Pinky Sa-ngarmangkang

Assignment 3 Part 2 (Titanic)

1. **Survival Rate vs Class of Passenger**

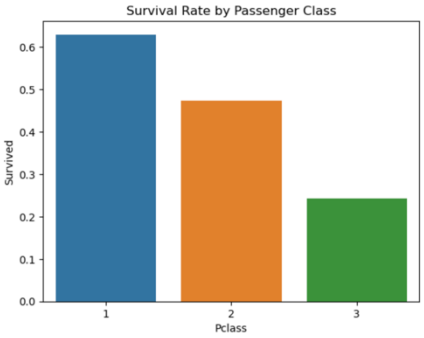
Achieved stats from Python:

i. chi squared value = 102.89
ii. p-value = 4.55e-23
iii. degree of freedom = 2
iv. expected frequencies = [133.09, 113.37, 302.54], [82.91, 70.62, 188.46]

According to the chi square table, the chosen significance level of 0.05, degree of freedom of 2, the critical value is 5.991. The observed chi square of 102.89 is much higher than the critical value. The observed p-value is much lower than 0.05. There are large differences between observed and expected frequencies. These statical analyses suggest that there is a significant association between survival rate and class of passenger.

Pclass	1	2	3
Survived			
0	80	97	372
1	136	87	119

	Pclass	Survived
0	1	0.629630
1	2	0.472826
2	3	0.242363



2. **Survival Rate vs Gender**

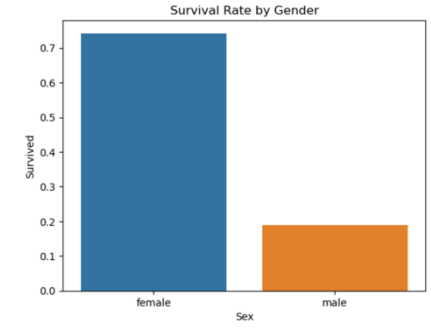
Achieved stats from Python:

i. chi squared value = 260.72
ii. p-value = 1.20e-58
iii. degree of freedom = 1
iv. expected frequencies = [193.47, 355.53], [120.53, 221.48]

According to the chi square table, the chosen significance level of 0.05, degree of freedom of 1, the critical value is 3.841. The observed chi square of 260.72 is much higher than the critical value. The observed p-value is much lower than 0.05. There are large differences between observed and expected frequencies. These statical analyses suggest that there is a significant association between survival rate and gender.

Sex	female	male
Survived		
0	81	468
1	233	109

	Sex	Survived
0	female	0.742038
1	male	0.188908



3. **Survival Rate vs Age**

Achieved stats from Python:

i. chi squared value = 6.30
ii. p-value = 0.01
iii. degree of freedom = 1
iv. expected frequencies = [82.54, 341.46], [56.46, 233.54]

According to the chi square table, the chosen significance level of 0.05, degree of freedom of 1, the critical value is 3.841. The observed chi square of 6.30 is higher than the critical value. The observed p-value is lower than 0.05. There are differences between observed and expected frequencies. These statical analyses suggest that there is a significant association between survival rate and age group (Children 0-18 years old and Adults 19+)

AgeGroup	Children	Adult
Survived		
0	69	355
1	70	220

	AgeGroup	Survived
0	Children	0.503597
1	Adult	0.382609