref. plot:p1]
* The majority of deceased passengers were males. And those survived mostly were females. This goes in line with the belief that women (and children) were given the priority to jump to the life boats. [Ref. plot:p2]
* Adult passengers who did not make it in the tragedy were around 5 times the deceased children. And those adults survived, who probably were from upper classes, were around 3 times the survived children. Which again proves that children were given priority over adults-maybe except for some of those with higher classes! [Ref. plot:p3]
* It is clear that most passengers (died and survived) had departed from Southampton port. Distribution of ports over both categories of passengers is almost similar which makes it difficult to be a predicting feature of survival. [Ref. plot:p4]
* The median of deceased passengers fare was slightly smaller than that of passengers who survived. Obviously, those with higher fares could make it as they were from the fortunate higher classes. [Ref. plot:p5]
* It seems that RMS Titanic was mostly a voyage of singletons. However, those unfortunates had lower odds to survive over the small and large families. [Ref. plot:p6]
* In addition to singletons, families with more than 4 members had lower odds to survive than those with 4 and less family members. Maybe this was due to the time wasted by family members looking for each other and trying to get together during the time of sinking. [Ref. plot:p7]

Three algorithms were used to make final predictions of passengers’ survival in the Kaggle test data set. The algorithms used in survival prediction are: *Random Forest (RF)*, *Gradient Boosting Machine (GBM)*, and the *Support Vector Machine (SVM)*.

Although both the RF and the SVM& models were very competitive in terms of prediction accuracy, the RF surpassed the SVM with an accuracy of **92.0%** versus **85.7%** for the SVM.

Using the SVM model, survival rate in the Kaggle test data was predicted to be **36.3%** (**81** passengers have been predicted to survive the tragedy compared to **142** who died).