**CPSC-4800**

**ASSIGNMENT – III**

**Hypothesis : Determine if the survival rate is associated to the class of passenger.**

<AxesSubplot:xlabel='Pclass', ylabel='Survived'>

Chart, box and whisker chart

Description automatically generated

|  | **Pclass** | **Survived** |
| --- | --- | --- |
| **0** | 1 | 0.629630 |
| **1** | 2 | 0.472826 |
| **2** | 3 | 0.242363 |

There is an association between the class of the passenger and the survival rate. It can be inferred that Class 1 passengers had the highest survival rate of 62.9630%, and it decreases as the class gets lower. Class 2 passengers had a 47.2826% survival rate, while Class 3 passengers had the lowest survival rate of 24.2363% only.

**Hypothesis : Relation between passengers who DID NOT survive and class of the passenger.**

<AxesSubplot:xlabel='Survived', ylabel='count'>

Chart, bar chart

Description automatically generated

From the above figure, it can be inferred that there is a relation between passengers who did not survive and their respective classes. Most of the passengers under class 3 did not survive much whereas, class 1 and 2 had similar kind of pattern.

**Hypothesis : Determine if the survival rate is associated to the gender.**

<AxesSubplot:xlabel='Survived', ylabel='count'>

Chart, bar chart

Description automatically generated

|  | **Sex** | **Survived** |
| --- | --- | --- |
| **0** | female | 0.742038 |
| **1** | male | 0.188908 |

According to these two figures, female passengers had a significantly higher survival rate compared to males. Females had a 74.2038% survival rate while males only had a 18.8908% survival rate.

|  |  | **Survived** |
| --- | --- | --- |
| **Pclass** | **Sex** |  |
| **1** | **female** | 0.968085 |
| **male** | 0.368852 |
| **2** | **female** | 0.921053 |
| **male** | 0.157407 |
| **3** | **female** | 0.500000 |
| **male** | 0.135447 |

It can be inferred that females from both Class 1 and 2 have significantly high survival rates (96.8% and 92.1%, respectively), while males from classes 2 and 3 only have a 15.7% and 13.5% survival rate, respectively.

**Hypothesis : Determine if the survival rate is associated to the age.**

<Figure size 1080x432 with 0 Axes>

Chart, histogram

Description automatically generated

There is a relationship between survival rate and age. It can be seen that the graph increases from age between 0 to 30 and after that it decreases. So, this means that people older than 30 survives less than the age group under 30.