## Summary of nonparametric statistics analysis for the scores of Satisfaction in the second study for signed-up students

Table 1: Summary of Scheirer-Ray-Hare results for the scores of Satisfaction in the second study for signed-up students

|                  | Df | Sum Sq    | Н     | p.value | Sig |
|------------------|----|-----------|-------|---------|-----|
| Type             |    |           |       |         |     |
| Type:Type        | 1  | 39.253    | 0.139 | 0.710   |     |
| Type:CLRole      | 1  | 16.986    | 0.060 | 0.806   |     |
| Type:Type:CLRole | 1  | 190.331   | 0.672 | 0.412   |     |
| Type:Residuals   | 54 | 15885.931 |       |         |     |

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

Table 2: Full descriptive statistic of the pair wilcoxon analysis for the scores of Satisfaction in the second study for signed-up students

|                          | Group                    | N       | Median | Mean.Ranks | Sum.Ranks | U     | Z     | p.value | r     | magnitude              |
|--------------------------|--------------------------|---------|--------|------------|-----------|-------|-------|---------|-------|------------------------|
| Type.less.1              | non-gamified             | 34      | 4.33   | 30.19      | 1026.5    | 431.5 | 0.37  | 0.646   | 0.049 | none                   |
| Type.less.2              | ont-gamified             | $^{24}$ | 4.17   | 28.52      | 684.5     | 431.5 | 0.37  | 0.646   | 0.049 | none                   |
| Type.greater.1           | non-gamified             | 34      | 4.33   | 30.19      | 1026.5    | 431.5 | 0.37  | 0.357   | 0.049 | none                   |
| Type.greater.2           | ont-gamified             | $^{24}$ | 4.17   | 28.52      | 684.5     | 431.5 | 0.37  | 0.357   | 0.049 | none                   |
| Type.two.sided.1         | non-gamified             | 34      | 4.33   | 30.19      | 1026.5    | 431.5 | 0.37  | 0.715   | 0.049 | none                   |
| Type.two.sided.2         | ont-gamified             | $^{24}$ | 4.17   | 28.52      | 684.5     | 431.5 | 0.37  | 0.715   | 0.049 | none                   |
| Type:CLRole.less.1       | non-gamified.Apprentice  | 23      | 4.33   | 16.61      | 382.0     | 106.0 | -0.76 | 0.230   | 0.130 | small                  |
| Type:CLRole.less.2       | non-gamified.Master      | 11      | 4.67   | 19.36      | 213.0     | 106.0 | -0.76 | 0.230   | 0.130 | small                  |
| Type:CLRole.greater.1    | non-gamified.Apprentice  | 23      | 4.33   | 16.61      | 382.0     | 106.0 | -0.76 | 0.776   | 0.130 | $\operatorname{small}$ |
| Type:CLRole.greater.2    | non-gamified.Master      | 11      | 4.67   | 19.36      | 213.0     | 106.0 | -0.76 | 0.776   | 0.130 | small                  |
| Type:CLRole.two.sided.1  | non-gamified.Apprentice  | 23      | 4.33   | 16.61      | 382.0     | 106.0 | -0.76 | 0.460   | 0.130 | small                  |
| Type:CLRole.two.sided.2  | non-gamified.Master      | 11      | 4.67   | 19.36      | 213.0     | 106.0 | -0.76 | 0.460   | 0.130 | small                  |
| Type:CLRole.less.11      | non-gamified.Apprentice  | 23      | 4.33   | 19.74      | 454.0     | 178.0 | -0.17 | 0.435   | 0.028 | none                   |
| Type:CLRole.less.21      | ont-gamified. Apprentice | 16      | 4.17   | 20.38      | 326.0     | 178.0 | -0.17 | 0.435   | 0.028 | none                   |
| Type:CLRole.greater.11   | non-gamified.Apprentice  | 23      | 4.33   | 19.74      | 454.0     | 178.0 | -0.17 | 0.570   | 0.028 | none                   |
| Type:CLRole.greater.21   | ont-gamified. Apprentice | 16      | 4.17   | 20.38      | 326.0     | 178.0 | -0.17 | 0.570   | 0.028 | none                   |
| Type:CLRole.two.sided.11 | non-gamified.Apprentice  | 23      | 4.33   | 19.74      | 454.0     | 178.0 | -0.17 | 0.871   | 0.028 | none                   |
| Type:CLRole.two.sided.21 | ont-gamified. Apprentice | 16      | 4.17   | 20.38      | 326.0     | 178.0 | -0.17 | 0.871   | 0.028 | none                   |
| Type:CLRole.less.12      | non-gamified.Apprentice  | 23      | 4.33   | 16.41      | 377.5     | 101.5 | 0.43  | 0.668   | 0.077 | none                   |
| Type:CLRole.less.22      | ont-gamified.Master      | 8       | 4.33   | 14.81      | 118.5     | 101.5 | 0.43  | 0.668   | 0.077 | none                   |
| Type:CLRole.greater.12   | non-gamified.Apprentice  | 23      | 4.33   | 16.41      | 377.5     | 101.5 | 0.43  | 0.340   | 0.077 | none                   |
| Type:CLRole.greater.22   | ont-gamified.Master      | 8       | 4.33   | 14.81      | 118.5     | 101.5 | 0.43  | 0.340   | 0.077 | none                   |
| Type:CLRole.two.sided.12 | non-gamified.Apprentice  | 23      | 4.33   | 16.41      | 377.5     | 101.5 | 0.43  | 0.680   | 0.077 | none                   |
| Type:CLRole.two.sided.22 | ont-gamified.Master      | 8       | 4.33   | 14.81      | 118.5     | 101.5 | 0.43  | 0.680   | 0.077 | none                   |
| Type:CLRole.less.13      | non-gamified.Master      | 11      | 4.67   | 14.73      | 162.0     | 96.0  | 0.40  | 0.656   | 0.076 | none                   |
| Type:CLRole.less.23      | ont-gamified.Apprentice  | 16      | 4.17   | 13.50      | 216.0     | 96.0  | 0.40  | 0.656   | 0.076 | none                   |
| Type:CLRole.greater.13   | non-gamified.Master      | 11      | 4.67   | 14.73      | 162.0     | 96.0  | 0.40  | 0.353   | 0.076 | none                   |
| Type:CLRole.greater.23   | ont-gamified.Apprentice  | 16      | 4.17   | 13.50      | 216.0     | 96.0  | 0.40  | 0.353   | 0.076 | none                   |
| Type:CLRole.two.sided.13 | non-gamified.Master      | 11      | 4.67   | 14.73      | 162.0     | 96.0  | 0.40  | 0.706   | 0.076 | none                   |
| Type:CLRole.two.sided.23 | ont-gamified.Apprentice  | 16      | 4.17   | 13.50      | 216.0     | 96.0  | 0.40  | 0.706   | 0.076 | none                   |
| Type:CLRole.less.14      | non-gamified.Master      | 11      | 4.67   | 11.09      | 122.0     | 56.0  | 1.00  | 0.841   | 0.229 | $\operatorname{small}$ |
| Type:CLRole.less.24      | ont-gamified.Master      | 8       | 4.33   | 8.50       | 68.0      | 56.0  | 1.00  | 0.841   | 0.229 | $\operatorname{small}$ |
| Type:CLRole.greater.14   | non-gamified.Master      | 11      | 4.67   | 11.09      | 122.0     | 56.0  | 1.00  | 0.169   | 0.229 | small                  |
| Type:CLRole.greater.24   | ont-gamified.Master      | 8       | 4.33   | 8.50       | 68.0      | 56.0  | 1.00  | 0.169   | 0.229 | small                  |
| Type:CLRole.two.sided.14 | non-gamified.Master      | 11      | 4.67   | 11.09      | 122.0     | 56.0  | 1.00  | 0.337   | 0.229 | $\operatorname{small}$ |
| Type:CLRole.two.sided.24 | ont-gamified.Master      | 8       | 4.33   | 8.50       | 68.0      | 56.0  | 1.00  | 0.337   | 0.229 | $\operatorname{small}$ |
| Type:CLRole.less.15      | ont-gamified.Apprentice  | 16      | 4.17   | 12.78      | 204.5     | 68.5  | 0.28  | 0.613   | 0.057 | none                   |
| Type:CLRole.less.25      | ont-gamified.Master      | 8       | 4.33   | 11.94      | 95.5      | 68.5  | 0.28  | 0.613   | 0.057 | none                   |
| Type:CLRole.greater.15   | ont-gamified.Apprentice  | 16      | 4.17   | 12.78      | 204.5     | 68.5  | 0.28  | 0.399   | 0.057 | none                   |
| Type:CLRole.greater.25   | ont-gamified.Master      | 8       | 4.33   | 11.94      | 95.5      | 68.5  | 0.28  | 0.399   | 0.057 | none                   |

## Table 2: (continued)

|                          | Group                   | N  | Median | Mean.Ranks | Sum.Ranks | U    | Z    | p.value | r     | magnitude |
|--------------------------|-------------------------|----|--------|------------|-----------|------|------|---------|-------|-----------|
| Type:CLRole.two.sided.15 | ont-gamified.Apprentice | 16 | 4.17   | 12.78      | 204.5     | 68.5 | 0.28 | 0.798   | 0.057 | none      |
| Type:CLRole.two.sided.25 | ont-gamified.Master     | 8  | 4.33   | 11.94      | 95.5      | 68.5 | 0.28 | 0.798   | 0.057 | none      |