***The data from the survey focused on the participants perception of job security.***

***Note: a second EXCEL attachment has the data used for these*** ***tests.***

**Step 1:**

Ho = All of the mean are the same.

Ha  = At least one of the mean is different.

**Step 2:**

The significance level is 0.05

Step 3 & 4:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Anova: Single Factor |   |   |   |   |   |
|   |   |   |   |   |   |   |
| SUMMARY |   |   |   |   |   |   |
| *Groups* | *Count* | *Sum* | *Average* | *Variance* |   |   |
| Very True | 177 | 413 | 2.333 | 16.485 |   |   |
| Somewhat true | 111 | 389 | 3.505 | 21.652 |   |   |
| Not very true | 65 | 242 | 3.723 | 21.172 |   |   |
| Not at all true | 36 | 232 | 6.444 | 23.111 |   |   |
|   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |
| ANOVA |   |   |   |   |   |   |
| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
| Between Groups | 537.472 | 3 | 179.157 | 9.262 | 0.000 | 2.628 |
| Within Groups | 7446.985 | 385 | 19.343 |   |   |   |
|   |   |   |   |   |   |   |
| Total | 7984.458 | 388 |   |   |   |   |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Post hoc* analysis |   |   |   |   |
| Tukey simultaneous comparison t-values (d.f. = 385) |   |   |
|   |   | Very True | Somewhat true | Not very true | Not at all true |
|   |   | 2.3  | 3.5  | 3.7  | 6.4  |
| Very True | 2.3  |   |   |   |   |
| Somewhat true | 3.5  | 2.20  |   |   |   |
| Not very true | 3.7  | 2.18  | 0.32  |   |   |
| Not at all true | 6.4  | 5.11  | 3.49  | 2.98  |   |
|   |   |   |   |   |   |
|                critical values for experimentwise error rate: |   |   |
|   |   | 0.05 | 2.60 |   |   |
|   |   | 0.01 | 3.18 |   |   |
|  |   |   |   |   |   |
| p-values for pairwise t-tests |   |   |   |
|   |   | Very True | Somewhat true | Not very true | Not at all true |
|   |   | 2.3  | 3.5  | 3.7  | 6.4  |
| Very True | 2.3  |   |   |   |   |
| Somewhat true | 3.5  | .0284 |   |   |   |
| Not very true | 3.7  | .0300 | .7505 |   |   |
| Not at all true | 6.4  | 0.000 | .0005 | .0031 |   |
|   |   |   |   |   |   |

The test statistic is 9.26.

The critical value is 2.63.

Let's look at  the post-hoc analysis again.

|  |  |  |  |
| --- | --- | --- | --- |
| p-values for pairwise t-tests |   |   |   |
|   |   | Very True | Somewhat true | Not very true | Not at all true |
|   |   | 2.3  | 3.5  | 3.7  | 6.4  |
| Very True | 2.3  |   |   |   |   |
| Somewhat true | 3.5  | .0284 |   |   |   |
| Not very true | 3.7  | .0300 | .7505 |   |   |
| Not at all true | 6.4  | 0.000 | .0005 | .0031 |   |

Which variable(s) are different from the others (HINT: look at the yellow cells).

You determined that there is a significant difference between the mean values of the alcohol index and the respondent's financial security (very true = strong, to not at all true = weak confidence).

What does this tell you?