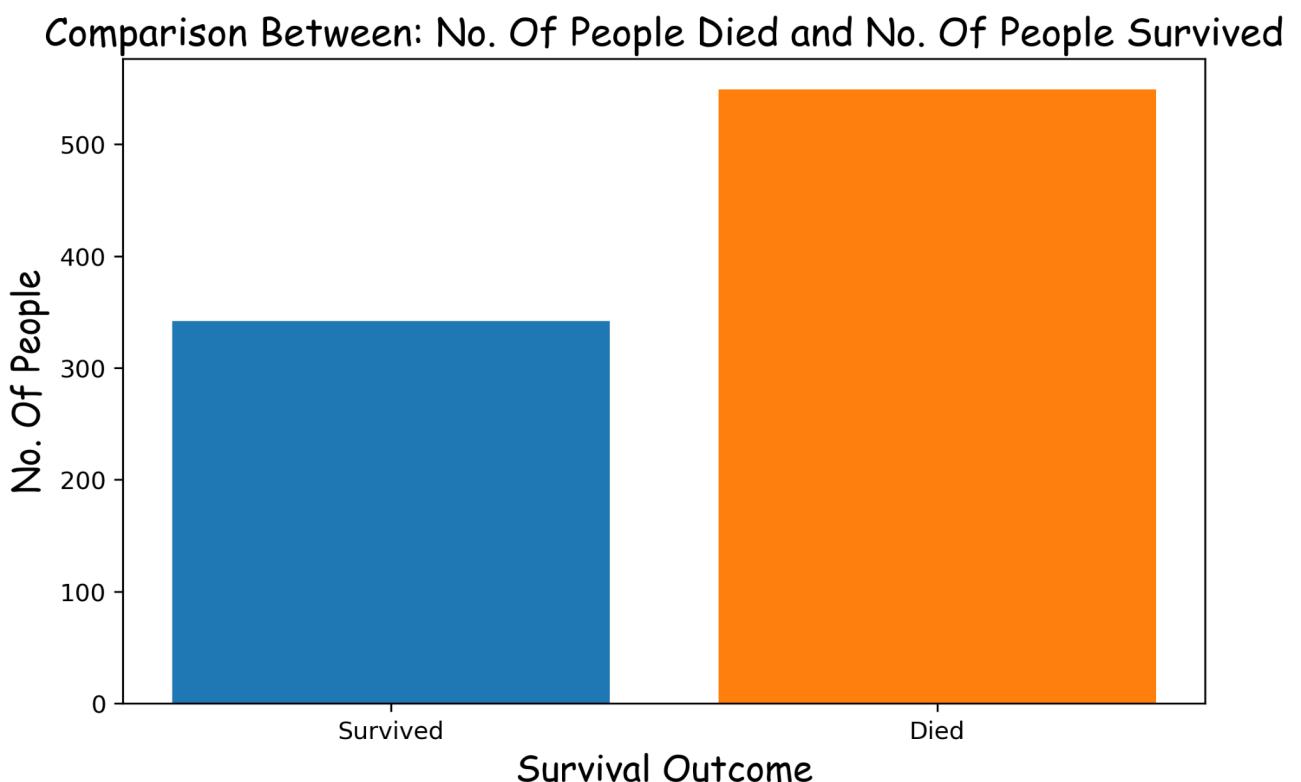


Titanic Dataset – Exploratory Data Analysis (EDA)

Objective: To analyze survival patterns in the Titanic dataset and understand how passenger class and gender influenced survival outcomes. This report uses visual exploration with structured interpretation for each graph.

1. Overall Survival Distribution



Aim: Understand the overall survival outcome of passengers.

Observation: Deaths significantly outnumber survivors.

Conclusion: Most passengers did not survive the disaster.

Reasoning: Limited lifeboat capacity and lack of preparedness restricted evacuation.

Note: This graph does not account for passenger categories such as class or gender.

2. Survival by Passenger Class (Absolute Count)



Aim: Analyze survival outcomes across passenger classes using raw counts.

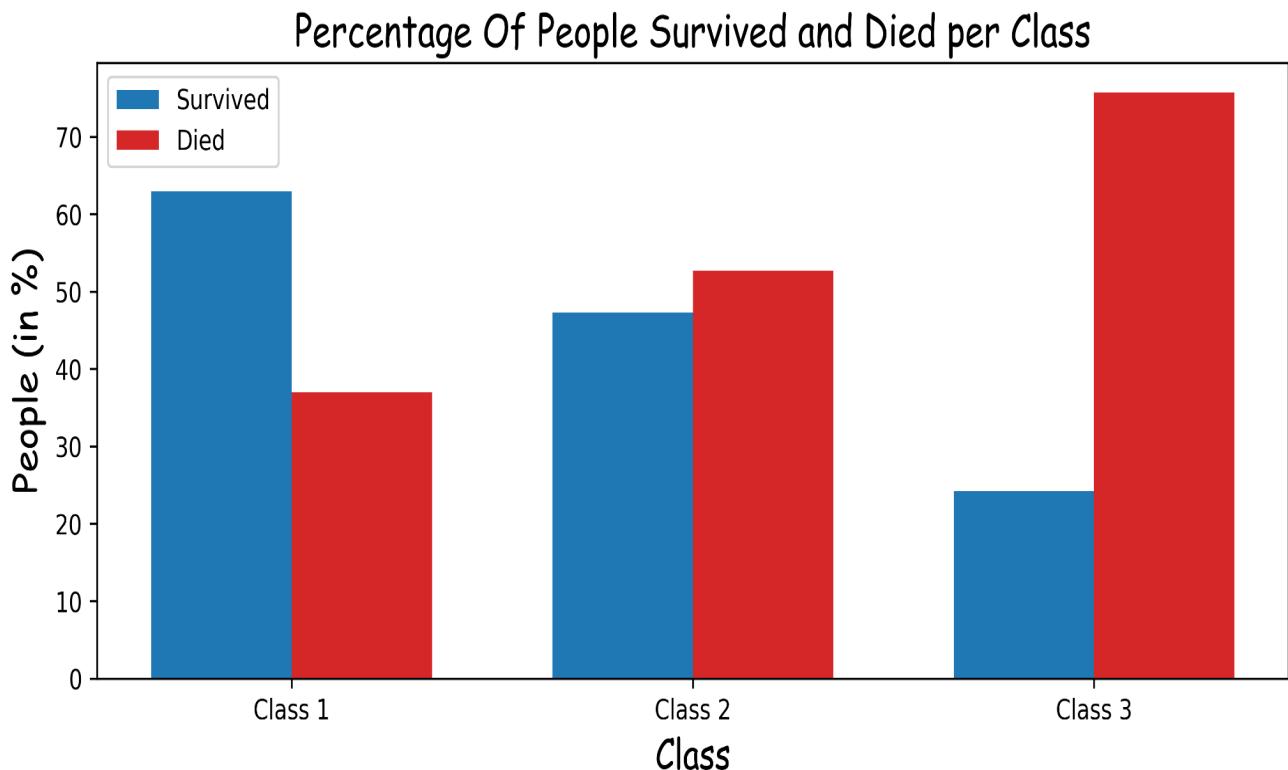
Observation: Third-class passengers have the highest number of deaths.

Conclusion: Passenger class influenced survival outcomes.

Reasoning: Higher classes had better access to lifeboats and crew assistance.

Note: Raw counts are misleading due to unequal class sizes.

3. Survival by Passenger Class (Percentage)



Aim: Remove population bias by normalizing survival counts.

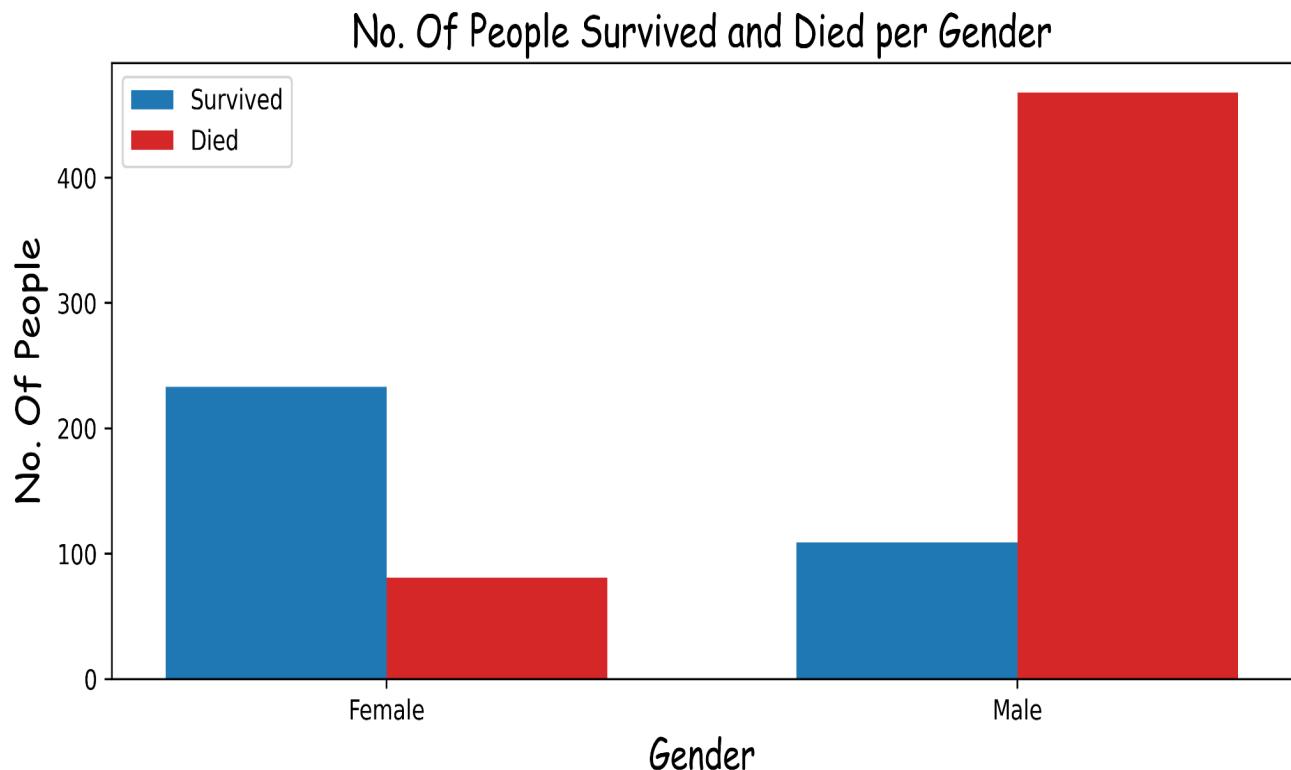
Observation: First-class passengers show the highest survival rate.

Conclusion: Passenger class strongly affects survival probability.

Reasoning: Percentage-based analysis reveals true survival likelihood.

Note: This visualization is more reliable than absolute counts.

4. Survival by Gender (Absolute Count)



Aim: Compare male and female survival outcomes using counts.

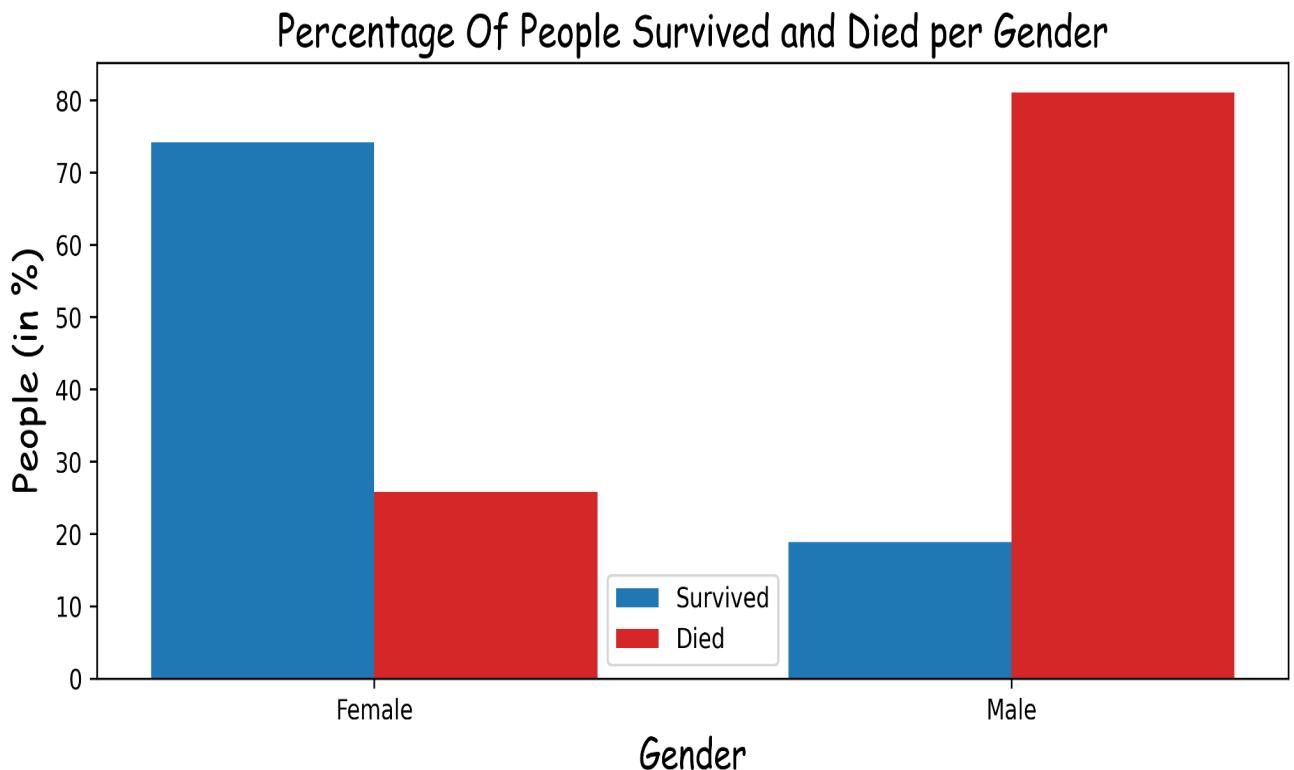
Observation: Male deaths far exceed female deaths.

Conclusion: Female passengers had a survival advantage.

Reasoning: Evacuation policy prioritized women.

Note: Counts alone do not represent survival probability.

5. Survival by Gender (Percentage)



Aim: Compare survival probability between genders.

Observation: Female survival rate is dramatically higher than male survival rate.

Conclusion: Gender is one of the strongest survival predictors.

Reasoning: Social norms and enforced evacuation rules favored women.

Note: This is the clearest representation of gender-based survival.