MGMT467 Group 7
Assignment 1 - Executive Brief
Titanic Data Analysis - Survival prediction

The Titanic, often dubbed "unsinkable," met its tragic end in 1912, resulting in a catastrophic loss of life. Over a century later, its story continues to offer invaluable lessons, especially when examined through the lens of modern data analytics. This executive brief synthesizes findings from individual assignments based on a Titanic dataset. Our objective was to meticulously identify and understand the key factors that determined a passenger's chance of survival.

Our comprehensive analysis consistently revealed three critical demographic factors—gender, passenger class, and age—as the primary predictors of survival. These findings not only underscore the harrowing realities of the disaster but also provide profound insights into human behavior and societal structures during a crisis, offering hypothetical recommendations for contemporary emergency preparedness.

The role of demographics

The data analysis, using descriptive statistics, visualizations, and statistical models (e.g., chi-square tests), revealed strong, statistically significant biases in who survived.

1. Gender: The primary determinant of survival

Gender was the single most powerful factor determining survival likelihood. The results starkly confirm the priority given to women during the evacuation.

- Women's Survival Rate: Approximately 74% of female passengers survived.
- Men's Survival Rate: Only about 19% of male passengers survived.
- Persistent Disparity: This gender bias was so strong that it often outweighed socio-economic status. Analysis showed that third-class females had a higher survival rate than first-class males, underscoring the dominance of the "women and children first" protocol.

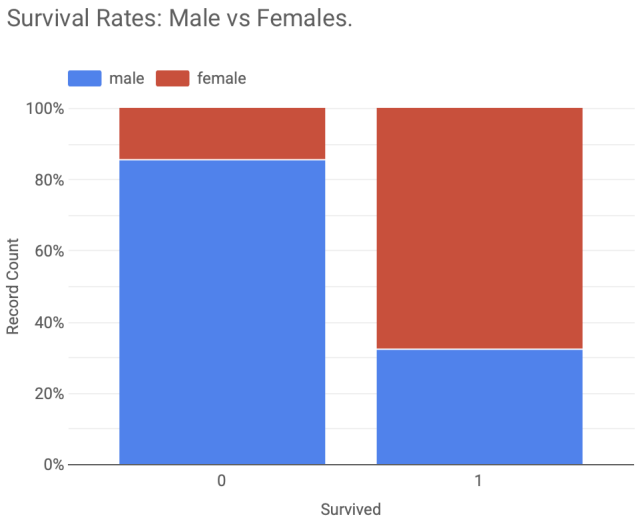

Figure 1: Survival rate by gender (Source: Group dashboard)

2. Passenger class: The Socio-Economic divide

Passenger class served as a strong proxy for socio-economic status and access to lifeboats, indicating a clear gradient in survival rates. Higher-class passengers generally had better outcomes, likely due to their proximity to the upper decks and prioritized assistance.

- First-Class: Highest survival rate (approx. 63%).
- Second-Class: Moderate survival rate (approx. 47%).
- Third-Class: Lowest survival rate (approx. 24%).

This significant difference highlights how resources and location on the vessel directly impacted a passenger's chance of survival.

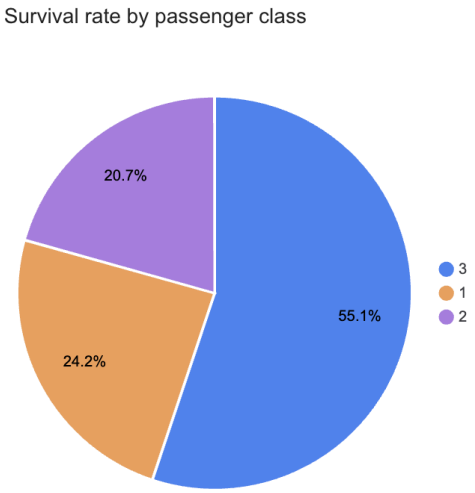

Figure 2: Survival rate by Passenger class (Source: Individual dashboard Louis)

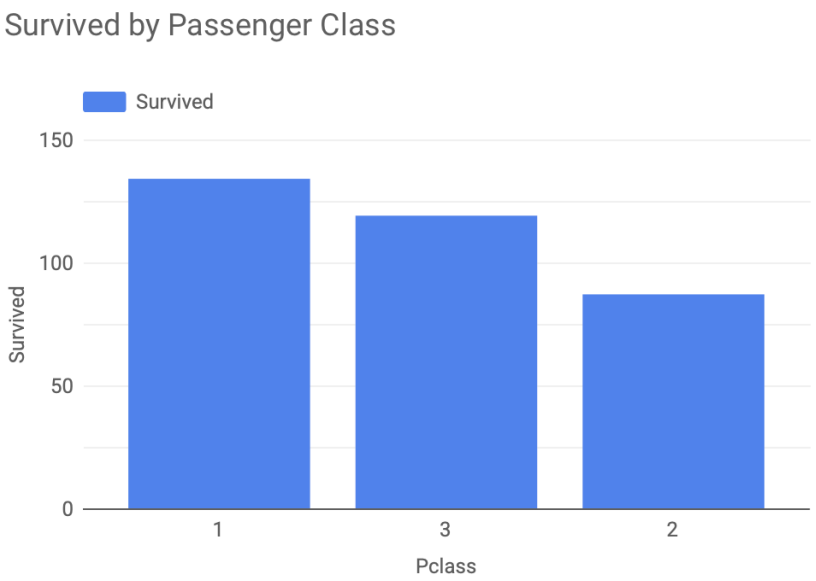

Figure 3: Total survivors by Passenger class (Source: Group dashboard)

3. Age: Priority for the Young

Age also played a distinct role, with priority given to the youngest passengers, consistent with the "women and children first" directive.

- Children (under 18): Had the highest survival rate among age groups (approx. 54%).
- Adults (18-59): Showed a moderate survival rate (approx. 36%).
- Elderly (60+): Had the lowest survival rate (approx. 27%).

A deeper analysis combining age and gender revealed a shift in priority: while the youngest children (under 12) showed a high survival rate regardless of sex, the survival rates for men dropped significantly after childhood, suggesting an increasing focus on saving adult women.

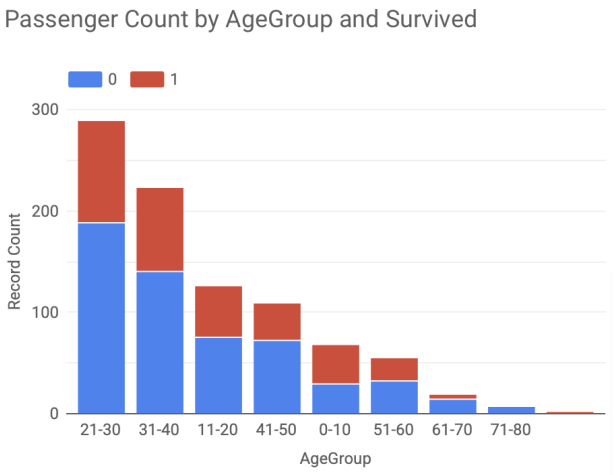

Figure 4: Passenger count by Age Group and Survival (Source: Group dashboard)

Conclusion and Hypothetical recommendation

The AI-assisted data analysis confirms that gender, class, and age were the most influential predictors of survival during the Titanic disaster. These three factors delineate who was prioritized, who had access, and who ultimately survived.

While this is a historical dataset, the clarity of these findings provides crucial lessons for modern emergency management and humanitarian response planning:

1. Explicit Prioritization of Vulnerable Groups: Future emergency protocols should explicitly prioritize vulnerable populations, including women, children, and individuals with limited resources or access.
2. Equitable Access and Communication: Evacuation plans must ensure clear, accessible communication and equitable routes for all individuals, transcending socio-economic status or location barriers to prevent disparities in survival chances.
3. Targeted Preparedness: Safety briefings and drills should be tailored to address the diverse needs and challenges of different demographic groups, enhancing overall preparedness and maximizing survival chances in a crisis.