Titanic Dataset Analysis Report

Objective

The goal of this analysis is to understand the factors that influenced passenger survival on the Titanic. We used demographics like class, gender, age, embarkation port, family size, deck, and passenger titles.

Key Findings

1. Survival by Passenger Class

- First Class passengers had the highest survival rate (about 63 percent)
- Second Class survival was moderate (about 47 percent)
- Third Class survival was the lowest (about 24 percent)

Insight
Higher class passengers had better access to lifeboats and priority in rescue.

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2. Survival by Gender

- About 74 percent of women survived
- Only 19 percent of men survived

Insight
Rescue followed the rule *"Women and children first"*. Men faced the highest risk.

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3. Survival by Embarkation Port

- Cherbourg passengers had better survival (around 55 percent)
- Queenstown moderate survival (about 39 percent)
- Southampton lowest survival (only 33 percent)

Insight
Passengers boarding at Southampton were mostly third-class which reduced survival probability.

4. Survival by Family Size

- Solo passengers had the highest number of deaths
- Small families (2 or 3 members) showed higher survival
- Large families (more than 5 members) had lower survival

Insight
Passengers with small family groups supported each other while very large groups struggled during evacuation.

5. Survival by Title

- Mr title had the most deaths
- Miss and Mrs titles had better survival
- Titles like Master (young boys) and noble titles showed high survival

Insight
Gender, age, and social status strongly influenced survival chances.

6. Survival by Deck

- Passengers on higher decks like A, B, C, D survived more
- Lower deck passengers like E, F, G had more deaths
- Deck G and T had limited passengers and mostly deaths

Insight
Deck location is linked to class. Lower decks were far from lifeboats.

7. Survival by Age Group

- Babies and children survived more (about 58 percent)
- Teens and adults had a survival rate around 41 percent
- Elderly passengers had only 25 percent survival

Insight
Younger passengers were rescued first. Older passengers had lower mobility.

8. Age vs Survival Distribution

- Most passengers were aged 20 to 40
- Children had better survival than adults
- Elderly survival was very low

9. Age vs Fare

- Most fares were low and paid by young adults
- Few high fares were paid by first class passengers
- Fare does not depend on age but on class

Overall Conclusion

Survival on the Titanic was not random. It depended mainly on:

1. **Class**
   First class had the highest safety due to better location and access to lifeboats.
2. **Gender**
   Women were prioritized during rescue.
3. **Age**
   Children had better survival chances.
4. **Social status and deck level**
5. Higher positions on the ship increased the probability of rescue.

   This analysis proves that societal inequalities and ship structure strongly affected who lived and who died.