1. Classifying Quantitative or Qualitative Variable

|  |  |  |
| --- | --- | --- |
|  | Variable | Quantitative V.s. Qualitative |
| a) | pclass | Quantitative |
| b) | survival | Quantitative |
| c) | name | Quantitative |
| d) | Gender | Quantitative |
| e) | age | Qualitative |
| f) | sibsp | Qualitative |
| g) | parch | Qualitative |
| h) | ticket | Quantitative |
| i) | fare | Qualitative |
| j) | cabin | Quantitative |
| k) | embarked | Quantitative |
| l) | boat | Quantitative |
| m) | body | Quantitative |
| n) | home.dest | Quantitative |
| o) | Residence | Quantitative |

3.

A graph with a number of colored lines and a number of black text

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A computer code with text

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According to the comparative boxplot, the median fare for passengers who survived is higher. It may indicate that wealthier passengers had a higher chance of survival.

4. Creating Two-way Tables

A computer screen shot of a computer code

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A computer screen shot of a computer code

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i. Survival by Gender

* Women had a significantly higher survival rate than men.

ii. Survival by Passenger Class

* First class passengers had a better chance of survival than those in second and third class.

iv. Gender by Passenger Class

* Wealthier women were more likely to afford first-class tickets.

5. Performing Chi Square Analysis

I. Hypothesize:

* Null Hypothesis (H0): There is no association between the two variables.
* Alternative Hypothesis (HA): There is an association between the two variables.

II. Prepare:

* Significance Level (Alpha): 5% or 0.05
* Will reject H0 if p-value is less than 0.05

III. Compute & Compare in R-studio:

A screenshot of a computer program

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IV. Interpret the Results:

i. Survival by Gender

* Since p-value < alpha, reject H0.
* There is a statistically significant association between gender and survival rate.

ii. Survival by Passenger Class

* Since p-value < alpha, reject H0.
* There is a statistically significant association between passenger class and survival rate.

iii. Survival by Residence

* Since p-value < alpha, reject H0.
* There is a statistically significant association between residence and survival rate.

iv. Gender by Passenger Class

* Since p-value < alpha, reject H0.
* There is a statistically significant association between passenger class and gender.

Conclusion:

The Chi-square tests show that there are significant associations between survival and gender, passenger class, and residence.