Univariate Analysis of Variance

Notes

Output Created		07-SEP-2022 11:53:00
Comments		
Input	Data	C:\Users\Student\OneDrive - University of Kent\URSS\Experiment 1 - Spell or No Spell\Statistical Analysis\Final_All_Results.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	6134198
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Notes

Syntax	UNIANOVA VADER_Result BY Pre_Processed Spell_Checked
	  /CONTRAST (Spell_Checked)=Simple (1)
	  /METHOD=SSTYPE(3)
	  /INTERCEPT=INCLUDE
	
	/POSTHOC=Spell_Checked(TUKEY)
	  /PLOT=PROFILE (Spell_Checked*Pre_Processed) TYPE=LINE ERRORBAR=CI MEANREFERENCE=NO YAXIS=AUTO
	  /EMMEANS=TABLES (Pre_Processed)
	  /EMMEANS=TABLES (Spell_Checked)
	  /EMMEANS=TABLES (Pre_Processed*Spell_Checked)
	  /PRINT ETASQ DESCRIPTIVE PARAMETER
	  /PLOT=RESIDUALS
	  /CRITERIA=ALPHA(.05)
	  /ROBUST=HC4
	
	/DESIGN=Pre_Processed Spell_Checked Pre_Processed*Spell_Checked.

Resources	Processor Time	00:04:00.62
	Elapsed Time	00:03:56.93

[DataSet1] C:\Users\Student\OneDrive - University of Kent\URSS\Experiment 1 - Spell or No Spell\Statistical Analysis\Final_All_Results.sav

Between-Subjects Factors

		Value Label	N
Pre_Processed	0	False	3067099
	1	True	3067099
Spell_Checked	None		876314
	Symspell		876314
	Symspell_Compound		876314
	Symspell_Compound_Urban		876314
	Symspell_Urban		876314
	TextBlob		876314
	TextBlob_Urban		876314

Descriptive Statistics

Dependent Variable: VADER_Result

Pre_Processed	Spell_Checked	Mean	Std. Deviation	N
False	None	.589966	.2813448	438157
	Symspell	.586319	.2845094	438157
	Symspell_Compound	.593961	.2775128	438157
	Symspell_Compound_Urban	.595231	.2781151	438157
	Symspell_Urban	.587605	.2845571	438157
	TextBlob	.578778	.2904053	438157
	TextBlob_Urban	.581465	.2922602	438157
	Total	.587618	.2842047	3067099
True	None	.595171	.2796352	438157
	Symspell	.591084	.2829005	438157

Descriptive Statistics

Dependent Variable: VADER_Result

Pre_Processed	Spell_Checked	Mean	Std. Deviation	N
	Symspell_Compound	.598651	.2757892	438157
	Symspell_Compound_Urban	.600028	.2762914	438157
	Symspell_Urban	.592627	.2828048	438157
	TextBlob	.583412	.2890505	438157
	TextBlob_Urban	.586570	.2908883	438157
	Total	.592506	.2825876	3067099
Total	None	.592568	.2805032	876314
	Symspell	.588701	.2837159	876314
	Symspell_Compound	.596306	.2766622	876314
	Symspell_Compound_Urban	.597629	.2772150	876314
	Symspell_Urban	.590116	.2836932	876314
	TextBlob	.581095	.2897378	876314
	TextBlob_Urban	.584018	.2915861	876314
	Total	.590062	.2834078	6134198

Tests of Between-Subjects Effects

Dependent Variable: VADER_Result

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	230.664[a]	13	17.743	221.012	.000	.000
Intercept	2135762.817	1	2135762.817	26603073.28	.000	.813
Pre_Processed	36.644	1	36.644	456.437	<.001	.000
Spell_Checked	193.956	6	32.326	402.653	.000	.000
Pre_Processed * Spell_Checked	.064	6	.011	.133	.992	.000
Error	492467.993	6134184	.080			
Total	2628461.473	6134198				
Corrected Total	492698.657	6134197				

a. R Squared = .000 (Adjusted R Squared = .000)

Parameter Estimates

Dependent Variable: VADER_Result

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	.587	.000	1370.327	.000	.586	.587	.234
[Pre_Processed=0]	-.005	.001	-8.432	<.001	-.006	-.004	.000
[Pre_Processed=1]	0[a]	.	.	.	.	.	.
[Spell_Checked=None]	.009	.001	14.207	<.001	.007	.010	.000
[Spell_Checked=Symspell]	.005	.001	7.457	<.001	.003	.006	.000
[Spell_Checked=Symspell_Compound]	.012	.001	19.957	<.001	.011	.013	.000
[Spell_Checked=Symspell_Compound_Urban]	.013	.001	22.231	<.001	.012	.015	.000
[Spell_Checked=Symspell_Urban]	.006	.001	10.006	<.001	.005	.007	.000

Parameter Estimates

Dependent Variable: VADER_Result

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
[Spell_Checked=TextBlob]	-.003	.001	-5.217	<.001	-.004	-.002	.000
[Spell_Checked=TextBlob_Urban]	0[a]	.	.	.	.	.	.
[Pre_Processed=0] * [Spell_Checked=None]	-9.982E-5	.001	-.117	.907	-.002	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell]	.000	.001	.396	.692	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell_Compound]	.000	.001	.485	.628	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell_Compound_Urban]	.000	.001	.359	.719	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell_Urban]	8.297E-5	.001	.097	.923	-.002	.002	.000
[Pre_Processed=0] * [Spell_Checked=TextBlob]	.000	.001	.549	.583	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=TextBlob_Urban]	0[a]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=None]	0[a]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell]	0[a]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell_Compound]	0[a]	.	.	.	.	.	.

Parameter Estimates

Dependent Variable: VADER_Result

| Parameter | B | Std. Error | t | Sig. | 95% Confidence Interval | | Partial Eta Squared |
					Lower Bound	Upper Bound	
[Pre_Processed=1] * [Spell_Checked=Symspell_ Compound_Urban]	0[a]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell_ Urban]	0[a]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=TextBlob]	0[a]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=TextBlob_ Urban]	0[a]	.	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

Custom Hypothesis Tests

Contrast Results (K Matrix)

Spell_Checked Simple Contrast[a]			Dependent Variable
			VADER_Result
Level 2 vs. Level 1	Contrast Estimate		-.004
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		-.004
	Std. Error		.000
	Sig.		<.001
	95% Confidence Interval for Difference	Lower Bound	-.005
		Upper Bound	-.003
Level 3 vs. Level 1	Contrast Estimate		.004
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		.004
	Std. Error		.000
	Sig.		<.001
	95% Confidence Interval for Difference	Lower Bound	.003
		Upper Bound	.005
Level 4 vs. Level 1	Contrast Estimate		.005
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		.005
	Std. Error		.000
	Sig.		<.001
	95% Confidence Interval for Difference	Lower Bound	.004
		Upper Bound	.006
Level 5 vs. Level 1	Contrast Estimate		-.002
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		-.002
	Std. Error		.000
	Sig.		<.001
	95% Confidence Interval for Difference	Lower Bound	-.003
		Upper Bound	-.002

Contrast Results (K Matrix)

Spell_Checked Simple Contrast[a]		Dependent Variable VADER_Result
Level 6 vs. Level 1	Contrast Estimate	-.011
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	-.011
	Std. Error	.000
	Sig.	<.001
	95% Confidence Interval for Difference — Lower Bound	-.012
	Upper Bound	-.011
Level 7 vs. Level 1	Contrast Estimate	-.009
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	-.009
	Std. Error	.000
	Sig.	<.001
	95% Confidence Interval for Difference — Lower Bound	-.009
	Upper Bound	-.008

a. Reference category = 1

Test Results

Dependent Variable: VADER_Result

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	193.956	6	32.326	402.653	.000	.000
Error	492467.993	6134184	.080			

Estimated Marginal Means

1. Pre_Processed

Dependent Variable: VADER_Result

Pre_Processed	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
False	.588	.000	.587	.588
True	.593	.000	.592	.593

2. Spell_Checked

Dependent Variable: VADER_Result

Spell_Checked	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
None	.593	.000	.592	.593
Symspell	.589	.000	.588	.589
Symspell_Compound	.596	.000	.596	.597
Symspell_Compound_Urban	.598	.000	.597	.598
Symspell_Urban	.590	.000	.590	.591
TextBlob	.581	.000	.581	.582
TextBlob_Urban	.584	.000	.583	.585

3. Pre_Processed * Spell_Checked

Dependent Variable: VADER_Result

Pre_Processed	Spell_Checked	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
False	None	.590	.000	.589	.591
	Symspell	.586	.000	.585	.587
	Symspell_Compound	.594	.000	.593	.595
	Symspell_Compound_Urban	.595	.000	.594	.596
	Symspell_Urban	.588	.000	.587	.588
	TextBlob	.579	.000	.578	.580
	TextBlob_Urban	.581	.000	.581	.582
True	None	.595	.000	.594	.596
	Symspell	.591	.000	.590	.592
	Symspell_Compound	.599	.000	.598	.599
	Symspell_Compound_Urban	.600	.000	.599	.601
	Symspell_Urban	.593	.000	.592	.593
	TextBlob	.583	.000	.583	.584
	TextBlob_Urban	.587	.000	.586	.587

Post Hoc Tests

Spell_Checked

Multiple Comparisons

Dependent Variable: VADER_Result

Tukey HSD

(I) Spell_Checked	(J) Spell_Checked	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
None	Symspell	.003867[*]	.0004281	.000	.002605	.005129
	Symspell_Compound	-.003738[*]	.0004281	.000	-.005000	-.002476
	Symspell_Compound_Urban	-.005061[*]	.0004281	.000	-.006323	-.003799
	Symspell_Urban	.002452[*]	.0004281	<.001	.001190	.003714
	TextBlob	.011473[*]	.0004281	.000	.010211	.012736
	TextBlob_Urban	.008551[*]	.0004281	.000	.007289	.009813
Symspell	None	-.003867[*]	.0004281	.000	-.005129	-.002605
	Symspell_Compound	-.007605[*]	.0004281	.000	-.008867	-.006343
	Symspell_Compound_Urban	-.008928[*]	.0004281	.000	-.010190	-.007666
	Symspell_Urban	-.001415[*]	.0004281	.017	-.002677	-.000153
	TextBlob	.007607[*]	.0004281	.000	.006345	.008869
	TextBlob_Urban	.004684[*]	.0004281	.000	.003422	.005946
Symspell_Compound	None	.003738[*]	.0004281	.000	.002476	.005000
	Symspell	.007605[*]	.0004281	.000	.006343	.008867
	Symspell_Compound_Urban	-.001323[*]	.0004281	.033	-.002585	-.000061
	Symspell_Urban	.006190[*]	.0004281	.000	.004928	.007452
	TextBlob	.015211[*]	.0004281	.000	.013949	.016473
	TextBlob_Urban	.012288[*]	.0004281	.000	.011026	.013550
Symspell_Compound_Urban	None	.005061[*]	.0004281	.000	.003799	.006323
	Symspell	.008928[*]	.0004281	.000	.007666	.010190

Multiple Comparisons

Dependent Variable: VADER_Result
Tukey HSD

(I) Spell_Checked	(J) Spell_Checked	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
	Symspell_Compound	.001323*	.0004281	.033	.000061	.002585
	Symspell_Urban	.007513*	.0004281	.000	.006251	.008775
	TextBlob	.016535*	.0004281	.000	.015272	.017797
	TextBlob_Urban	.013612*	.0004281	.000	.012350	.014874
Symspell_Urban	None	-.002452*	.0004281	<.001	-.003714	-.001190
	Symspell	.001415*	.0004281	.017	.000153	.002677
	Symspell_Compound	-.006190*	.0004281	.000	-.007452	-.004928
	Symspell_Compound_Urban	-.007513*	.0004281	.000	-.008775	-.006251
	TextBlob	.009021*	.0004281	.000	.007759	.010283
	TextBlob_Urban	.006098*	.0004281	.000	.004836	.007360
TextBlob	None	-.011473*	.0004281	.000	-.012736	-.010211
	Symspell	-.007607*	.0004281	.000	-.008869	-.006345
	Symspell_Compound	-.015211*	.0004281	.000	-.016473	-.013949
	Symspell_Compound_Urban	-.016535*	.0004281	.000	-.017797	-.015272
	Symspell_Urban	-.009021*	.0004281	.000	-.010283	-.007759
	TextBlob_Urban	-.002923*	.0004281	.000	-.004185	-.001661
TextBlob_Urban	None	-.008551*	.0004281	.000	-.009813	-.007289
	Symspell	-.004684*	.0004281	.000	-.005946	-.003422
	Symspell_Compound	-.012288*	.0004281	.000	-.013550	-.011026
	Symspell_Compound_Urban	-.013612*	.0004281	.000	-.014874	-.012350
	Symspell_Urban	-.006098*	.0004281	.000	-.007360	-.004836
	TextBlob	.002923*	.0004281	.000	.001661	.004185

Based on observed means.
 The error term is Mean Square(Error) = .080.

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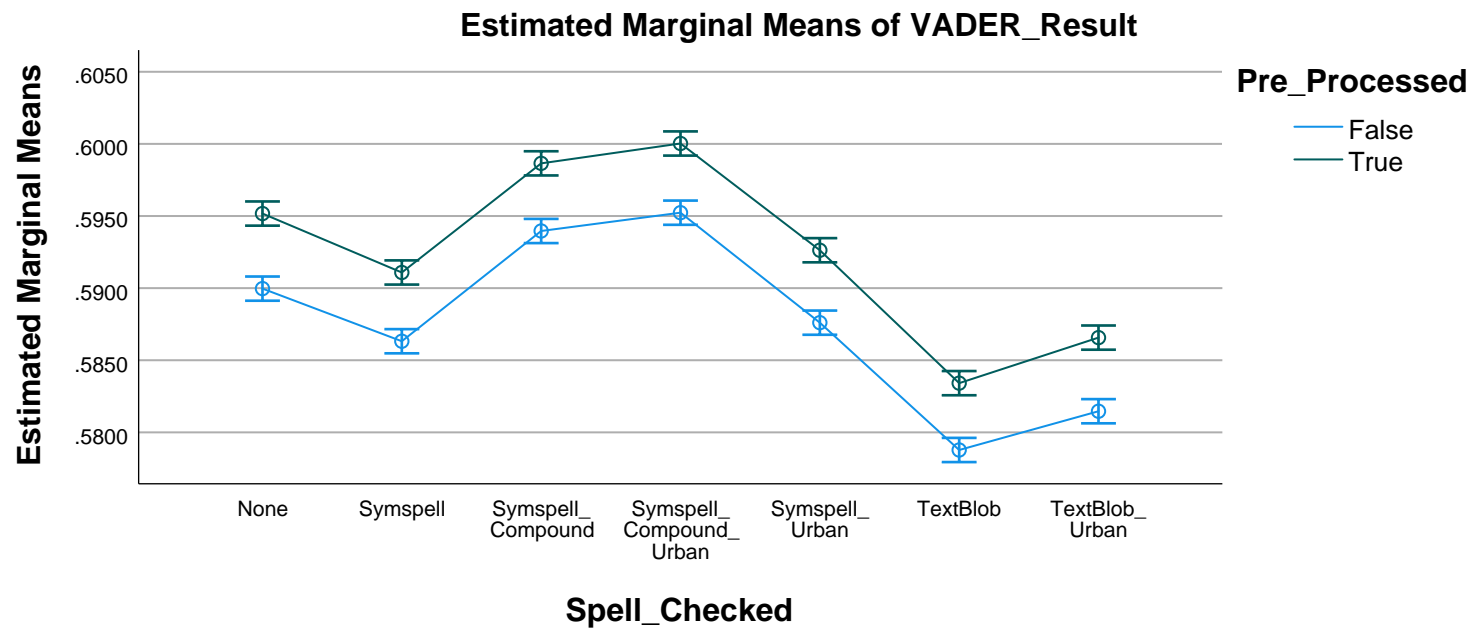

Homogeneous Subsets

VADER_Result

Tukey HSD[a,b]

Spell_Checked	N	Subset						
		1	2	3	4	5	6	7
TextBlob	876314	.581095						
TextBlob_Urban	876314		.584018					
Symspell	876314			.588701				
Symspell_Urban	876314				.590116			
None	876314					.592568		
Symspell_Compound	876314						.596306	
Symspell_Compound_Urban	876314							.597629
Sig.		1.000	1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
 Based on observed means.
 The error term is Mean Square(Error) = .080.

   a. Uses Harmonic Mean Sample Size = 876314.000.

   b. Alpha = .05.

Profile Plots

Estimated Marginal Means of VADER_Result

Error bars: 95% CI

Parameter Estimates with Robust Standard Errors

Dependent Variable: VADER_Result

Parameter	B	Robust Std. Error[a]	t	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound	Partial Eta Squared
Intercept	.587	.000	1334.777	.000	.586	.587	.225
[Pre_Processed=0]	-.005	.001	-8.194	<.001	-.006	-.004	.000
[Pre_Processed=1]	0[b]	.	.	.	.	.	.
[Spell_Checked=None]	.009	.001	14.109	<.001	.007	.010	.000
[Spell_Checked=Symspell]	.005	.001	7.364	<.001	.003	.006	.000
[Spell_Checked=Symspell_Compound]	.012	.001	19.950	<.001	.011	.013	.000
[Spell_Checked=Symspell_Compound_Urban]	.013	.001	22.204	<.001	.012	.015	.000
[Spell_Checked=Symspell_Urban]	.006	.001	9.882	<.001	.005	.007	.000
[Spell_Checked=TextBlob]	-.003	.001	-5.098	<.001	-.004	-.002	.000
[Spell_Checked=TextBlob_Urban]	0[b]	.	.	.	.	.	.
[Pre_Processed=0] * [Spell_Checked=None]	-9.982E-5	.001	-.115	.908	-.002	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell]	.000	.001	.390	.696	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell_Compound]	.000	.001	.483	.629	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell_Compound_Urban]	.000	.001	.358	.720	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=Symspell_Urban]	8.297E-5	.001	.095	.924	-.002	.002	.000

Parameter Estimates with Robust Standard Errors

Dependent Variable: VADER_Result

Parameter	B	Robust Std. Error[a]	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
[Pre_Processed=0] * [Spell_Checked=TextBlob]	.000	.001	.535	.592	-.001	.002	.000
[Pre_Processed=0] * [Spell_Checked=TextBlob_ Urban]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=None]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell_ Compound]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell_ Compound_Urban]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=Symspell_ Urban]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=TextBlob]	0[b]	.	.	.	.	.	.
[Pre_Processed=1] * [Spell_Checked=TextBlob_ Urban]	0[b]	.	.	.	.	.	.

a. HC4 method

b. This parameter is set to zero because it is redundant.