**Hypothesis testing reporting**

1. **One-way ANOVA**

**H0**: The means of students' satisfaction across different levels of their current perceptions of AI are equal.

**Ha**: The means of students' satisfaction across different levels of their current perceptions of AI are not equal.

Comparing the means of the independent variable "**Satisfaction\_cf**" across different levels of the corresponding dependent variables **Perceptions of AI, Possitive Attitudes of AI, Negative Attitudes of AI**.

***Perception of AI***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| Satisfaction\_cf | 1 | 5.765 | 5.7647 | 5.2996 | 0.0269 |
| Residuals | 38 | 41.335 | 1.0878 |  |  |

There are two degrees of freedom, one for "**Satisfaction\_cf**", indicating that this is one-way factor and 38 for the residuals.

The sum of squares for "Satisfaction\_cf" is 5.765, while for the residuals, it is 41.335.

The mean square for "**Satisfaction\_cf**" is calculated by dividing the sum of squares by its degrees of freedom (5.765 / 1 = 5.7647), and for the residuals, it is 1.0878.

The F value is a test statistic that assesses the difference in means between groups. In this case, the F value for "**Satisfaction\_cf**" is ***5.2996***. A higher F value suggests a stronger effect.

The p-value associated with the F value measures the significance of the differences in means. In this case, the **p-value** is **0.0269**, which is less than the typical significance level of 0.05. A lower p-value suggests a more significant effect

***RESULTS:***

p-value = 0.0269

p-value ≤ alpha (0.05)

Conclusion: **Reject the H0.**

Interpretation: There is a significant difference in students' satisfaction across different levels of their current perceptions of AI.

***Positive Attitude of AI***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| Satisfaction\_cf | 1 | 3.559 | 3.5588 | 3.5643 | 0.06669 |
| Residuals | 38 | 37.941 | 0.9985 |  |  |

There are two degrees of freedom, one for "**Satisfaction\_cf**", indicating that this is one-way factor and 38 for the residuals.

The sum of squares for "**Satisfaction\_cf**" is 3.559, while for the residuals, it is 37.941.

The mean square for "**Satisfaction\_cf**" is calculated by dividing the sum of squares by its degrees of freedom (3.559/ 1 = 3.559), and for the residuals, it is 0.9985.

The F value is a test statistic that assesses the difference in means between groups. In this case, the F value for "**Satisfaction\_cf**" is ***3.5643***. A higher F value suggests a stronger effect.

The p-value associated with the F value measures the significance of the differences in means. In this case, the **p-value** is ***0.06669***, which is **more** than the typical significance level of 0.05. A lower p-value suggests a more significant effect

***RESULTS:***

p-value = 0.06669

p-value > alpha (0.05)

Conclusion: **Reject the H1.**

Interpretation: There is no significant difference in students' satisfaction across different levels of their positive attitudes toward AI.

***Negative Attitude of AI***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| Satisfaction\_cf | 1 | 4.235 | 4.2353 | 4.1544 | 0.04853 |
| Residuals | 38 | 38.740 | 1.0195 |  |  |

There are two degrees of freedom, one for "**Satisfaction\_cf**", indicating that this is one-way factor and 38 for the residuals.

The sum of squares for "**Satisfaction\_cf**" is 4.235, while for the residuals, it is 41.335.

The mean square for "**Satisfaction\_cf**" is calculated by dividing the sum of squares by its degrees of freedom (4.235/ 1 =4.235), and for the residuals, it is 1.0195.

The F value is a test statistic that assesses the difference in means between groups. In this case, the F value for "**Satisfaction\_cf**" is ***4.1544***. A higher F value suggests a stronger effect.

The p-value associated with the F value measures the significance of the differences in means. In this case, the **p-value** is ***0.04853***, which is less than the typical significance level of 0.05. A lower p-value suggests a more significant effect

***RESULTS:***

p-value = 0.04853

p-value ≤ alpha (0.05)

Conclusion: **Reject the H0.**

Interpretation: There is a significant difference in students' satisfaction across different levels of their negative attitudes toward AI.

1. ***MANOVA test***

**H0**: There is no significant difference in the combined means of students' satisfaction with campus facilities and their current perceptions of AI.

**Ha**: There is a significant difference in the combined means of students' satisfaction and their current perceptions of AI.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Pillai | approx F | num Df | den Df | Pr(>F) |
| Satisfaction\_cf | 1 | 0.27409 | 4.5309 | 3 | 36 | 0.008541 |
| Residuals | 38 |  |  |  |  |  |

There are two degrees of freedom, one for "Satisfaction\_cf", indicating that this is one-way factor and 38 for the residuals.

Pillai's trace statistic is a multivariate test statistic that assesses the relationship between the variables. For "**Satisfaction\_cf**," the Pillai's trace value is **0.27409**. This value indicates the strength of the relationship between the variables. A higher Pillai's trace suggests a stronger relationship.

The F statistic is used to compare the variance between groups (**effect**) to the variance within groups (**error**). For "**Satisfaction\_cf,**" the approximate F value is **4.5309**. This statistic indicates whether there is a significant effect of "**Satisfaction\_cf**" on the **AI perceptions** (dependent variables).

The *numerator* degrees of freedom represent the degrees of freedom for the **effect** (between groups). For "**Satisfaction\_cf**," there are 3 degrees of freedom.

The denominator degrees of freedom represent the degrees of freedom for the **error** (within groups). It's 36 in this case.

P-value assesses the significance of the relationship between the variables which is **0.008541**

**RESULTS:**

p-value = 0.008541

p-value ≤ alpha (0.05)

Conclusion: **Reject the H0**.

Interpretation: There is a significant difference in the combined means of students' satisfaction and their current perceptions of AI.

1. **Linear Regression**

**H0:** There is no linear relationship between students' satisfaction and their current perceptions of AI.

**Ha:** There is a linear relationship between students' satisfaction and their current perceptions of AI.

***Residuals***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Min | 1Q | Median | 3Q | Max |
|  | -5.1250 | -1.0588 | 0.7426 | 0.8971 | 2.8750 |

***Coefficients***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Estimate | Std. Error | t value | Pr(>|t|) |
| (Intercept) | 14.4779 | 1.2516 | 11.568 | 5.13e-14 |
| Satisfaction\_cf | -1.0882 | 0.3049 | -3.569 | 0.00099 |

|  |  |
| --- | --- |
|  |  |
| Residual standard error | 1.778 on 38 degrees of freedom |
| Multiple R-squared | 0.2511 |
| Adjusted R-squared | 0.2314 |
| F-statistic | 12.74 on 1 and 38 DF |
| p-value | 0.0009902 |

Residuals represent the differences between the “**Satisfaction\_cf**” actual observed values and the values predicted “**Perceptions**”, “**Pos\_Att**”, and “**Neg\_Att**” by the regression model. The residuals have a min of -5.1250 and a max of 2.8750. These values indicate the range of errors in the model's predictions.

The coefficients indicate the estimated relationships between the independent variable **Satisfaction\_cf** and the combined dependent variables.

The estimated **intercept** is 14.4779. It represents the expected value of the combined dependent variables when **Satisfaction\_cf** is 0.

“**Satisfaction\_cf**” is the key coefficient. It indicates that for each unit **increase** in **Satisfaction\_cf**, the combined dependent variables (**Perceptions, Pos\_Att,** and **Neg\_Att**) are expected to **decrease** by approximately **1.0882** units.

The residual standard error is approximately 1.778 and it measures the spread of residuals around the regression line.

Multiple R-squared (R²) represents the proportion of the variance in the combined dependent variables explained by the model. In this case, the model explains about **25.11%** of the variance.

Adjusted R-squared adjusts for the number of predictors and provides a value of **23.14%.**

The F-statistic tests the overall significance of the model. It has a value of 12.74 with 1 and 38 degrees of freedom.

The associated **p-value 0.0009902** is less than 0.05, indicating that the overall model is statistically significant.

**RESULTS:**

p-value = 0.0009902

p-value ≤ alpha (0.05)

Conclusion: **Reject the H0**.

Interpretation: There is no linear relationship between students' satisfaction and their current perceptions of AI.