# Summary of nonparametric statistics analysis for the latent trait estimates of Interest/Enjoyment in the pilot study for signed up students

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Table 1: Summary of Scheirer-Ray-Hare results for the latent trait estimates of Interest/Enjoyment in the pilot study for signed up students

|  | Df | Sum Sq | H | p.value | Sig |
|---|---|---|---|---|---|
| Type |  |  |  |  |  |
| Type:Type | 1 | 277.266 | 3.590 | 0.058 |  |
| Type:CLRole | 1 | 42.321 | 0.548 | 0.459 |  |
| Type:Type:CLRole | 1 | 29.121 | 0.377 | 0.539 |  |
| Type:Residuals | 26 | 1890.792 |  |  |  |

Signif. codes: 0 "**" 0.01 "*" 0.05

Table 2: Descriptive statistic of the pair wilcoxon analysis for the latent trait estimates of Interest/Enjoyment in the pilot study for signed up students

|  | Group | N | Median | Mean.Ranks | Sum.Ranks | U | Z | p.value | r | magnitude |
|---|---|---|---|---|---|---|---|---|---|---|
| Type.less.1 | non-gamified | 14 | −0.78 | 12.25 | 171.5 | 66.5 | −1.89 | 0.029 | 0.346 | medium |
| Type.less.2 | ont-gamified | 16 | 0.48 | 18.34 | 293.5 | 66.5 | −1.89 | 0.029 | 0.346 | medium |

Table 3: Full descriptive statistic of the pair wilcoxon analysis for the latent trait estimates of Interest/Enjoyment in the pilot study for signed up students

|  | Group | N | Median | Mean.Ranks | Sum.Ranks | U | Z | p.value | r | magnitude |
|---|---|---|---|---|---|---|---|---|---|---|
| Type.less.1 | non-gamified | 14 | −0.78 | 12.25 | 171.5 | 66.5 | −1.89 | 0.029 | 0.346 | medium |
| Type.less.2 | ont-gamified | 16 | 0.48 | 18.34 | 293.5 | 66.5 | −1.89 | 0.029 | 0.346 | medium |
| Type.greater.1 | non-gamified | 14 | −0.78 | 12.25 | 171.5 | 66.5 | −1.89 | 0.972 | 0.346 | medium |
| Type.greater.2 | ont-gamified | 16 | 0.48 | 18.34 | 293.5 | 66.5 | −1.89 | 0.972 | 0.346 | medium |
| Type.two.sided.1 | non-gamified | 14 | −0.78 | 12.25 | 171.5 | 66.5 | −1.89 | 0.059 | 0.346 | medium |
| Type.two.sided.2 | ont-gamified | 16 | 0.48 | 18.34 | 293.5 | 66.5 | −1.89 | 0.059 | 0.346 | medium |
| Type:CLRole.less.1 | non-gamified.Apprentice | 12 | −0.99 | 7.33 | 88.0 | 10.0 | −0.37 | 0.385 | 0.098 | none |
| Type:CLRole.less.2 | non-gamified.Master | 2 | −0.37 | 8.50 | 17.0 | 10.0 | −0.37 | 0.385 | 0.098 | none |
| Type:CLRole.greater.1 | non-gamified.Apprentice | 12 | −0.99 | 7.33 | 88.0 | 10.0 | −0.37 | 0.659 | 0.098 | none |
| Type:CLRole.greater.2 | non-gamified.Master | 2 | −0.37 | 8.50 | 17.0 | 10.0 | −0.37 | 0.659 | 0.098 | none |
| Type:CLRole.two.sided.1 | non-gamified.Apprentice | 12 | −0.99 | 7.33 | 88.0 | 10.0 | −0.37 | 0.791 | 0.098 | none |
| Type:CLRole.two.sided.2 | non-gamified.Master | 2 | −0.37 | 8.50 | 17.0 | 10.0 | −0.37 | 0.791 | 0.098 | none |
| Type:CLRole.less.11 | non-gamified.Apprentice | 12 | −0.99 | 10.58 | 127.0 | 49.0 | −1.33 | 0.096 | 0.272 | small |
| Type:CLRole.less.21 | ont-gamified.Apprentice | 12 | 0.40 | 14.42 | 173.0 | 49.0 | −1.33 | 0.096 | 0.272 | small |
| Type:CLRole.greater.11 | non-gamified.Apprentice | 12 | −0.99 | 10.58 | 127.0 | 49.0 | −1.33 | 0.909 | 0.272 | small |
| Type:CLRole.greater.21 | ont-gamified.Apprentice | 12 | 0.40 | 14.42 | 173.0 | 49.0 | −1.33 | 0.909 | 0.272 | small |
| Type:CLRole.two.sided.11 | non-gamified.Apprentice | 12 | −0.99 | 10.58 | 127.0 | 49.0 | −1.33 | 0.191 | 0.272 | small |
| Type:CLRole.two.sided.21 | ont-gamified.Apprentice | 12 | 0.40 | 14.42 | 173.0 | 49.0 | −1.33 | 0.191 | 0.272 | small |
| Type:CLRole.less.12 | non-gamified.Apprentice | 12 | −0.99 | 7.38 | 88.5 | 10.5 | −1.64 | 0.057 | 0.410 | medium |
| Type:CLRole.less.22 | ont-gamified.Master | 4 | 1.15 | 11.88 | 47.5 | 10.5 | −1.64 | 0.057 | 0.410 | medium |
| Type:CLRole.greater.12 | non-gamified.Apprentice | 12 | −0.99 | 7.38 | 88.5 | 10.5 | −1.64 | 0.952 | 0.410 | medium |
| Type:CLRole.greater.22 | ont-gamified.Master | 4 | 1.15 | 11.88 | 47.5 | 10.5 | −1.64 | 0.952 | 0.410 | medium |
| Type:CLRole.two.sided.12 | non-gamified.Apprentice | 12 | −0.99 | 7.38 | 88.5 | 10.5 | −1.64 | 0.110 | 0.410 | medium |
| Type:CLRole.two.sided.22 | ont-gamified.Master | 4 | 1.15 | 11.88 | 47.5 | 10.5 | −1.64 | 0.110 | 0.410 | medium |
| Type:CLRole.less.13 | non-gamified.Master | 2 | −0.37 | 5.00 | 10.0 | 7.0 | −0.91 | 0.209 | 0.244 | small |
| Type:CLRole.less.23 | ont-gamified.Apprentice | 12 | 0.40 | 7.92 | 95.0 | 7.0 | −0.91 | 0.209 | 0.244 | small |
| Type:CLRole.greater.13 | non-gamified.Master | 2 | −0.37 | 5.00 | 10.0 | 7.0 | −0.91 | 0.824 | 0.244 | small |
| Type:CLRole.greater.23 | ont-gamified.Apprentice | 12 | 0.40 | 7.92 | 95.0 | 7.0 | −0.91 | 0.824 | 0.244 | small |
| Type:CLRole.two.sided.13 | non-gamified.Master | 2 | −0.37 | 5.00 | 10.0 | 7.0 | −0.91 | 0.429 | 0.244 | small |
| Type:CLRole.two.sided.23 | ont-gamified.Apprentice | 12 | 0.40 | 7.92 | 95.0 | 7.0 | −0.91 | 0.429 | 0.244 | small |
| Type:CLRole.less.14 | non-gamified.Master | 2 | −0.37 | 1.50 | 3.0 | 0.0 | −1.85 | 0.067 | 0.756 | large |
| Type:CLRole.less.24 | ont-gamified.Master | 4 | 1.15 | 4.50 | 18.0 | 0.0 | −1.85 | 0.067 | 0.756 | large |
| Type:CLRole.greater.14 | non-gamified.Master | 2 | −0.37 | 1.50 | 3.0 | 0.0 | −1.85 | 1.000 | 0.756 | large |
| Type:CLRole.greater.24 | ont-gamified.Master | 4 | 1.15 | 4.50 | 18.0 | 0.0 | −1.85 | 1.000 | 0.756 | large |
| Type:CLRole.two.sided.14 | non-gamified.Master | 2 | −0.37 | 1.50 | 3.0 | 0.0 | −1.85 | 0.133 | 0.756 | large |
| Type:CLRole.two.sided.24 | ont-gamified.Master | 4 | 1.15 | 4.50 | 18.0 | 0.0 | −1.85 | 0.133 | 0.756 | large |
| Type:CLRole.less.15 | ont-gamified.Apprentice | 12 | 0.40 | 7.79 | 93.5 | 15.5 | −1.03 | 0.165 | 0.258 | small |
| Type:CLRole.less.25 | ont-gamified.Master | 4 | 1.15 | 10.62 | 42.5 | 15.5 | −1.03 | 0.165 | 0.258 | small |
| Type:CLRole.greater.15 | ont-gamified.Apprentice | 12 | 0.40 | 7.79 | 93.5 | 15.5 | −1.03 | 0.850 | 0.258 | small |
| Type:CLRole.greater.25 | ont-gamified.Master | 4 | 1.15 | 10.62 | 42.5 | 15.5 | −1.03 | 0.850 | 0.258 | small |

Table 3: *(continued)*

| | Group | N | Median | Mean.Ranks | Sum.Ranks | U | Z | p.value | r | magnitude |
|---|---|---|---|---|---|---|---|---|---|---|
| Type:CLRole.two.sided.15 | ont-gamified.Apprentice | 12 | 0.40 | 7.79 | 93.5 | 15.5 | −1.03 | 0.331 | 0.258 | small |
| Type:CLRole.two.sided.25 | ont-gamified.Master | 4 | 1.15 | 10.62 | 42.5 | 15.5 | −1.03 | 0.331 | 0.258 | small |