

Exploratory Data Analysis

Titanic Dataset – Report of Findings

Key Insights:

1. Gender Effect:

- a. Women had a dramatically higher survival rate (74%) than men (19%)
- b. This reflects the "women and children first" evacuation policy

2. Class Influence:

- a. First-class passengers had almost 3x higher survival rates (63%) than third-class (24%)
- b. Social status significantly affected survival chances

3. Age Patterns:

- a. Children had higher survival rates, especially in higher passenger classes
- b. Young adult males had the lowest survival rates

4. Family Size Impact:

- a. Medium-sized families (2-4 members) had better survival rates
- b. Solo travelers and very large families had lower survival rates

5. Economic Factors:

- a. Higher fare correlates positively with survival
- b. This relates to passenger class and cabin location on the ship

6. Embarkation Effect:

- a. Passengers who embarked from Cherbourg had higher survival rates
- b. This may reflect differences in socioeconomic status among embarkation ports

7. Title Analysis:

- a. Titles indicating nobility/status and females had higher survival rates
- b. "Mr" had very low survival rates compared to other titles

Strongest Predictors of Survival:

- Gender (Sex)
- Passenger Class (Pclass)
- Fare
- Age (particularly for children)
- Family Size (medium-sized families fared better)

These findings demonstrate that survival aboard the Titanic was heavily influenced by demographic and socioeconomic factors rather than being purely random.