Augmented In-Person Stats

The following pages include the full statistical test result tables for the in-person deployment (i.e., third experiment) covered in the manuscript body. This information includes the full post hoc testing results.

Results

ANOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANOVA - Friendliness						
Condition	1.84	2	0.922	1.46	0.243	0.056
Residuals	30.98	49	0.632			

[3]

Assumption Checks

F	df1	df2	p
Homogeneity of Variances Test (Levene's)			
0.675	2	49	0.514

[3]

Statistic	p
Normality Test (Shapiro-Wilk)	
0.950	0.0285

ANOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANOVA - Service						
Condition	1.11	2	0.557	0.657	0.523	0.026
Residuals	41.56	49	0.848			

[3]

Assumption Checks

F	df1	df2	p
Homogeneity of Variances Test (Levene's)			
1.78	2	49	0.180

[3]

Statistic	p
Normality Test (Shapiro-Wilk)	
0.943	0.0143

ANOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANOVA - Funny						
Condition	13.5	2	6.761	8.68	5.93e-4	0.262
Residuals	38.2	49	0.779			

[3]

Assumption Checks

F	df1	df2	p
Homogeneity of Variances Test (Levene's)			
0.0553	2	49	0.946

[3]

Statistic	p
Normality Test (Shapiro-Wilk)	
0.840	6.07e-6

Post Hoc Tests

Comparison								
Condition		**Condition**	**Mean Difference**	**SE**	**df**	**t**	p_{tukey}	**Cohen's d**
Post Hoc Comparisons - Condition								
Explicit	-	**Non-explicit**	2.11e-15	0.303	49.0	6.97e-15	1.00000	1.78e-15
	-	**No Speech**	1.07	0.298	49.0	3.59	0.00216	1.21
Non-explicit	-	**No Speech**	1.07	0.298	49.0	3.59	0.00216	1.21

Note. Comparisons are based on estimated marginal means

[4]

Estimated Marginal Means

Condition

			95% Confidence Interval	
Condition	**Mean**	**SE**	**Lower**	**Upper**
Estimated Marginal Means - Condition				
Explicit	4.29	0.214	3.86	4.72
Non-explicit	4.29	0.214	3.86	4.72
No Speech	3.22	0.208	2.80	3.64

[4]

ANOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANOVA - Overall						
Condition	0.118	2	0.0589	0.108	0.898	0.004
Residuals	26.709	49	0.5451			

[3]

Assumption Checks

F	df1	df2	p
Homogeneity of Variances Test (Levene's)			
3.76	2	49	0.0303

[3]

Statistic	p
Normality Test (Shapiro-Wilk)	
0.850	1.13e-5

One-Way ANOVA (Non-parametric)

	χ^2	df	p	ε^2
Kruskal-Wallis				
Laughed	11.329	2	0.00347	0.22214
Anthropomorphized	3.282	2	0.19375	0.06436
Related	18.607	2	9.11e-5	0.36485
Discomforted	0.244	2	0.88514	0.00478

Dwass-Steel-Critchlow-Fligner pairwise comparisons

		W	p
Pairwise comparisons - Laughed			
Explicit	**Non-explicit**	1.05	0.73882
Explicit	**No Speech**	4.47	0.00446
Non-explicit	**No Speech**	3.54	0.03312

		W	p
Pairwise comparisons - Anthropomorphized			
Explicit	**Non-explicit**	2.55	0.168
Explicit	**No Speech**	1.15	0.693
Non-explicit	**No Speech**	-1.48	0.548

		W	p
Pairwise comparisons - Related			
Explicit	**Non-explicit**	2.25	0.2487
Explicit	**No Speech**	5.90	8.91e-5
Non-explicit	**No Speech**	4.04	0.0119

		W	p
Pairwise comparisons - Discomforted			
Explicit	**Non-explicit**	-0.492	0.936
Explicit	**No Speech**	-0.669	0.884
Non-explicit	**No Speech**	-0.170	0.992

ANCOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANCOVA - Friendliness						
Condition	0.524	2	0.262	0.433	0.6512	0.017
Age	1.907	1	1.907	3.149	0.0826	0.061
STEM	0.149	1	0.149	0.246	0.6225	0.005
Robotics Experience	0.732	1	0.732	1.209	0.2772	0.023
Residuals	27.862	46	0.606			

[3]

ANCOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANCOVA - Service						
Condition	0.7848	2	0.3924	0.4905	0.6155	0.019
Age	0.0570	1	0.0570	0.0712	0.7908	0.001
STEM	3.0549	1	3.0549	3.8181	0.0568	0.075
Robotics Experience	0.1827	1	0.1827	0.2283	0.6350	0.004
Residuals	36.8043	46	0.8001			

[3]

ANCOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANCOVA - Funny						
Condition	12.605	2	6.302	7.708	0.00130	0.247
Age	0.123	1	0.123	0.151	0.69943	0.002
STEM	0.425	1	0.425	0.520	0.47457	0.008
Robotics Experience	0.260	1	0.260	0.318	0.57578	0.005
Residuals	37.611	46	0.818			

[3]

ANCOVA

	Sum of Squares	df	Mean Square	F	p	η^2
ANCOVA - Overall						
Condition	0.151	2	0.0757	0.146	0.865	0.006
Age	1.039	1	1.0390	1.998	0.164	0.039
STEM	0.902	1	0.9017	1.734	0.194	0.034
Robotics Experience	0.336	1	0.3362	0.647	0.425	0.013
Residuals	23.916	46	0.5199			

[3]

References

[1] The jamovi project (2024). *jamovi*. (Version 2.6) [Computer Software]. Retrieved from https://www.jamovi.org.

[2] R Core Team (2024). *R: A Language and environment for statistical computing*. (Version 4.4) [Computer software]. Retrieved from https://cran.r-project.org. (R packages retrieved from CRAN snapshot 2024-08-07).

[3] Fox, J., & Weisberg, S. (2023). *car: Companion to Applied Regression*. [R package]. Retrieved from https://cran.r-project.org/package=car.

[4] Lenth, R. (2023). *emmeans: Estimated Marginal Means, aka Least-Squares Means*. [R package]. Retrieved from https://cran.r-project.org/package=emmeans.