

Analysis Report

This report is structured as follows.

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Sample Characterization

This first table shows the frequency of each demographic variables included in the dataset.

| Category | Level | Count | Percentage |
|-------------------------------|-------------|-------|------------|
| Gender_identity | 1 | 16 | 32.7 |
| Gender_identity | 2 | 33 | 67.3 |
| In_which_faculty_do_you_study | 1 | 19 | 38.8 |
| In_which_faculty_do_you_study | 2 | 6 | 12.2 |
| In_which_faculty_do_you_study | 3 | 4 | 8.2 |
| In_which_faculty_do_you_study | 4 | 5 | 10.2 |
| In_which_faculty_do_you_study | 5 | 15 | 30.6 |
| categorized_age | 19-21 | 10 | 20.4 |
| categorized_age | 21-27 | 31 | 63.3 |
| categorized_age | 28_or_older | 8 | 16.3 |

Descriptive Statistics ó Organization

The following sections present the proportion of participants (relative to each group) that had each element of the STAR framework present on each session. For instance, the proportion of participants of the control group that had the Action element present on session 1 for Organization was 96% and decreased to 88% on Session 2. A substantial difference is observed for the Result dimension. The control group increased from 29% to 33% but the experimental group increased from 20% to 80%.

| Session | Group | Variable | Level | Count | Percentage |
|---------|--------------|-----------|-------|-------|------------|
| 1 | Control | Action | 0 | 1 | 4% |
| 1 | Control | Action | 1 | 23 | 96% |
| 2 | Control | Action | 0 | 3 | 13% |
| 2 | Control | Action | 1 | 21 | 88% |
| 1 | Experimental | Action | 0 | 7 | 28% |
| 1 | Experimental | Action | 1 | 18 | 72% |
| 2 | Experimental | Action | 0 | 3 | 12% |
| 2 | Experimental | Action | 1 | 22 | 88% |
| 1 | Control | Result | 0 | 17 | 71% |
| 1 | Control | Result | 1 | 7 | 29% |
| 2 | Control | Result | 0 | 16 | 67% |
| 2 | Control | Result | 1 | 8 | 33% |
| 1 | Experimental | Result | 0 | 20 | 80% |
| 1 | Experimental | Result | 1 | 5 | 20% |
| 2 | Experimental | Result | 0 | 5 | 20% |
| 2 | Experimental | Result | 1 | 20 | 80% |
| 1 | Control | Situation | 0 | 3 | 13% |
| 1 | Control | Situation | 1 | 21 | 88% |
| 2 | Control | Situation | 0 | 2 | 8% |
| 2 | Control | Situation | 1 | 22 | 92% |

| | | | | | |
|---|--------------|-----------|---|----|------|
| 1 | Experimental | Situation | 0 | 0 | 0% |
| 1 | Experimental | Situation | 1 | 25 | 100% |
| 2 | Experimental | Situation | 0 | 0 | 0% |
| 2 | Experimental | Situation | 1 | 25 | 100% |
| 1 | Control | Task | 0 | 6 | 25% |
| 1 | Control | Task | 1 | 18 | 75% |
| 2 | Control | Task | 0 | 4 | 17% |
| 2 | Control | Task | 1 | 20 | 83% |
| 1 | Experimental | Task | 0 | 6 | 24% |
| 1 | Experimental | Task | 1 | 19 | 76% |
| 2 | Experimental | Task | 0 | 1 | 4% |
| 2 | Experimental | Task | 1 | 24 | 96% |

Descriptive Statistics ó Stress

For Stress, results are similar. The greatest change was observed on the experimental group and the Result dimension, which went from 28% to 100%, while the control group increased from 25% to 50%.

| Session | Group | Variable | Level | Count | Percentage |
|---------|--------------|-----------|-------|-------|------------|
| 1 | Control | Action | 0 | 0 | 0% |
| 1 | Control | Action | 1 | 24 | 100% |
| 2 | Control | Action | 0 | 3 | 13% |
| 2 | Control | Action | 1 | 21 | 88% |
| 1 | Experimental | Action | 0 | 1 | 4% |
| 1 | Experimental | Action | 1 | 24 | 96% |
| 2 | Experimental | Action | 0 | 1 | 4% |
| 2 | Experimental | Action | 1 | 24 | 96% |
| 1 | Control | Result | 0 | 18 | 75% |
| 1 | Control | Result | 1 | 6 | 25% |
| 2 | Control | Result | 0 | 12 | 50% |
| 2 | Control | Result | 1 | 12 | 50% |
| 1 | Experimental | Result | 0 | 18 | 72% |
| 1 | Experimental | Result | 1 | 7 | 28% |
| 2 | Experimental | Result | 0 | 0 | 0% |
| 2 | Experimental | Result | 1 | 25 | 100% |
| 1 | Control | Situation | 0 | 3 | 13% |
| 1 | Control | Situation | 1 | 21 | 88% |
| 2 | Control | Situation | 0 | 1 | 4% |
| 2 | Control | Situation | 1 | 23 | 96% |
| 1 | Experimental | Situation | 0 | 1 | 4% |
| 1 | Experimental | Situation | 1 | 24 | 96% |
| 2 | Experimental | Situation | 0 | 0 | 0% |
| 2 | Experimental | Situation | 1 | 25 | 100% |
| 1 | Control | Task | 0 | 10 | 42% |

| | | | | | |
|---|--------------|------|---|----|-----|
| 1 | Control | Task | 1 | 14 | 58% |
| 2 | Control | Task | 0 | 9 | 38% |
| 2 | Control | Task | 1 | 15 | 63% |
| 1 | Experimental | Task | 0 | 3 | 12% |
| 1 | Experimental | Task | 1 | 22 | 88% |
| 2 | Experimental | Task | 0 | 2 | 8% |
| 2 | Experimental | Task | 1 | 23 | 92% |

Descriptive Statistics ó Teamwork

Finally, Teamwork also shows a great discrepancy on the Result dimension on the experimental group (36% to 88%), with the control group going from 54% to 71%.

| Session | Group | Variable | Level | Count | Percentage |
|---------|--------------|-----------|-------|-------|------------|
| 1 | Control | Action | 0 | 2 | 8% |
| 1 | Control | Action | 1 | 22 | 92% |
| 2 | Control | Action | 0 | 0 | 0% |
| 2 | Control | Action | 1 | 24 | 100% |
| 1 | Experimental | Action | 0 | 4 | 16% |
| 1 | Experimental | Action | 1 | 21 | 84% |
| 2 | Experimental | Action | 0 | 1 | 4% |
| 2 | Experimental | Action | 1 | 24 | 96% |
| 1 | Control | Result | 0 | 11 | 46% |
| 1 | Control | Result | 1 | 13 | 54% |
| 2 | Control | Result | 0 | 7 | 29% |
| 2 | Control | Result | 1 | 17 | 71% |
| 1 | Experimental | Result | 0 | 16 | 64% |
| 1 | Experimental | Result | 1 | 9 | 36% |
| 2 | Experimental | Result | 0 | 3 | 12% |
| 2 | Experimental | Result | 1 | 22 | 88% |
| 1 | Control | Situation | 0 | 2 | 8% |
| 1 | Control | Situation | 1 | 22 | 92% |
| 2 | Control | Situation | 0 | 2 | 8% |
| 2 | Control | Situation | 1 | 22 | 92% |
| 1 | Experimental | Situation | 0 | 1 | 4% |
| 1 | Experimental | Situation | 1 | 24 | 96% |
| 2 | Experimental | Situation | 0 | 0 | 0% |
| 2 | Experimental | Situation | 1 | 25 | 100% |
| 1 | Control | Task | 0 | 13 | 54% |
| 1 | Control | Task | 1 | 11 | 46% |
| 2 | Control | Task | 0 | 4 | 17% |
| 2 | Control | Task | 1 | 20 | 83% |
| 1 | Experimental | Task | 0 | 9 | 36% |
| 1 | Experimental | Task | 1 | 16 | 64% |

| | | | | | |
|---|--------------|------|---|----|-----|
| 2 | Experimental | Task | 0 | 5 | 20% |
| 2 | Experimental | Task | 1 | 20 | 80% |

Generalized Linear Model ó Organization

Generalized Linear Models (GLMs) with a logit link function were employed to address the binary nature (1 or 0) of the dependent variables, which included 'Situation', 'Task', 'Action', and 'Result'. The choice of GLMs was driven by the non-normal distribution of these variables. Initial model attempts incorporated demographic covariates such as age, gender, and faculty. However, these models faced convergence issues, likely due to insufficient sample sizes within certain demographic subsets. Consequently, the final models were fitted without including these covariates.

The table below shows the results of the model. To interpret the table, consider the following:

- ◁ The 'Estimate' column reflects the log odds ratio for each term in the model.
- ◁ The 'Std. Error' provides an estimate of the standard deviation of the sampling distribution of the estimate, which informs about the precision of the estimate.
- ◁ The 'Statistic' is the test statistic used to determine the significance of each predictor, essentially representing the ratio of the estimate to its standard error.
- ◁ The 'P-value' indicates the probability of observing the given result, or one more extreme, under the null hypothesis. For instance, the p-value of 0.043 for the intercept in the 'Action' model suggests that there is a 4.3% probability of observing such an effect size or larger if the intercept truly had no effect.

| outcome_var | term | estimate | std.error | statistic | p.value |
|-------------|---------------------------|----------|-----------|-----------|---------|
| Situation | (Intercept) | 1.494 | 1.438 | 1.039 | 0.299 |
| Situation | GroupExperimental | 19.072 | 7929.263 | 0.002 | 0.998 |
| Situation | Session | 0.452 | 0.963 | 0.470 | 0.639 |
| Situation | GroupExperimental:Session | -0.452 | 5014.906 | 0.000 | 1.000 |
| Task | (Intercept) | 0.588 | 1.090 | 0.539 | 0.590 |
| Task | GroupExperimental | -1.460 | 1.763 | -0.829 | 0.407 |
| Task | Session | 0.511 | 0.723 | 0.707 | 0.480 |
| Task | GroupExperimental:Session | 1.515 | 1.335 | 1.134 | 0.257 |
| Action | (Intercept) | 4.325 | 2.134 | 2.027 | 0.043 |
| Action | GroupExperimental | -4.429 | 2.393 | -1.851 | 0.064 |
| Action | Session | -1.190 | 1.193 | -0.997 | 0.319 |
| Action | GroupExperimental:Session | 2.238 | 1.415 | 1.582 | 0.114 |
| Result | (Intercept) | -1.081 | 0.997 | -1.085 | 0.278 |
| Result | GroupExperimental | -3.077 | 1.498 | -2.054 | 0.040 |
| Result | Session | 0.194 | 0.624 | 0.311 | 0.756 |
| Result | GroupExperimental:Session | 2.578 | 0.943 | 2.734 | 0.006 |

The interaction terms (GroupExperimental:Session) examine how the effect of one predictor variable on the outcome changes at different levels of another predictor variable. They are crucial for understanding if the impact of one factor depends on another.

In the table above, we can see that the increase on the percentage of participants that had the Result element present is significantly different between Control and Experimental groups. In other hands, the intervention applied to the experimental group had a significant effect to increase the percentage of people that had the Result element, relative to the Control group.

The graph below shows bar plots illustrating these differences in light of the STAR framework. The only significant interaction effect was observed for Result.

The result for Action approached significance indicating a possible trend ($p = 0.114$).

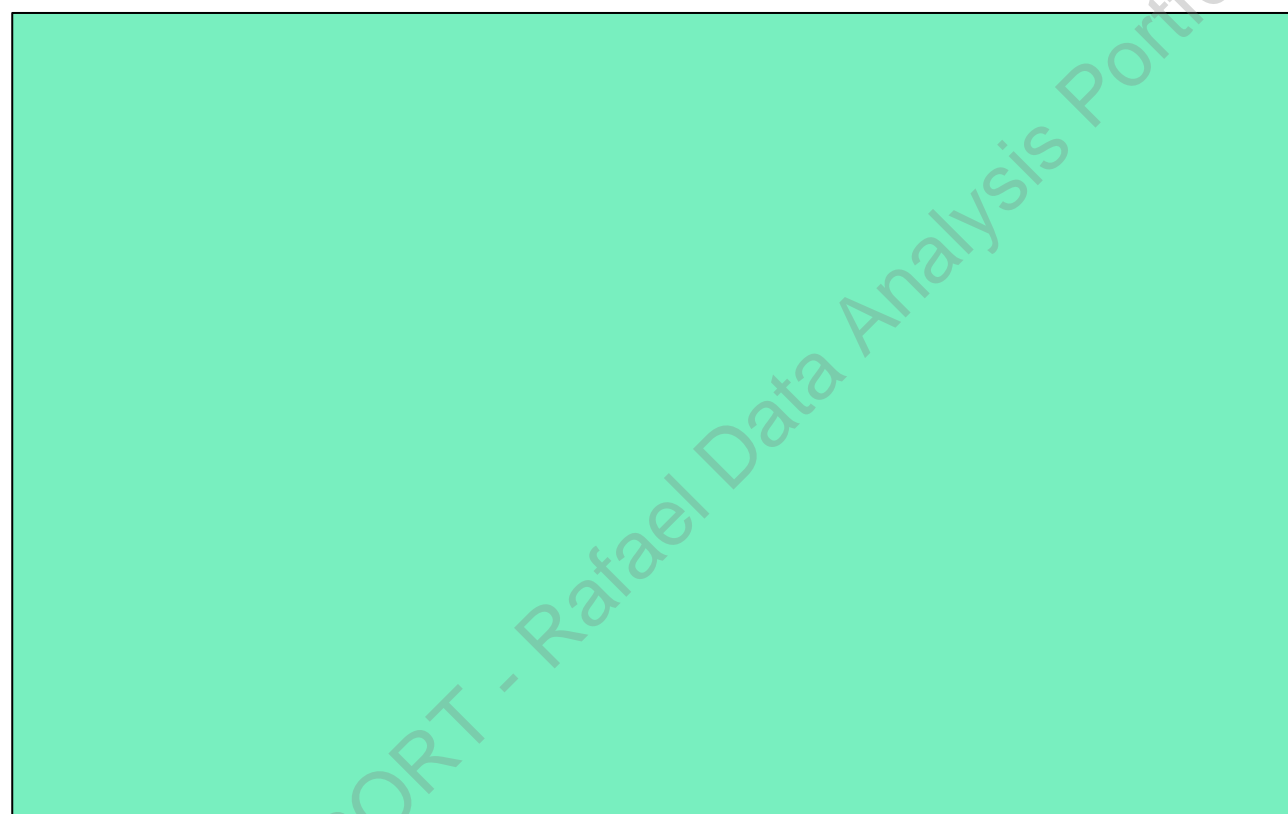


Generalized Linear Model - Stress

For the stress questions, no significant interaction effect was present.

| outcome_var | term | estimate | std.error | statistic | p.value |
|-------------|---------------------------|----------|-----------|-----------|---------|
| Situation | (Intercept) | 0.756 | 1.602 | 0.472 | 0.637 |
| Situation | GroupExperimental | -13.966 | 2150.804 | -0.006 | 0.995 |
| Situation | Session | 1.190 | 1.193 | 0.997 | 0.319 |
| Situation | GroupExperimental:Session | 15.198 | 2150.803 | 0.007 | 0.994 |
| Task | (Intercept) | 0.162 | 0.929 | 0.174 | 0.862 |
| Task | GroupExperimental | 1.380 | 1.709 | 0.808 | 0.419 |

| | | | | | |
|--------|---------------------------|---------|----------|--------|-------|
| Task | Session | 0.174 | 0.591 | 0.295 | 0.768 |
| Task | GroupExperimental:Session | 0.276 | 1.128 | 0.244 | 0.807 |
| Action | (Intercept) | 37.186 | 4390.307 | 0.008 | 0.993 |
| Action | GroupExperimental | -34.008 | 4390.308 | -0.008 | 0.994 |
| Action | Session | -17.620 | 2195.154 | -0.008 | 0.994 |
| Action | GroupExperimental:Session | 17.620 | 2195.154 | 0.008 | 0.994 |
| Result | (Intercept) | -2.197 | 1.027 | -2.139 | 0.032 |
| Result | GroupExperimental | -18.258 | 1304.528 | -0.014 | 0.989 |
| Result | Session | 1.099 | 0.624 | 1.762 | 0.078 |
| Result | GroupExperimental:Session | 18.412 | 1304.528 | 0.014 | 0.989 |



Generalized Linear Model - Teamwork

For the Teamwork questions, the Result dimension approached significance with a p-value of 0.054 for the interaction term. The percentage of participants coded as 1 for Result increased from 27% to 35% in the control group and from 18% to 44% in the experimental group (a larger difference).

| outcome_var | term | estimate | std.error | statistic | p.value |
|-------------|---------------------------|----------|-----------|-----------|---------|
| Situation | (Intercept) | 2.398 | 1.651 | 1.452 | 0.147 |
| Situation | GroupExperimental | -15.608 | 2150.804 | -0.007 | 0.994 |
| Situation | Session | 0.000 | 1.044 | 0.000 | 1.000 |
| Situation | GroupExperimental:Session | 16.388 | 2150.803 | 0.008 | 0.994 |
| Task | (Intercept) | -1.944 | 0.986 | -1.972 | 0.049 |
| Task | GroupExperimental | 1.708 | 1.384 | 1.234 | 0.217 |
| Task | Session | 1.776 | 0.684 | 2.597 | 0.009 |
| Task | GroupExperimental:Session | -0.966 | 0.944 | -1.023 | 0.306 |

| | | | | | |
|--------|---------------------------|---------|----------|--------|-------|
| Action | (Intercept) | -14.770 | 2195.154 | -0.007 | 0.995 |
| Action | GroupExperimental | 14.909 | 2195.155 | 0.007 | 0.995 |
| Action | Session | 17.168 | 2195.154 | 0.008 | 0.994 |
| Action | GroupExperimental:Session | -15.648 | 2195.154 | -0.007 | 0.994 |
| Result | (Intercept) | -0.553 | 0.934 | -0.592 | 0.554 |
| Result | GroupExperimental | -2.590 | 1.395 | -1.857 | 0.063 |
| Result | Session | 0.720 | 0.608 | 1.185 | 0.236 |
| Result | GroupExperimental:Session | 1.848 | 0.960 | 1.924 | 0.054 |

