Analysis Report

This report is structured as follows.

Contents

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 – 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 Orgnization 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 – 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 – 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 – 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.

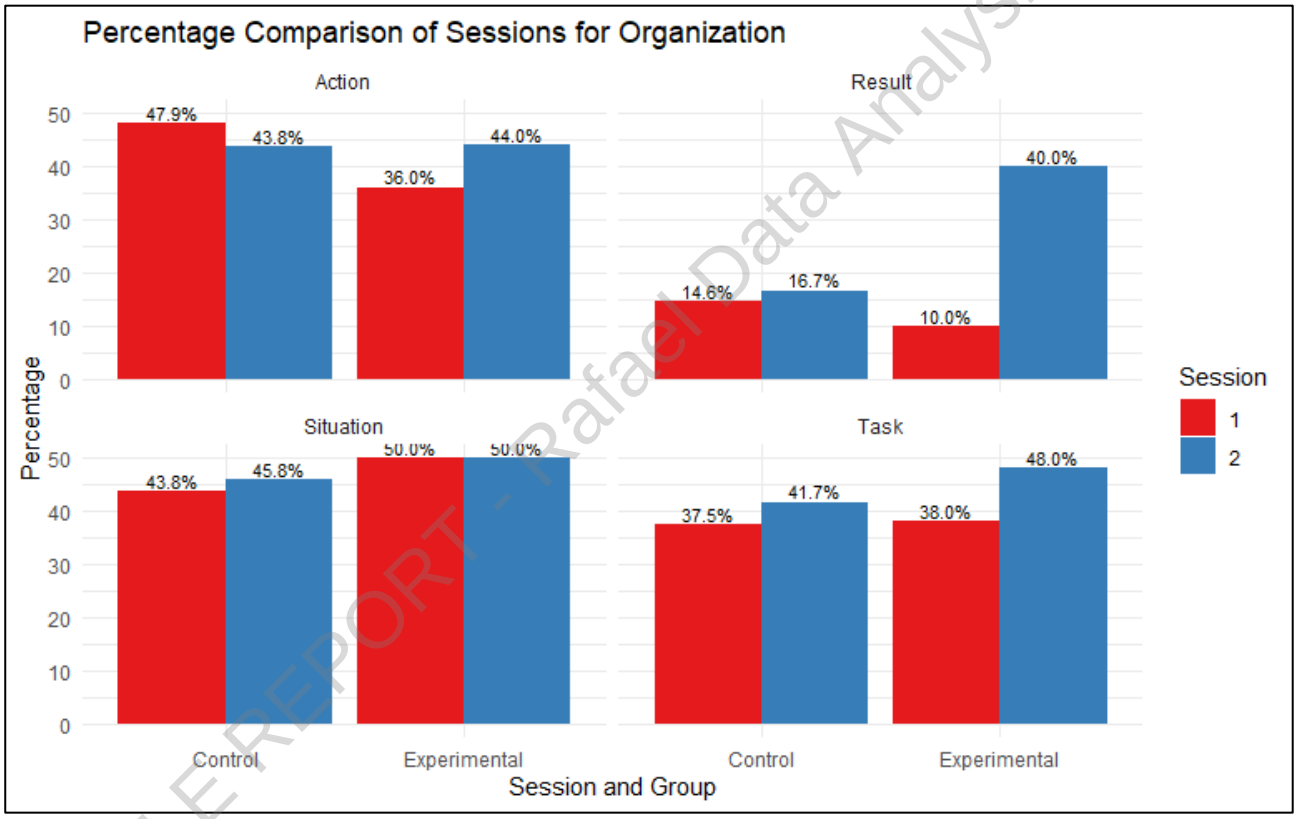
outcome_var	term	estimate	std.error	statistic	p.value
Situation	(Intercept)	1.494	1.438	1.039	0.299
Situation	GroupExperimental	19.072	7929.263	0.002	0.998
Situation	Session	0.452	0.963	0.470	0.639
Situation	GroupExperimental:Session	-0.452	5014.906	0.000	1.000
Task	(Intercept)	0.588	1.090	0.539	0.590
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).

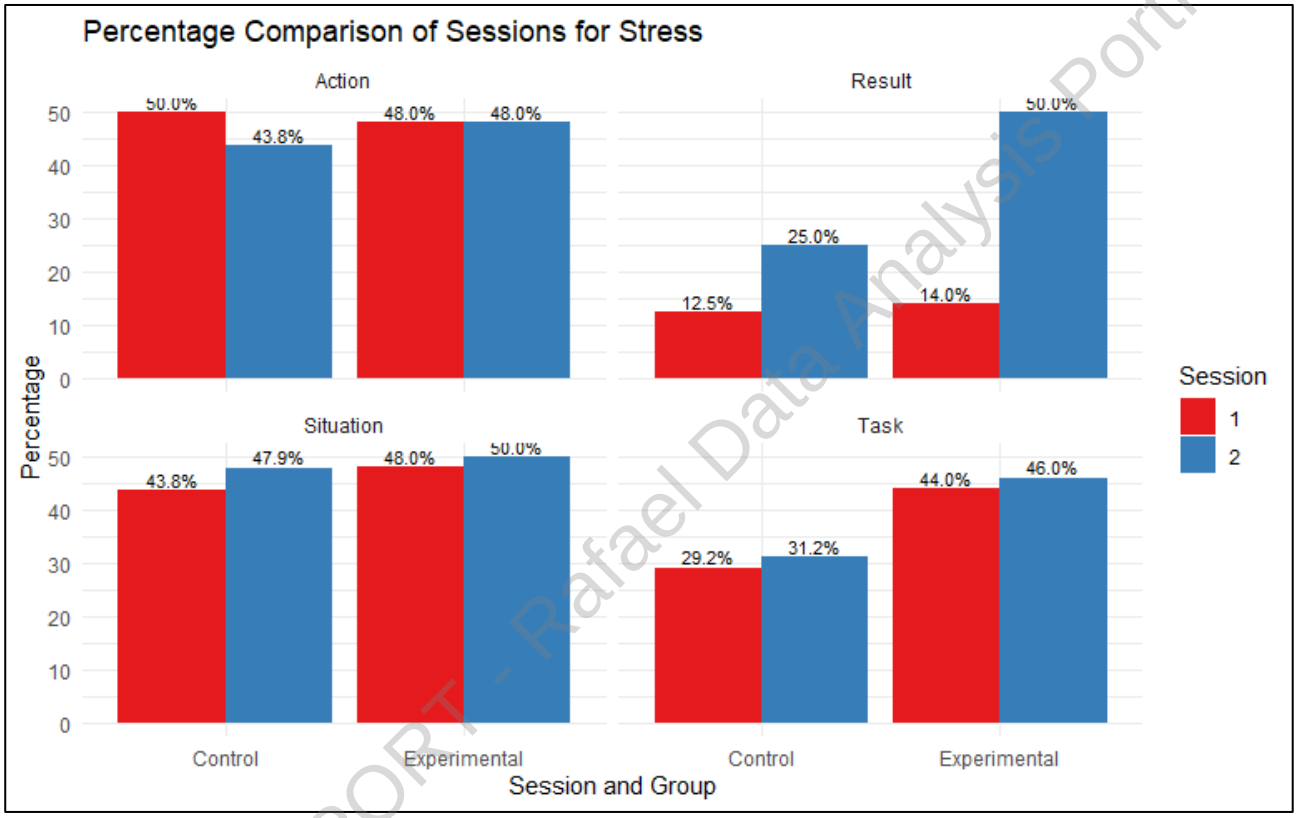


Generalized Linear Model - Stress

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