***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?