Mixed Model Analysis

Model Dimension[a]

		Number of Levels	Covariance Structure	Number of Parameters
Fixed Effects	Intercept	1		1
	SNR	3		2
	Program	6		5
	Noise_Type	2		1
	SNR * Program	18		10
	SNR * Noise_Type	6		2
	Program * Noise_Type	12		5
	SNR * Program * Noise_Type	36		10
Random Effects	Audiogram	4	Variance Components	1
Residual				1
Total		88		38

a. Dependent Variable: HASPI.

Information Criteria[a]

-2 Restricted Log Likelihood	-1258.02089407
Akaike's Information Criterion (AIC)	-1254.02089407
Hurvich and Tsai's Criterion (AICC)	-1254.01011240
Bozdogan's Criterion (CAIC)	-1241.98588179
Schwarz's Bayesian Criterion (BIC)	-1243.98588179

The information criteria are displayed in smaller-is-better form.[a]

a. Dependent Variable: HASPI.

Coefficients of Determination

Pseudo-R Square Measures	Marginal	.672
	Conditional	.727

Intraclass Correlation Coefficients

Overall ICCs	Adjusted	.170
	Conditional	.056

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	3.000	76.033	.003
SNR	2	1113.002	1112.804	<.001
Program	5	1113.002	73.953	<.001
Noise_Type	1	1113.002	131.680	<.001
SNR * Program	10	1113.002	5.365	<.001
SNR * Noise_Type	2	1113.002	5.481	.004
Program * Noise_Type	5	1113.002	5.781	<.001
SNR * Program * Noise_Type	10	1113.002	1.587	.105

a. Dependent Variable: HASPI.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error
Residual		.017	.001
Audiogram	Variance	.003	.003

a. Dependent Variable: HASPI.

Estimated Marginal Means

1. SNR

Estimates[a]

				95% Confidence Interval	
SNR	Mean	Std. Error	df	Lower Bound	Upper Bound
-5	.057	.030	3.203	-.035	.149
0	.223	.030	3.203	.131	.316
5	.494	.030	3.203	.401	.586

a. Dependent Variable: HASPI.

Pairwise Comparisons[a]

(I) SNR	(J) SNR	Mean Difference (I-J)	Std. Error	df	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound
-5	0	-.166*	.009	1113.002	<.001	-.189
	5	-.437*	.009	1113.002	<.001	-.459
0	-5	.166*	.009	1113.002	<.001	.144
	5	-.271*	.009	1113.002	<.001	-.293
5	-5	.437*	.009	1113.002	<.001	.414
	0	.271*	.009	1113.002	<.001	.248

Pairwise Comparisons[a]

(I) SNR	(J) SNR	95% Confidence Interval for Difference Upper Bound
-5	0	-.144
	5	-.414
0	-5	.189
	5	-.248
5	-5	.459
	0	.293

Based on estimated marginal means[a]

*. The mean difference is significant at the .05 level.

a. Dependent Variable: HASPI.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests[a]

Numerator df	Denominator df	F	Sig.
2	1113.002	1112.804	<.001

The F tests the effect of SNR. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.[a]

a. Dependent Variable: HASPI.

2. Program

Estimates[a]

Program	Mean	Std. Error	df	95% Confidence Interval Lower Bound	Upper Bound
No_Processing	.182	.031	3.520	.092	.272
Beam	.242	.031	3.520	.151	.332
Beam+NoiseBlock	.237	.031	3.520	.147	.327
DNN	.305	.031	3.520	.215	.395
NoiseBlock	.188	.031	3.520	.097	.278
DNN+Directional	.394	.031	3.520	.304	.485

a. Dependent Variable: HASPI.

Pairwise Comparisons[a]

(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig.[c]
No_Processing	Beam	-.060*	.013	1113.002	<.001
	Beam+NoiseBlock	-.055*	.013	1113.002	<.001
	DNN	-.123*	.013	1113.002	<.001
	NoiseBlock	-.006	.013	1113.002	1.000
	DNN+Directional	-.213*	.013	1113.002	<.001
Beam	No_Processing	.060*	.013	1113.002	<.001
	Beam+NoiseBlock	.005	.013	1113.002	1.000
	DNN	-.063*	.013	1113.002	<.001
	NoiseBlock	.054*	.013	1113.002	<.001
	DNN+Directional	-.153*	.013	1113.002	<.001
Beam+NoiseBlock	No_Processing	.055*	.013	1113.002	<.001
	Beam	-.005	.013	1113.002	1.000
	DNN	-.068*	.013	1113.002	<.001
	NoiseBlock	.049*	.013	1113.002	.003
	DNN+Directional	-.157*	.013	1113.002	<.001
DNN	No_Processing	.123*	.013	1113.002	<.001
	Beam	.063*	.013	1113.002	<.001
	Beam+NoiseBlock	.068*	.013	1113.002	<.001
	NoiseBlock	.117*	.013	1113.002	<.001
	DNN+Directional	-.089*	.013	1113.002	<.001
NoiseBlock	No_Processing	.006	.013	1113.002	1.000
	Beam	-.054*	.013	1113.002	<.001
	Beam+NoiseBlock	-.049*	.013	1113.002	.003
	DNN	-.117*	.013	1113.002	<.001
	DNN+Directional	-.207*	.013	1113.002	<.001
DNN+Directional	No_Processing	.213*	.013	1113.002	<.001
	Beam	.153*	.013	1113.002	<.001
	Beam+NoiseBlock	.157*	.013	1113.002	<.001
	DNN	.089*	.013	1113.002	<.001
	NoiseBlock	.207*	.013	1113.002	<.001

Pairwise Comparisons[a]

		95% Confidence Interval for Difference[c]	
(I) Program	(J) Program	Lower Bound	Upper Bound
No_Processing	Beam	-.099	-.021
	Beam+NoiseBlock	-.094	-.016
	DNN	-.162	-.084
	NoiseBlock	-.045	.033
	DNN+Directional	-.252	-.174
Beam	No_Processing	.021	.099

	Beam+NoiseBlock	-.034	.044
	DNN	-.102	-.024
	NoiseBlock	.015	.093
	DNN+Directional	-.192	-.114
Beam+NoiseBlock	No_Processing	.016	.094
	Beam	-.044	.034
	DNN	-.107	-.029
	NoiseBlock	.010	.088
	DNN+Directional	-.196	-.119
DNN	No_Processing	.084	.162
	Beam	.024	.102
	Beam+NoiseBlock	.029	.107
	NoiseBlock	.079	.156
	DNN+Directional	-.128	-.050
NoiseBlock	No_Processing	-.033	.045
	Beam	-.093	-.015
	Beam+NoiseBlock	-.088	-.010
	DNN	-.156	-.079
	DNN+Directional	-.246	-.168
DNN+Directional	No_Processing	.174	.252
	Beam	.114	.192
	Beam+NoiseBlock	.119	.196
	DNN	.050	.128
	NoiseBlock	.168	.246

Based on estimated marginal means[a]

*. The mean difference is significant at the .05 level.

a. Dependent Variable: HASPI.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests[a]

Numerator df	Denominator df	F	Sig.
5	1113.002	73.953	<.001

The F tests the effect of Program. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.[a]

a. Dependent Variable: HASPI.

3. Noise_Type

Estimates[a]

				95% Confidence Interval	
Noise_Type	Mean	Std. Error	df	Lower Bound	Upper Bound
SSN	.302	.030	3.101	.209	.395
Babble	.214	.030	3.101	.121	.307

a. Dependent Variable: HASPI.

Pairwise Comparisons[a]

(I) Noise_Type	(J) Noise_Type	Mean Difference (I-J)	Std. Error	df	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound
SSN	Babble	.088*	.008	1113.002	<.001	.073
Babble	SSN	-.088*	.008	1113.002	<.001	-.103

Pairwise Comparisons[a]

(I) Noise_Type	(J) Noise_Type	95% Confidence Interval for Difference Upper Bound
SSN	Babble	.103
Babble	SSN	-.073

Based on estimated marginal means[a]

*. The mean difference is significant at the .05 level.

a. Dependent Variable: HASPI.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests[a]

Numerator df	Denominator df	F	Sig.
1	1113.002	131.680	<.001

The F tests the effect of Noise_Type. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.[a]

a. Dependent Variable: HASPI.

4. SNR * Program

Estimates[a]

SNR	Program	Mean	Std. Error	df	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
-5	No_Processing	.026	.034	4.936	-.061	.112
	Beam	.033	.034	4.936	-.054	.119
	Beam+NoiseBlock	.035	.034	4.936	-.051	.122
	DNN	.083	.034	4.936	-.003	.170
	NoiseBlock	.031	.034	4.936	-.055	.118
	DNN+Directional	.134	.034	4.936	.048	.221
0	No_Processing	.124	.034	4.936	.037	.210
	Beam	.196	.034	4.936	.109	.282
	Beam+NoiseBlock	.199	.034	4.936	.112	.285
	DNN	.270	.034	4.936	.183	.356
	NoiseBlock	.138	.034	4.936	.051	.224
	DNN+Directional	.414	.034	4.936	.328	.500
5	No_Processing	.396	.034	4.936	.310	.483
	Beam	.497	.034	4.936	.411	.584

	Beam+NoiseBlock	.477	.034	4.936	.391	.564
	DNN	.562	.034	4.936	.476	.649
	NoiseBlock	.394	.034	4.936	.308	.481
	DNN+Directional	.635	.034	4.936	.549	.722

a. Dependent Variable: HASPI.

Pairwise Comparisons[a]

SNR	(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound	Upper Bound
-5	No_Processing	Beam	-.007	.023	1113.002	1.000	-.074	.060
		Beam+NoiseBlock	-.010	.023	1113.002	1.000	-.077	.058
		DNN	-.058	.023	1113.002	.176	-.125	.010
		NoiseBlock	-.006	.023	1113.002	1.000	-.073	.062
		DNN+Directional	-.109*	.023	1113.002	<.001	-.176	-.041
	Beam	No_Processing	.007	.023	1113.002	1.000	-.060	.074
		Beam+NoiseBlock	-.003	.023	1113.002	1.000	-.070	.065
		DNN	-.051	.023	1113.002	.400	-.118	.017
		NoiseBlock	.001	.023	1113.002	1.000	-.066	.069
		DNN+Directional	-.102*	.023	1113.002	<.001	-.169	-.034
	Beam+NoiseBlock	No_Processing	.010	.023	1113.002	1.000	-.058	.077
		Beam	.003	.023	1113.002	1.000	-.065	.070
		DNN	-.048	.023	1113.002	.534	-.116	.019
		NoiseBlock	.004	.023	1113.002	1.000	-.063	.071
		DNN+Directional	-.099*	.023	1113.002	<.001	-.166	-.032
	DNN	No_Processing	.058	.023	1113.002	.176	-.010	.125
		Beam	.051	.023	1113.002	.400	-.017	.118
		Beam+NoiseBlock	.048	.023	1113.002	.534	-.019	.116
		NoiseBlock	.052	.023	1113.002	.340	-.015	.120

		DNN+ Directional	-.051	.023	1113.002	.401	-.118	.017
	NoiseBlock	No_Processing	.006	.023	1113.002	1.000	-.062	.073
		Beam	-.001	.023	1113.002	1.000	-.069	.066
		Beam+Noise Block	-.004	.023	1113.002	1.000	-.071	.063
		DNN	-.052	.023	1113.002	.340	-.120	.015
		DNN+ Directional	-.103*	.023	1113.002	<.001	-.170	-.036
	DNN+ Directional	No_Processing	.109*	.023	1113.002	<.001	.041	.176
		Beam	.102*	.023	1113.002	<.001	.034	.169
		Beam+Noise Block	.099*	.023	1113.002	<.001	.032	.166
		DNN	.051	.023	1113.002	.401	-.017	.118
		NoiseBlock	.103*	.023	1113.002	<.001	.036	.170
0	No_Processing	Beam	-.072*	.023	1113.002	.026	-.139	-.005
		Beam+Noise Block	-.075*	.023	1113.002	.016	-.142	-.008
		DNN	-.146*	.023	1113.002	<.001	-.214	-.079
		NoiseBlock	-.014	.023	1113.002	1.000	-.081	.053
		DNN+ Directional	-.290*	.023	1113.002	<.001	-.358	-.223
	Beam	No_Processing	.072*	.023	1113.002	.026	.005	.139
		Beam+Noise Block	-.003	.023	1113.002	1.000	-.070	.064
		DNN	-.074*	.023	1113.002	.018	-.142	-.007
		NoiseBlock	.058	.023	1113.002	.176	-.010	.125
		DNN+ Directional	-.218*	.023	1113.002	<.001	-.286	-.151
	Beam+ NoiseBlock	No_Processing	.075*	.023	1113.002	.016	.008	.142
		Beam	.003	.023	1113.002	1.000	-.064	.070
		DNN	-.071*	.023	1113.002	.028	-.139	-.004
		NoiseBlock	.061	.023	1113.00	.120	-.007	.128

					2			
		DNN+ Directional	-.215*	.023	1113.002	<.001	-.283	-.148
	DNN	No_Processing	.146*	.023	1113.002	<.001	.079	.214
		Beam	.074*	.023	1113.002	.018	.007	.142
		Beam+Noise Block	.071*	.023	1113.002	.028	.004	.139
		NoiseBlock	.132*	.023	1113.002	<.001	.065	.199
		DNN+ Directional	-.144*	.023	1113.002	<.001	-.211	-.077
	NoiseBlock	No_Processing	.014	.023	1113.002	1.000	-.053	.081
		Beam	-.058	.023	1113.002	.176	-.125	.010
		Beam+Noise Block	-.061	.023	1113.002	.120	-.128	.007
		DNN	-.132*	.023	1113.002	<.001	-.199	-.065
		DNN+ Directional	-.276*	.023	1113.002	<.001	-.344	-.209
	DNN+ Directional	No_Processing	.290*	.023	1113.002	<.001	.223	.358
		Beam	.218*	.023	1113.002	<.001	.151	.286
		Beam+Noise Block	.215*	.023	1113.002	<.001	.148	.283
		DNN	.144*	.023	1113.002	<.001	.077	.211
		NoiseBlock	.276*	.023	1113.002	<.001	.209	.344
5	No_Processing	Beam	-.101*	.023	1113.002	<.001	-.168	-.034
		Beam+Noise Block	-.081*	.023	1113.002	.006	-.148	-.014
		DNN	-.166*	.023	1113.002	<.001	-.233	-.099
		NoiseBlock	.002	.023	1113.002	1.000	-.065	.069
		DNN+ Directional	-.239*	.023	1113.002	<.001	-.306	-.172
	Beam	No_Processing	.101*	.023	1113.002	<.001	.034	.168
		Beam+Noise Block	.020	.023	1113.002	1.000	-.048	.087
		DNN	-.065	.023	1113.002	.069	-.132	.002

		NoiseBlock	.103*	.023	1113.002	<.001	.036	.170
		DNN+ Directional	-.138*	.023	1113.002	<.001	-.206	-.071
	Beam+ NoiseBlock	No_Processing	.081*	.023	1113.002	.006	.014	.148
		Beam	-.020	.023	1113.002	1.000	-.087	.048
		DNN	-.085*	.023	1113.002	.003	-.152	-.017
		NoiseBlock	.083*	.023	1113.002	.004	.016	.150
		DNN+ Directional	-.158*	.023	1113.002	<.001	-.225	-.091
	DNN	No_Processing	.166*	.023	1113.002	<.001	.099	.233
		Beam	.065	.023	1113.002	.069	-.002	.132
		Beam+Noise Block	.085*	.023	1113.002	.003	.017	.152
		NoiseBlock	.168*	.023	1113.002	<.001	.101	.235
		DNN+ Directional	-.073*	.023	1113.002	.022	-.141	-.006
	NoiseBlock	No_Processing	-.002	.023	1113.002	1.000	-.069	.065
		Beam	-.103*	.023	1113.002	<.001	-.170	-.036
		Beam+Noise Block	-.083*	.023	1113.002	.004	-.150	-.016
		DNN	-.168*	.023	1113.002	<.001	-.235	-.101
		DNN+ Directional	-.241*	.023	1113.002	<.001	-.308	-.174
	DNN +Directional	No_Processing	.239*	.023	1113.002	<.001	.172	.306
		Beam	.138*	.023	1113.002	<.001	.071	.206
		Beam+Noise Block	.158*	.023	1113.002	<.001	.091	.225
		DNN	.073*	.023	1113.002	.022	.006	.141
		NoiseBlock	.241*	.023	1113.002	<.001	.174	.308

Based on estimated marginal means[a]

*. The mean difference is significant at the .05 level.

a. Dependent Variable: HASPI.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests[a]

SNR	Numerator df	Denominator df	F	Sig.
-5	5	1113.002	7.157	<.001
0	5	1113.002	43.628	<.001
5	5	1113.002	33.899	<.001

Each F tests the simple effects of Program within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.[a]

a. Dependent Variable: HASPI.

5. SNR * Noise_Type[a]

					95% Confidence Interval	
SNR	Noise_Type	Mean	Std. Error	df	Lower Bound	Upper Bound
-5	SSN	.083	.031	3.520	-.007	.174
	Babble	.031	.031	3.520	-.060	.121
0	SSN	.272	.031	3.520	.182	.362
	Babble	.174	.031	3.520	.084	.265
5	SSN	.550	.031	3.520	.460	.640
	Babble	.438	.031	3.520	.347	.528

a. Dependent Variable: HASPI.

6. Program * Noise_Type

Estimates[a]

					95% Confidence Interval	
Program	Noise_Type	Mean	Std. Error	df	Lower Bound	Upper Bound
No_Processing	SSN	.228	.032	4.198	.140	.316
	Babble	.135	.032	4.198	.048	.223
Beam	SSN	.256	.032	4.198	.169	.344
	Babble	.227	.032	4.198	.140	.315
Beam+NoiseBlock	SSN	.258	.032	4.198	.171	.346
	Babble	.216	.032	4.198	.128	.303
DNN	SSN	.380	.032	4.198	.292	.468
	Babble	.230	.032	4.198	.142	.318
NoiseBlock	SSN	.237	.032	4.198	.150	.325
	Babble	.138	.032	4.198	.050	.226
DNN+Directional	SSN	.450	.032	4.198	.363	.538
	Babble	.339	.032	4.198	.251	.426

a. Dependent Variable: HASPI.

Pairwise Comparisons[a]

Noise Type	(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound	Upper Bound
SSN	No_Processing	Beam	-.028	.019	1113.002	1.000	-.083	.027
		Beam+NoiseBlock	-.030	.019	1113.002	1.000	-.085	.025
		DNN	-.152*	.019	1113.002	<.001	-.207	-.097
		NoiseBlock	-.009	.019	1113.002	1.000	-.064	.046
		DNN+Directional	-.222*	.019	1113.002	<.001	-.277	-.167
	Beam	No_Processing	.028	.019	1113.002	1.000	-.027	.083
		Beam+NoiseBlock	-.002	.019	1113.002	1.000	-.057	.053
		DNN	-.124*	.019	1113.002	<.001	-.179	-.069
		NoiseBlock	.019	.019	1113.002	1.000	-.036	.074
		DNN+Directional	-.194*	.019	1113.002	<.001	-.249	-.139
	Beam+ NoiseBlock	No_Processing	.030	.019	1113.002	1.000	-.025	.085
		Beam	.002	.019	1113.002	1.000	-.053	.057
		DNN	-.122*	.019	1113.002	<.001	-.177	-.067
		NoiseBlock	.021	.019	1113.002	1.000	-.034	.076
		DNN+Directional	-.192*	.019	1113.002	<.001	-.247	-.137
	DNN	No_Processing	.152*	.019	1113.002	<.001	.097	.207
		Beam	.124*	.019	1113.002	<.001	.069	.179
		Beam+NoiseBlock	.122*	.019	1113.002	<.001	.067	.177
		NoiseBlock	.143*	.019	1113.002	<.001	.088	.198
		DNN+Directional	-.070*	.019	1113.002	.003	-.125	-.015
	NoiseBlock	No_Processing	.009	.019	1113.002	1.000	-.046	.064
		Beam	-.019	.019	1113.002	1.000	-.074	.036

		Beam+NoiseBlock	-.021	.019	1113.002	1.000	-.076	.034
		DNN	-.143*	.019	1113.002	<.001	-.198	-.088
		DNN+Directional	-.213*	.019	1113.002	<.001	-.268	-.158
	DNN+Directional	No_Processing	.222*	.019	1113.002	<.001	.167	.277
		Beam	.194*	.019	1113.002	<.001	.139	.249
		Beam+NoiseBlock	.192*	.019	1113.002	<.001	.137	.247
		DNN	.070*	.019	1113.002	.003	.015	.125
		NoiseBlock	.213*	.019	1113.002	<.001	.158	.268
Babble	No_Processing	Beam	-.092*	.019	1113.002	<.001	-.147	-.037
		Beam+NoiseBlock	-.080*	.019	1113.002	<.001	-.135	-.025
		DNN	-.095*	.019	1113.002	<.001	-.150	-.040
		NoiseBlock	-.003	.019	1113.002	1.000	-.057	.052
		DNN+Directional	-.203*	.019	1113.002	<.001	-.258	-.148
	Beam	No_Processing	.092*	.019	1113.002	<.001	.037	.147
		Beam+NoiseBlock	.011	.019	1113.002	1.000	-.044	.066
		DNN	-.003	.019	1113.002	1.000	-.058	.052
		NoiseBlock	.089*	.019	1113.002	<.001	.034	.144
		DNN+Directional	-.111*	.019	1113.002	<.001	-.166	-.056
	Beam+ NoiseBlock	No_Processing	.080*	.019	1113.002	<.001	.025	.135
		Beam	-.011	.019	1113.002	1.000	-.066	.044
		DNN	-.014	.019	1113.002	1.000	-.069	.041
		NoiseBlock	.078*	.019	1113.002	<.001	.023	.133
		DNN+Directional	-.123*	.019	1113.002	<.001	-.178	-.068
	DNN	No_Processing	.095*	.019	1113.002	<.001	.040	.150
		Beam	.003	.019	1113.00	1.000	-.052	.058

				2			
	Beam+NoiseBlock	.014	.019	1113.002	1.000	-.041	.069
	NoiseBlock	.092*	.019	1113.002	<.001	.037	.147
	DNN+Directional	-.109*	.019	1113.002	<.001	-.164	-.054
NoiseBlock	No_Processing	.003	.019	1113.002	1.000	-.052	.057
	Beam	-.089*	.019	1113.002	<.001	-.144	-.034
	Beam+NoiseBlock	-.078*	.019	1113.002	<.001	-.133	-.023
	DNN	-.092*	.019	1113.002	<.001	-.147	-.037
	DNN+Directional	-.201*	.019	1113.002	<.001	-.256	-.146
DNN+Directional	No_Processing	.203*	.019	1113.002	<.001	.148	.258
	Beam	.111*	.019	1113.002	<.001	.056	.166
	Beam+NoiseBlock	.123*	.019	1113.002	<.001	.068	.178
	DNN	.109*	.019	1113.002	<.001	.054	.164
	NoiseBlock	.201*	.019	1113.002	<.001	.146	.256

Based on estimated marginal means[a]

*. The mean difference is significant at the .05 level.

a. Dependent Variable: HASPI.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests[a]

Noise_Type	Numerator df	Denominator df	F	Sig.
SSN	5	1113.002	47.791	<.001
Babble	5	1113.002	31.944	<.001

Each F tests the simple effects of Program within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.[a]

a. Dependent Variable: HASPI.

7. SNR * Program * Noise_Type

Estimates[a]

SNR	Program	Noise_Type	Mean	Std. Error	df	95% Confidence Interval	
						Lower Bound	Upper Bound
-5	No_Processing	SSN	.038	.037	7.504	-.049	.125
		Babble	.013	.037	7.504	-.074	.100
	Beam	SSN	.036	.037	7.504	-.050	.123
		Babble	.029	.037	7.504	-.058	.115
	Beam+NoiseBlock	SSN	.042	.037	7.504	-.044	.129
		Babble	.028	.037	7.504	-.059	.115
	DNN	SSN	.133	.037	7.504	.046	.220
		Babble	.034	.037	7.504	-.053	.121
	NoiseBlock	SSN	.048	.037	7.504	-.039	.135
		Babble	.014	.037	7.504	-.073	.101
	DNN+Directional	SSN	.203	.037	7.504	.116	.289
		Babble	.066	.037	7.504	-.021	.152
0	No_Processing	SSN	.169	.037	7.504	.082	.256
		Babble	.078	.037	7.504	-.009	.165
	Beam	SSN	.207	.037	7.504	.121	.294
		Babble	.184	.037	7.504	.097	.270
	Beam+NoiseBlock	SSN	.223	.037	7.504	.136	.310
		Babble	.174	.037	7.504	.087	.261
	DNN	SSN	.370	.037	7.504	.284	.457
		Babble	.169	.037	7.504	.083	.256
	NoiseBlock	SSN	.187	.037	7.504	.100	.274
		Babble	.089	.037	7.504	.002	.175
	DNN+Directional	SSN	.476	.037	7.504	.389	.563
		Babble	.352	.037	7.504	.265	.439
5	No_Processing	SSN	.477	.037	7.504	.391	.564
		Babble	.315	.037	7.504	.228	.402
	Beam	SSN	.525	.037	7.504	.438	.612
		Babble	.469	.037	7.504	.383	.556
	Beam+NoiseBlock	SSN	.510	.037	7.504	.423	.596
		Babble	.445	.037	7.504	.358	.532
	DNN	SSN	.637	.037	7.504	.550	.724
		Babble	.487	.037	7.504	.400	.574
	NoiseBlock	SSN	.477	.037	7.504	.391	.564
		Babble	.311	.037	7.504	.224	.398
	DNN+Directional	SSN	.672	.037	7.504	.586	.759
		Babble	.598	.037	7.504	.511	.685

a. Dependent Variable: HASPI.

Pairwise Comparisons[a]

SNR	Noise Type	(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound	Upper Bound
-5	SSN	No_Processing	Beam	.001	.032	1113.002	1.000	-.094	.097
			Beam+ NoiseBlock	-.005	.032	1113.002	1.000	-.100	.091
			DNN	-.095	.032	1113.002	.051	-.190	.000
			NoiseBlock	-.010	.032	1113.002	1.000	-.105	.085
			DNN+ Directional	-.165*	.032	1113.002	<.001	-.260	-.070
		Beam	No_Processing	-.001	.032	1113.002	1.000	-.097	.094
			Beam+ NoiseBlock	-.006	.032	1113.002	1.000	-.101	.089
			DNN	-.097*	.032	1113.002	.044	-.192	-.001
			NoiseBlock	-.012	.032	1113.002	1.000	-.107	.084
			DNN+ Directional	-.166*	.032	1113.002	<.001	-.262	-.071
		Beam+NoiseBlock	No_Processing	.005	.032	1113.002	1.000	-.091	.100
			Beam	.006	.032	1113.002	1.000	-.089	.101
			DNN	-.090	.032	1113.002	.080	-.186	.005
			NoiseBlock	-.005	.032	1113.002	1.000	-.101	.090
			DNN+ Directional	-.160*	.032	1113.002	<.001	-.255	-.065
		DNN	No_Processing	.095	.032	1113.002	.051	.000	.190
			Beam	.097*	.032	1113.002	.044	.001	.192
			Beam+ NoiseBlock	.090	.032	1113.002	.080	-.005	.186
			NoiseBlock	.085	.032	1113.002	.132	-.010	.180
			DNN+ Directional	-.070	.032	1113.002	.471	-.165	.025
		NoiseBlock	No_Processing	.010	.032	1113.002	1.000	-.085	.105
			Beam	.012	.032	1113.002	1.000	-.084	.107

		Beam+ NoiseBlock	.005	.032	1113.002	1.000	-.090	.101
		DNN	-.085	.032	1113.002	.132	-.180	.010
		DNN+ Directional	-.155*	.032	1113.002	<.001	-.250	-.060
	DNN+Directional	No_Processing	.165*	.032	1113.002	<.001	.070	.260
		Beam	.166*	.032	1113.002	<.001	.071	.262
		Beam+ NoiseBlock	.160*	.032	1113.002	<.001	.065	.255
		DNN	.070	.032	1113.002	.471	-.025	.165
		NoiseBlock	.155*	.032	1113.002	<.001	.060	.250
Babble	No_Processing	Beam	-.016	.032	1113.002	1.000	-.111	.080
		Beam+ NoiseBlock	-.015	.032	1113.002	1.000	-.110	.081
		DNN	-.021	.032	1113.002	1.000	-.116	.075
		NoiseBlock	-.001	.032	1113.002	1.000	-.096	.094
		DNN+ Directional	-.052	.032	1113.002	1.000	-.148	.043
	Beam	No_Processing	.016	.032	1113.002	1.000	-.080	.111
		Beam+ NoiseBlock	.001	.032	1113.002	1.000	-.094	.096
		DNN	-.005	.032	1113.002	1.000	-.100	.090
		NoiseBlock	.014	.032	1113.002	1.000	-.081	.110
		DNN+ Directional	-.037	.032	1113.002	1.000	-.132	.058
	Beam+NoiseBlock	No_Processing	.015	.032	1113.002	1.000	-.081	.110
		Beam	-.001	.032	1113.002	1.000	-.096	.094
		DNN	-.006	.032	1113.002	1.000	-.101	.089
		NoiseBlock	.014	.032	1113.002	1.000	-.082	.109
		DNN+ Directional	-.038	.032	1113.002	1.000	-.133	.058
	DNN	No_Processing	.021	.032	1113.002	1.000	-.075	.116
		Beam	.005	.032	1113.00	1.000	-.090	.100

						2			
			Beam+ NoiseBlock	.006	.032	1113.002	1.000	-.089	.101
			NoiseBlock	.020	.032	1113.002	1.000	-.076	.115
			DNN+ Directional	-.032	.032	1113.002	1.000	-.127	.063
		NoiseBlock	No_Processing	.001	.032	1113.002	1.000	-.094	.096
			Beam	-.014	.032	1113.002	1.000	-.110	.081
			Beam+ NoiseBlock	-.014	.032	1113.002	1.000	-.109	.082
			DNN	-.020	.032	1113.002	1.000	-.115	.076
			DNN+ Directional	-.051	.032	1113.002	1.000	-.147	.044
		DNN+Directional	No_Processing	.052	.032	1113.002	1.000	-.043	.148
			Beam	.037	.032	1113.002	1.000	-.058	.132
			Beam+ NoiseBlock	.038	.032	1113.002	1.000	-.058	.133
			DNN	.032	.032	1113.002	1.000	-.063	.127
			NoiseBlock	.051	.032	1113.002	1.000	-.044	.147
0	SSN	No_Processing	Beam	-.038	.032	1113.002	1.000	-.134	.057
			Beam+ NoiseBlock	-.054	.032	1113.002	1.000	-.149	.041
			DNN	-.201*	.032	1113.002	<.001	-.296	-.106
			NoiseBlock	-.018	.032	1113.002	1.000	-.113	.078
			DNN+ Directional	-.307*	.032	1113.002	<.001	-.402	-.212
		Beam	No_Processing	.038	.032	1113.002	1.000	-.057	.134
			Beam+ NoiseBlock	-.015	.032	1113.002	1.000	-.111	.080
			DNN	-.163*	.032	1113.002	<.001	-.258	-.068
			NoiseBlock	.021	.032	1113.002	1.000	-.075	.116
			DNN+ Directional	-.269*	.032	1113.002	<.001	-.364	-.173
		Beam+NoiseBlock	No_ Processing	.054	.032	1113.002	1.000	-.041	.149

		Beam	.015	.032	1113.002	1.000	-.080	.111
		DNN	-.147*	.032	1113.002	<.001	-.243	-.052
		NoiseBlock	.036	.032	1113.002	1.000	-.059	.131
		DNN+ Directional	-.253*	.032	1113.002	<.001	-.348	-.158
	DNN	No_Processing	.201*	.032	1113.002	<.001	.106	.296
		Beam	.163*	.032	1113.002	<.001	.068	.258
		Beam+ NoiseBlock	.147*	.032	1113.002	<.001	.052	.243
		NoiseBlock	.184*	.032	1113.002	<.001	.088	.279
		DNN+ Directional	-.106*	.032	1113.002	.017	-.201	-.010
	NoiseBlock	No_Processing	.018	.032	1113.002	1.000	-.078	.113
		Beam	-.021	.032	1113.002	1.000	-.116	.075
		Beam+ NoiseBlock	-.036	.032	1113.002	1.000	-.131	.059
		DNN	-.184*	.032	1113.002	<.001	-.279	-.088
		DNN+ Directional	-.289*	.032	1113.002	<.001	-.384	-.194
	DNN+Directional	No_Processing	.307*	.032	1113.002	<.001	.212	.402
		Beam	.269*	.032	1113.002	<.001	.173	.364
		Beam+ NoiseBlock	.253*	.032	1113.002	<.001	.158	.348
		DNN	.106*	.032	1113.002	.017	.010	.201
		NoiseBlock	.289*	.032	1113.002	<.001	.194	.384
Babble	No_Processing	Beam	-.105*	.032	1113.002	.017	-.201	-.010
		Beam+ NoiseBlock	-.096*	.032	1113.002	.046	-.191	-.001
		DNN	-.091	.032	1113.002	.073	-.187	.004
		NoiseBlock	-.010	.032	1113.002	1.000	-.106	.085
		DNN+ Directional	-.274*	.032	1113.002	<.001	-.369	-.179
	Beam	No_Processing	.105*	.032	1113.00	.017	.010	.201

				2			
	Beam+ NoiseBlock	.009	.032	1113.002	1.000	-.086	.105
	DNN	.014	.032	1113.002	1.000	-.081	.109
	NoiseBlock	.095	.032	1113.002	.051	.000	.190
	DNN+ Directional	-.168*	.032	1113.002	<.001	-.264	-.073
Beam+NoiseBlock	No_Processing	.096*	.032	1113.002	.046	.001	.191
	Beam	-.009	.032	1113.002	1.000	-.105	.086
	DNN	.005	.032	1113.002	1.000	-.090	.100
	NoiseBlock	.086	.032	1113.002	.124	-.010	.181
	DNN+ Directional	-.178*	.032	1113.002	<.001	-.273	-.082
DNN	No_Processing	.091	.032	1113.002	.073	-.004	.187
	Beam	-.014	.032	1113.002	1.000	-.109	.081
	Beam+ NoiseBlock	-.005	.032	1113.002	1.000	-.100	.090
	NoiseBlock	.081	.032	1113.002	.191	-.014	.176
	DNN+ Directional	-.183*	.032	1113.002	<.001	-.278	-.087
NoiseBlock	No_Processing	.010	.032	1113.002	1.000	-.085	.106
	Beam	-.095	.032	1113.002	.051	-.190	.000
	Beam+ NoiseBlock	-.086	.032	1113.002	.124	-.181	.010
	DNN	-.081	.032	1113.002	.191	-.176	.014
	DNN+ Directional	-.263*	.032	1113.002	<.001	-.359	-.168
DNN+Directional	No_Processing	.274*	.032	1113.002	<.001	.179	.369
	Beam	.168*	.032	1113.002	<.001	.073	.264
	Beam+ NoiseBlock	.178*	.032	1113.002	<.001	.082	.273
	DNN	.183*	.032	1113.002	<.001	.087	.278
	NoiseBlock	.263*	.032	1113.002	<.001	.168	.359

5	SSN	No_Processing	Beam	-.048	.032	1113.002	1.000	-.143	.048
			Beam+ NoiseBlock	-.032	.032	1113.002	1.000	-.127	.063
			DNN	-.160*	.032	1113.002	<.001	-.255	-.065
			NoiseBlock	6.639e-5	.032	1113.002	1.000	-.095	.095
			DNN+ Directional	-.195*	.032	1113.002	<.001	-.290	-.100
		Beam	No_Processing	.048	.032	1113.002	1.000	-.048	.143
			Beam+ NoiseBlock	.015	.032	1113.002	1.000	-.080	.111
			DNN	-.112*	.032	1113.002	.008	-.207	-.017
			NoiseBlock	.048	.032	1113.002	1.000	-.048	.143
			DNN+ Directional	-.147*	.032	1113.002	<.001	-.243	-.052
		Beam+NoiseBlock	No_Processing	.032	.032	1113.002	1.000	-.063	.127
			Beam	-.015	.032	1113.002	1.000	-.111	.080
			DNN	-.128*	.032	1113.002	.001	-.223	-.032
			NoiseBlock	.032	.032	1113.002	1.000	-.063	.128
			DNN+ Directional	-.163*	.032	1113.002	<.001	-.258	-.068
		DNN	No_Processing	.160*	.032	1113.002	<.001	.065	.255
			Beam	.112*	.032	1113.002	.008	.017	.207
			Beam+ NoiseBlock	.128*	.032	1113.002	.001	.032	.223
			NoiseBlock	.160*	.032	1113.002	<.001	.065	.255
			DNN+ Directional	-.035	.032	1113.002	1.000	-.130	.060
		NoiseBlock	No_Processing	-6.639e-5	.032	1113.002	1.000	-.095	.095
			Beam	-.048	.032	1113.002	1.000	-.143	.048
			Beam+ NoiseBlock	-.032	.032	1113.002	1.000	-.128	.063
			DNN	-.160*	.032	1113.002	<.001	-.255	-.065
			DNN+	-.195*	.032	1113.00	<.001	-.290	-.100

		Directional			2			
	DNN+Directional	No_Processing	.195*	.032	1113.002	<.001	.100	.290
		Beam	.147*	.032	1113.002	<.001	.052	.243
		Beam+ NoiseBlock	.163*	.032	1113.002	<.001	.068	.258
		DNN	.035	.032	1113.002	1.000	-.060	.130
		NoiseBlock	.195*	.032	1113.002	<.001	.100	.290
Babble	No_Processing	Beam	-.154*	.032	1113.002	<.001	-.249	-.059
		Beam+ NoiseBlock	-.130*	.032	1113.002	<.001	-.225	-.035
		DNN	-.172*	.032	1113.002	<.001	-.267	-.077
		NoiseBlock	.004	.032	1113.002	1.000	-.091	.099
		DNN+ Directional	-.283*	.032	1113.002	<.001	-.378	-.188
	Beam	No_Processing	.154*	.032	1113.002	<.001	.059	.249
		Beam+ NoiseBlock	.024	.032	1113.002	1.000	-.071	.119
		DNN	-.018	.032	1113.002	1.000	-.113	.077
		NoiseBlock	.158*	.032	1113.002	<.001	.063	.253
		DNN+ Directional	-.129*	.032	1113.002	.001	-.224	-.034
	Beam+NoiseBlock	No_Processing	.130*	.032	1113.002	<.001	.035	.225
		Beam	-.024	.032	1113.002	1.000	-.119	.071
		DNN	-.042	.032	1113.002	1.000	-.137	.053
		NoiseBlock	.134*	.032	1113.002	<.001	.039	.229
		DNN+ Directional	-.153*	.032	1113.002	<.001	-.248	-.058
	DNN	No_Processing	.172*	.032	1113.002	<.001	.077	.267
		Beam	.018	.032	1113.002	1.000	-.077	.113
		Beam+ NoiseBlock	.042	.032	1113.002	1.000	-.053	.137
		NoiseBlock	.176*	.032	1113.002	<.001	.081	.271

		DNN+ Directional	-.111*	.032	1113.002	.009	-.206	-.016
	NoiseBlock	No_Processing	-.004	.032	1113.002	1.000	-.099	.091
		Beam	-.158*	.032	1113.002	<.001	-.253	-.063
		Beam+ NoiseBlock	-.134*	.032	1113.002	<.001	-.229	-.039
		DNN	-.176*	.032	1113.002	<.001	-.271	-.081
		DNN+ Directional	-.287*	.032	1113.002	<.001	-.382	-.192
	DNN+Directional	No_Processing	.283*	.032	1113.002	<.001	.188	.378
		Beam	.129*	.032	1113.002	.001	.034	.224
		Beam+ NoiseBlock	.153*	.032	1113.002	<.001	.058	.248
		DNN	.111*	.032	1113.002	.009	.016	.206
		NoiseBlock	.287*	.032	1113.002	<.001	.192	.382

Based on estimated marginal means[a]

*. The mean difference is significant at the .05 level.

a. Dependent Variable: HASPI.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests[a]

SNR	Noise_Type	Numerator df	Denominator df	F	Sig.
-5	SSN	5	1113.002	9.117	<.001
	Babble	5	1113.002	.692	.629
0	SSN	5	1113.002	28.881	<.001
	Babble	5	1113.002	18.420	<.001
5	SSN	5	1113.002	13.510	<.001
	Babble	5	1113.002	23.018	<.001

Each F tests the simple effects of Program within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.[a]

a. Dependent Variable: HASPI.