Strategy and Comms Coding Analyses (N=40)

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1 PCA on Strategy Variables

1.1 Correlations between variables

Table 1
Correlations between variables

	1	2	3	4	5
1. MidIns_Duration					
2. MidNon_Duration	-.05				
3. NormIns_Duration	.32*	-.15			
4. NormNon_Duration	-.18	-.09	-.18		
5. OppIns_Duration	.39*	-.07	.61**	-.18	
6. OppNon_Duration	-.35*	.01	-.56**	.12	-.62**

1.2 KMO and Bartlett's Test of Spherecity

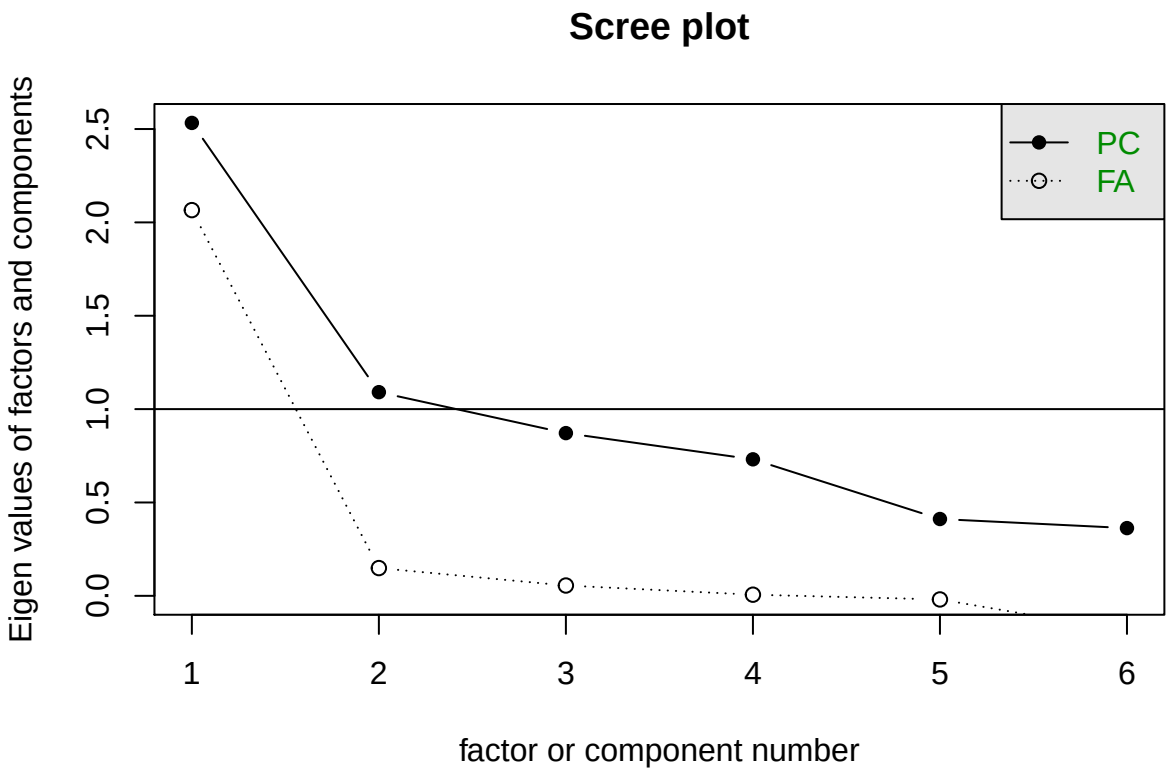
Table 2
KMO: Measure of sampling adequacy

KMO
0.76

Table 3
Bartletts test of spherecity

chisq	p.value	df
48	<.001	15

1.3 Scree plot



1.4 PCA results

Table 4
Variance accounted for by components

component	eigen	prop_var	cum_var	rotation_SS_load
1	2.53	0.42	0.42	2.53
2	1.09	0.18	0.6	1.09
3	0.87			
4	0.73			
5	0.41			
6	0.36			

Table 5
Pattern Matrix

var	PC1	PC2	h2
OppIns_Duration	0.86		0.73
NormIns_Duration	0.83		0.68
MidIns_Duration	0.6		0.38
OppNon_Duration	-0.81		0.65
MidNon_Duration		0.83	0.69
NormNon_Duration		-0.63	0.49

PC1 = hesitant driving
PC2 = risky driving

2 PCA on Communication Variables

Due to the small sample size (N=40) we will conduct PCA separately for positive and negative factors.

2.1 Reliability for each communication variable

Table 6
Reliability

Variable	alpha
co_info_harm	0.72
co_info_help	0.86
co_instruct_harm	0.61
co_instruct_help	0.91
co_question	0.79
co_redundant	0.72
drive_frust	0.91
drive_informs	0.82
drive_question	0.81

2.2 PCA for positive communication variables only

2.2.1 Correlations between variables

Table 7
Correlations between variables

	1	2	3	4
1. co_info_help_overall				
2. co_instruct_help_overall	.54**			
3. co_question_overall	.52**	.60**		
4. drive_question_overall	.65**	.56**	.40*	
5. drive_informs_overall	.67**	.54**	.69**	.48**

2.2.2 KMO and Bartlett's Test of Spherecity

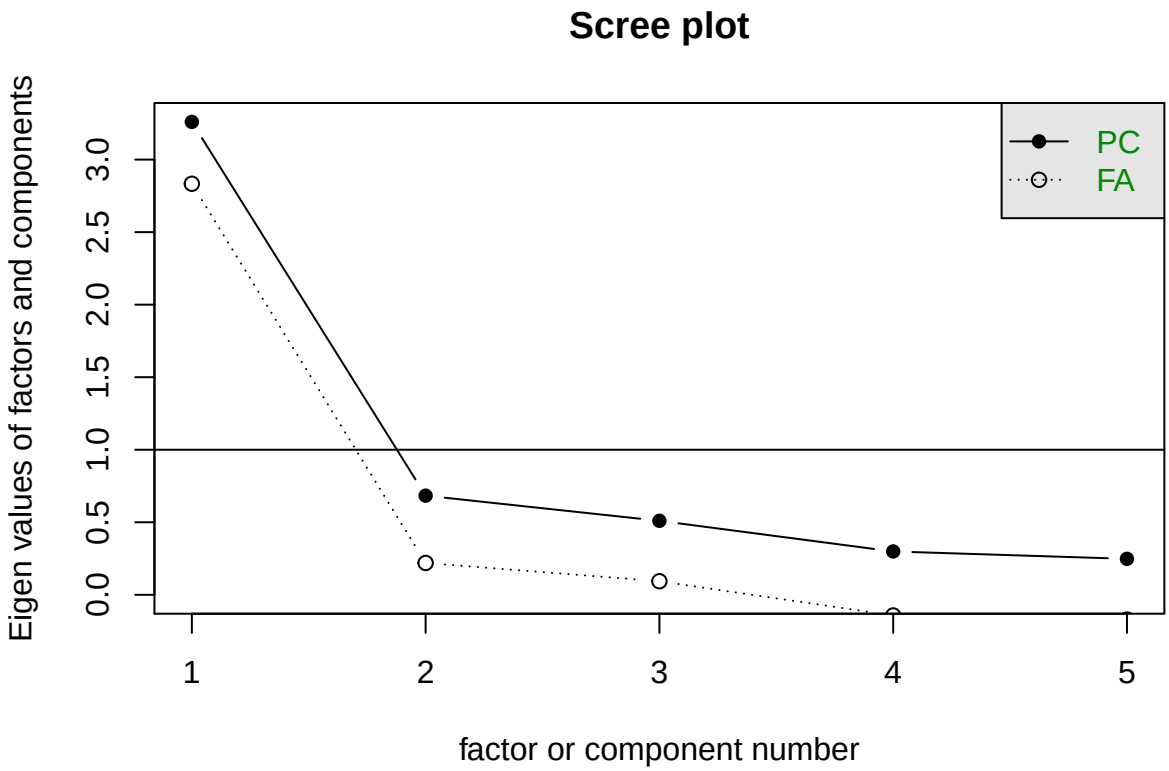
Table 8
KMO: Measure of sampling adequacy

KMO
0.79

Table 9
Bartletts test of spherecity

chisq	p.value	df
90	<.001	10

2.2.3 Scree plot



2.2.4 PCA results

Table 10
Variance accounted for by components

component	eigen	prop_var	cum_var	rotation_SS_load
1	3.26	0.65	0.65	3.26
2	0.68			
3	0.51			
4	0.30			
5	0.25			

Table 11
Pattern Matrix

var	PC1	h2
co_info_help_overall	0.84	0.71
drive_informs_overall	0.84	0.70
co_instruct_help_overall	0.80	0.64
co_question_overall	0.80	0.64
drive_question_overall	0.76	0.58

PC1 = helpful exchange

2.3 PCA for negative communication variables only

2.3.1 Correlations between variables

Table 12
Correlations between variables

	1	2	3
1. co_info_harm_overall			
2. co_instruct_harm_overall	.44**		
3. co_redundant_overall	.42**	.40**	
4. drive_frust_overall	.33*	.29	.40*

2.3.2 KMO and Bartlett's Test of Spherecity

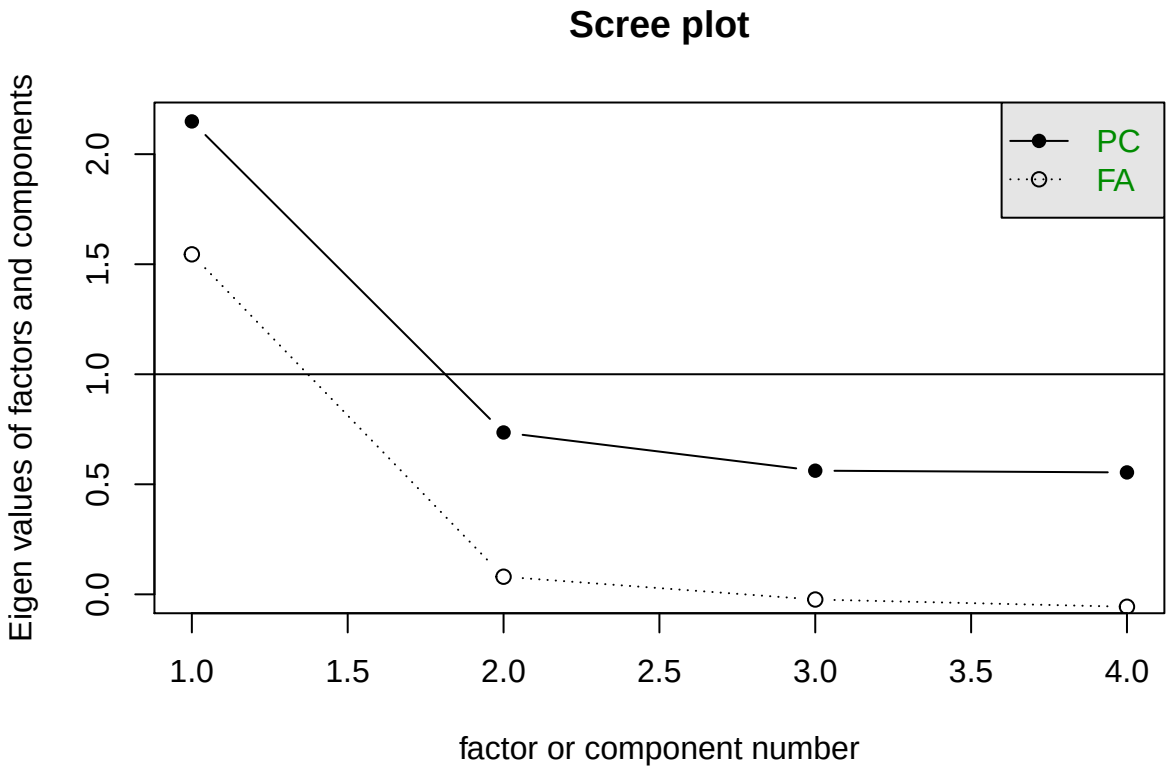
Table 13
KMO: Measure of sampling adequacy

KMO
0.74

Table 14
Bartletts test of spherecity

chisq	p.value	df
26	<.001	6

2.3.3 Scree plot



2.3.4 PCA results

Table 15
Variance accounted for by components

component	eigen	prop_var	cum_var	rotation_SS_load
1	2.15	0.54	0.54	2.15
2	0.74			
3	0.56			
4	0.55			

Table 16
Pattern Matrix

var	PC1	h2
co_redundant_overall	0.77	0.59
co_info_harm_overall	0.76	0.58
co_instruct_harm_overall	0.73	0.53
drive_frust_overall	0.67	0.45

PC1 = harmful codriver

3 Strategy and Communication Factors Relationships

3.1 Correlations with simulation derived performance metrics

Table 17
Correlations with performance metrics

	1	2	3	4	5	6
1. helpful_exchange						
2. harmful_codriver	.43**					
3. hesitant_driving	.56**	.26				
4. risky_driving	-.07	.00	.13			
5. collisions_overall	.29	.24	-.01	.19		
6. speed_overall	-.46**	-.14	-.12	.34*	-.10	
7. distance_overall_deviation	.36*	.52**	.34*	.20	.32*	.04

Table 18
Correlations with driver's psychological variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. helpful_exchange																										
2. harmful_codriver	.43**																									
3. hesitant_driving	.56**	.26																								
4. risky_driving	-.07	.00	.13																							
5. driving_years	.05	.01	-.23	-.13																						
6. gaming_time	.13	.11	.10	.05	-.16																					
7. congruent_errors	-.22	-.36*	-.18	-.11	-.17	-.23																				
8. congruent_time	.08	-.04	-.01	-.11	.34*	-.30	-.11																			
9. incongruent_errors	.13	.03	.02	.15	-.25	.11	.30	-.49**																		
10. incongruent_time	.03	.00	.03	-.11	.29	-.25	-.23	.88**	-.42**																	
11. inhibitory_cost	-.06	.06	.08	-.05	.06	-.05	-.30	.23	-.08	.67**																
12. repeat_errors	.14	.02	-.10	-.07	-.21	-.29	.23	-.19	.58**	-.12	.05															
13. repeat_time	.25	.16	.06	-.19	.18	-.22	-.16	.60**	-.30	.50**	.08	-.13														
14. switch_errors	-.21	-.01	-.08	.30	-.22	-.31	.48**	-.12	.43**	-.09	.00	.45**	-.31													
15. switch_time	.14	.12	-.03	-.25	.26	-.30	-.26	.71**	-.44**	.61**	.13	-.16	.89**	-.34*												
16. switch_cost	-.14	-.02	-.18	-.21	.25	-.26	-.28	.47**	-.40*	.42**	.13	-.13	.13	-.18	.56**											
17. wm_accuracy	.05	.23	.14	-.17	.03	.19	-.10	-.12	.01	-.12	-.06	-.13	-.07	.01	-.02	.08										
18. resilience	.12	.27	-.09	-.02	.11	-.02	-.16	-.08	.19	-.12	-.13	.28	-.22	-.06	-.09	.19	.29									
19. gf_accuracy	.16	.19	.06	-.15	.20	.40**	-.36*	-.23	-.17	-.10	.16	-.15	-.08	-.33*	-.03	.07	.42**	.14								
20. confidence	.03	.12	.26	.13	-.28	.44**	-.12	-.62**	.12	-.52**	-.09	-.12	-.26	-.07	-.37*	-.33*	.37*	.00	.49**							
21. bias	-.13	-.07	.20	.28	-.48**	.03	.25	-.37*	.29	-.41**	-.25	.02	-.17	.27	-.33*	-.40**	-.05	-.13	-.52**	.49**						
22. discrimination	-.12	-.26	.00	.04	-.16	.30	-.19	-.15	.18	-.13	-.02	-.06	-.07	-.03	-.08	-.03	.29	.01	.25	.05	-.20					
23. agreeableness	.56**	.26	.32*	-.15	.14	.08	.19	.05	.11	.01	-.06	-.02	.08	.08	-.03	-.21	.04	.14	.18	.02	-.16	-.02				
24. conscientiousness	.00	.14	.00	-.11	.10	-.19	.24	.18	-.06	.07	-.15	-.21	.13	.05	.09	-.02	.00	.18	-.13	-.20	-.06	.08	.38*			
25. extraversion	.18	-.14	.01	.17	.11	-.30	-.15	.10	-.02	.03	-.10	.03	.32*	-.09	.30	.06	-.26	-.01	-.13	-.21	-.08	.24	-.07	-.11		
26. intellect	-.29	-.10	-.11	-.16	.06	.08	.24	-.20	.04	-.12	.07	-.25	-.10	.13	-.15	-.15	.45**	-.03	.12	.19	.06	.10	-.01	-.16	-.12	
27. neuroticism	-.07	-.02	-.05	-.12	-.05	-.23	.29	.07	.09	.15	.20	.22	.21	.21	.05	-.28	.04	-.26	.03	-.01	-.04	-.02	-.07	.07	.04	.23

3.2 Correlations with driver's psychological variables

Table 19
Correlations with codriver's psychological variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. helpful_exchange																										
2. harmful_codriver	.43**																									
3. hesitant_driving	.56**	.26																								
4. risky_driving	-.07	.00	.13																							
5. driving_years_drone	.11	-.12	.14	.21																						
6. gaming_time_drone	-.16	.02	-.29	-.03	-.22																					
7. congruent_errors_drone	-.04	-.25	-.04	-.01	.01	-.17																				
8. congruent_time_drone	-.19	-.26	-.17	.00	.36*	-.01	-.10																			
9. incongruent_errors_drone	.12	.13	.07	.15	-.17	.02	.16	-.59**																		
10. incongruent_time_drone	-.19	-.25	-.22	-.05	.37*	.01	-.23	.82**	-.43**																	
11. inhibitory_cost_drone	-.03	-.01	-.10	-.09	.06	.03	-.23	-.21	.22	.38*																
12. repeat_errors_drone	.15	.27	.13	-.16	-.09	-.10	.14	-.11	.23	.01	.20															
13. repeat_time_drone	-.05	.10	-.27	.10	.17	-.12	-.17	.53**	-.20	.42**	-.13	-.04														
14. switch_errors_drone	.22	.14	.20	-.15	-.07	.14	.13	-.03	.21	.12	.25	.74**	-.23													
15. switch_time_drone	.03	.00	-.20	.03	.28	-.16	-.14	.56**	-.30	.44**	-.15	-.13	.88**	-.29												
16. switch_cost_drone	.14	-.18	.02	-.11	.32*	-.14	-.02	.31	-.30	.23	-.10	-.20	.21	-.22	.64**											
17. wm_accuracy_drone	-.18	.14	-.07	.06	-.28	.11	-.11	-.30	.00	-.32*	-.07	-.14	.04	-.24	-.05	-.17										
18. resilience_drone	.28	.16	.10	-.06	-.13	-.04	-.09	-.14	.18	-.22	-.15	-.16	-.06	.00	.02	.15	.04									
19. gf_accuracy_drone	-.17	-.11	.01	.17	-.03	.12	-.02	-.22	.13	-.36*	-.27	-.30	-.29	-.43**	-.21	.04	.22	.01								
20. confidence_drone	.03	.18	.11	.10	-.28	.07	.18	-.44**	.31	-.52**	-.17	-.13	-.37*	-.17	-.43**	-.29	.37*	.18	.46**							
21. bias_drone	.20	.27	.09	-.09	-.21	-.07	.17	-.15	.13	-.07	.13	.21	-.01	.31	-.15	-.29	.09	.14	-.65**	.38*						
22. discrimination_drone	-.12	-.20	-.03	.30	.06	.07	-.03	-.18	.11	-.12	.08	-.19	-.26	-.27	-.18	.06	-.03	.19	.44**	.03	-.43**					
23. agreeableness_drone	.06	.07	.23	-.02	-.04	.19	.06	.12	.09	.03	-.15	-.20	-.08	.03	-.17	-.22	-.21	.06	-.11	-.10	.02	-.14				
24. conscientiousness_drone	.08	.03	-.09	.00	.14	-.23	-.28	-.08	-.03	-.14	-.10	-.26	.22	-.36*	.16	-.03	.17	-.03	-.08	.09	.16	-.01	-.15			
25. extraversion_drone	.19	.04	.00	-.12	.05	.04	.04	.10	.00	-.02	-.19	-.10	-.06	-.01	.03	.15	.06	.34*	.00	.22	.18	-.20	.05	-.02		
26. intellect_drone	-.19	.37*	-.14	.16	-.08	.43**	-.22	-.13	.10	-.14	-.03	.09	.02	-.13	-.08	-.19	.37*	-.16	.29	.32*	-.03	.22	-.11	.09	.11	
27. neuroticism_drone	-.30	-.05	.01	.14	-.04	-.07	-.17	.12	.01	.10	-.02	-.09	.14	-.27	.09	-.05	.29	-.31	.37*	.14	-.27	.07	.15	.04	-.10	.15

3.3 Correlations with codriver's psychological variables

3.4 Correlations with driver's NASA-TLX

Table 20
Correlations with driver's NASA-TLX

	1	2	3	4	5	6	7	8	9
1. helpful_exchange									
2. harmful_codriver	.43**								
3. hesitant_driving	.56**	.26							
4. risky_driving	-.07	.00	.13						
5. effort	.30	.22	.19	.00					
6. frustration	-.04	.14	-.06	.08	.02				
7. mental_demand	.25	.31	.17	-.07	.50**	.39*			
8. performance	.01	-.14	.28	.06	.08	-.31	.09		
9. physical_demand	-.12	-.07	-.07	.10	.20	.31	.10	-.13	
10. temporal_demand	.19	.20	.09	-.06	.46**	.08	.56**	.10	.26

3.5 Correlations with codriver's NASA-TLX

Table 21
Correlations with codriver's NASA-TLX

	1	2	3	4	5	6	7	8	9
1. helpful_exchange									
2. harmful_codriver	.43**								
3. hesitant_driving	.56**	.26							
4. risky_driving	-.07	.00	.13						
5. effort_drone	.18	.28	.12	.29					
6. frustration_drone	-.13	.00	-.12	.06	.48**				
7. mental_demand_drone	.02	.09	-.19	.18	.49**	.64**			
8. performance_drone	.08	.18	.15	-.01	-.08	-.29	-.16		
9. physical_demand_drone	.02	.18	-.06	.00	.18	.17	.27	.08	
10. temporal_demand_drone	.11	.13	.06	.22	.56**	.55**	.71**	-.21	.19