1. Run a correlation analysis for PRICE by FIVESTAR. (10 points)
   1. Is the correlation significant or not? Explain why or why not. (1 point)

The correlation is significant because the p value (0.000) i.e. sig. (2-tailed) is less than the significance level (0.01)

* 1. What is the correlation? What is its strength (magnitude)? (2 points)

The correlation is 0.401 which implies a moderate relationship

* 1. What is the directionality of the correlation? Explain how the variables react to each other (do they travel together or go in opposite directions)? (2 point)

The directionality of the correlation is positive i.e. the variables travel together which implies as price increases, fivestar increases and vice versa.

* 1. In your own words, write up the results of this correlation analysis in your own words. Be sure to include the test statistic and p-value in your write-up. (5 points)

The correlation analysis implies that there is a moderate positive relationship between price and fivestar with correlation value 0.401 and p value 0.000.

**SPSS OUTPUT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Correlations** | | | |
|  | | Price | Fivestar |
| Price | Pearson Correlation | 1 | .401\*\* |
| Sig. (2-tailed) |  | .000 |
| N | 550 | 550 |
| Fivestar | Pearson Correlation | .401\*\* | 1 |
| Sig. (2-tailed) | .000 |  |
| N | 550 | 550 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | |

1. Run a regression analysis for PRICE (Independent) by FIVESTAR (Dependent). (25 points)
   1. What is the Coefficient of Determination (R2) for the regression? How much of the variation in the Importance Rating for Five-Star Service is explained by Price Importance? (1 point)

R2 = 0.161

0.161 \* 100 = 16% of the total variation in the importance rating for five star service is explained by Price Importance.

* 1. List the test statistic, df and p-value. Is the test statistically significant? (5 points)

F = 105.306, df1 =1 , df2 = 548, Yes, the test is significant.

* 1. What is the Y-intercept? (2 points)

Y-intercept = 2.230

* 1. What is the regression coefficient? (2 points)

Regression coefficient = 0.453

* 1. Using Excel, create a model using the linear regression equation provided by the regression analysis. What is the value of the five-star importance rating when price importance is rated 1, 3 or 5? (5 points)

|  |  |  |
| --- | --- | --- |
| Y = | 2.230+ 0.453x |  |
| y (1) = | 2.683 |  |
| y(3) = | 4.495 |  |
| y(5) = | 4.495 |  |

* 1. Using Excel, create a graph showing the linear association between the importance of price and five-star rating. (5 points)

* 1. In your own words, write up the results shown in your graph. (5 points)

The graph results shows that there is an upward trend in the data, i.e. as price increases, fivestar also increases which implies a positive relationship.

**SPSS OUTPUT**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model Summary** | | | | | | | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .401a | .161 | .160 | 1.312 | .161 | 105.306 | 1 | 548 | .000 |
| a. Predictors: (Constant), Price | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ANOVAa** | | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 181.395 | 1 | 181.395 | 105.306 | .000b |
| Residual | 943.958 | 548 | 1.723 |  |  |
| Total | 1125.353 | 549 |  |  |  |
| a. Dependent Variable: Fivestar | | | | | | |
| b. Predictors: (Constant), Price | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Coefficientsa** | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 2.230 | .159 |  | 14.036 | .000 |
| Price | .453 | .044 | .401 | 10.262 | .000 |
| a. Dependent Variable: Fivestar | | | | | | |