

The Mixed Procedure

Model Information	
Data Set	WORK.MYDATA
Dependent Variable	branch_density
Covariance Structure	Variance Components
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
blocks	3	1 2 3
geo_num	10	1 10 2 3 4 5 6 7 8 9
origin	2	Intro Nat

Dimensions	
Covariance Parameters	3
Columns in X	29
Columns in Z	33
Subjects	1
Max Obs per Subject	29

Number of Observations	
Number of Observations Read	120
Number of Observations Used	29
Number of Observations Not Used	91

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	31.43403081	
1	3	31.29027339	0.00008375
2	1	31.28995888	0.00000005
3	1	31.28995871	0.00000000

Convergence criteria met.

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Covariance Parameter Estimates	
Cov Parm	Estimate
blocks	0
blocks*geo_num	0.1220
Residual	0.2494

Fit Statistics	
-2 Res Log Likelihood	31.3
AIC (Smaller is Better)	35.3
AICC (Smaller is Better)	36.5
BIC (Smaller is Better)	33.5

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
geo_num	9	9	0.45	0.8742
origin	1	2	0.35	0.6143
geo_num*origin	5	2	0.43	0.8056

Least Squares Means							
Effect	geo_num	origin	Estimate	Standard Error	DF	t Value	Pr > |t|
geo_num	1		Non-est	.	.	.	.
geo_num	10		Non-est	.	.	.	.
geo_num	2		1.2500	0.3732	9	3.35	0.0085
geo_num	3		1.2500	0.3732	9	3.35	0.0085
geo_num	4		1.3498	0.3605	9	3.74	0.0046
geo_num	5		Non-est	.	.	.	.
geo_num	6		1.3004	0.3605	9	3.61	0.0057
geo_num	7		Non-est	.	.	.	.
geo_num	8		1.0000	0.4310	9	2.32	0.0455
geo_num	9		2.0000	0.3732	9	5.36	0.0005
origin		Intro	Non-est	.	.	.	.
origin		Nat	Non-est	.	.	.	.
geo_num*origin	1	Nat	1.3333	0.3519	2	3.79	0.0631
geo_num*origin	10	Intro	1.5000	0.4310	2	3.48	0.0736
geo_num*origin	2	Intro	1.5000	0.4310	2	3.48	0.0736
geo_num*origin	2	Nat	1.0000	0.6095	2	1.64	0.2425

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Least Squares Means							
Effect	geo_num	origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	3	Intro	1.5000	0.4310	2	3.48	0.0736
geo_num*origin	3	Nat	1.0000	0.6095	2	1.64	0.2425
geo_num*origin	4	Intro	1.6996	0.3850	2	4.41	0.0477
geo_num*origin	4	Nat	1.0000	0.6095	2	1.64	0.2425
geo_num*origin	5	Nat	1.5000	0.4310	2	3.48	0.0736
geo_num*origin	6	Intro	1.0000	0.6095	2	1.64	0.2425
geo_num*origin	6	Nat	1.6009	0.3850	2	4.16	0.0533
geo_num*origin	7	Intro	1.3333	0.3519	2	3.79	0.0631
geo_num*origin	8	Intro	1.0000	0.6095	2	1.64	0.2425
geo_num*origin	8	Nat	1.0000	0.6095	2	1.64	0.2425
geo_num*origin	9	Intro	2.0000	0.6095	2	3.28	0.0817
geo_num*origin	9	Nat	2.0000	0.4310	2	4.64	0.0434

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num	1		10		Non-est	.	.	.	.
geo_num	1		2		Non-est	.	.	.	.
geo_num	1		3		Non-est	.	.	.	.
geo_num	1		4		Non-est	.	.	.	.
geo_num	1		5		-0.1667	0.5564	9	-0.30	0.7713
geo_num	1		6		Non-est	.	.	.	.
geo_num	1		7		Non-est	.	.	.	.
geo_num	1		8		Non-est	.	.	.	.
geo_num	1		9		Non-est	.	.	.	.
geo_num	10		2		Non-est	.	.	.	.
geo_num	10		3		Non-est	.	.	.	.
geo_num	10		4		Non-est	.	.	.	.
geo_num	10		5		Non-est	.	.	.	.
geo_num	10		6		Non-est	.	.	.	.
geo_num	10		7		0.1667	0.5564	9	0.30	0.7713
geo_num	10		8		Non-est	.	.	.	.
geo_num	10		9		Non-est	.	.	.	.
geo_num	2		3		-333E-18	0.5278	9	-0.00	1.0000
geo_num	2		4		-0.09978	0.5189	9	-0.19	0.8518
geo_num	2		5		Non-est	.	.	.	.
geo_num	2		6		-0.05044	0.5189	9	-0.10	0.9247
geo_num	2		7		Non-est	.	.	.	.
geo_num	2		8		0.2500	0.5701	9	0.44	0.6714
geo_num	2		9		-0.7500	0.5278	9	-1.42	0.1890
geo_num	3		4		-0.09978	0.5189	9	-0.19	0.8518
geo_num	3		5		Non-est	.	.	.	.
geo_num	3		6		-0.05044	0.5189	9	-0.10	0.9247
geo_num	3		7		Non-est	.	.	.	.
geo_num	3		8		0.2500	0.5701	9	0.44	0.6714
geo_num	3		9		-0.7500	0.5278	9	-1.42	0.1890
geo_num	4		5		Non-est	.	.	.	.
geo_num	4		6		0.04934	0.5098	9	0.10	0.9250
geo_num	4		7		Non-est
geo_num	4		8		0.3498	0.5618	9	0.62	0.5490
geo_num	4		9		-0.6502	0.5189	9	-1.25	0.2417

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num	5		6		Non-est	.	.	.	.
geo_num	5		7		Non-est	.	.	.	.
geo_num	5		8		Non-est	.	.	.	.
geo_num	5		9		Non-est	.	.	.	.
geo_num	6		7		Non-est	.	.	.	.
geo_num	6		8		0.3004	0.5618	9	0.53	0.6058
geo_num	6		9		-0.6996	0.5189	9	-1.35	0.2105
geo_num	7		8		Non-est	.	.	.	.
geo_num	7		9		Non-est	.	.	.	.
geo_num	8		9		-1.0000	0.5701	9	-1.75	0.1133
origin		Intro		Nat	Non-est	.	.	.	.
geo_num*origin	1	Nat	10	Intro	-0.1667	0.5564	2	-0.30	0.7928
geo_num*origin	1	Nat	2	Intro	-0.1667	0.5564	2	-0.30	0.7928
geo_num*origin	1	Nat	2	Nat	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	1	Nat	3	Intro	-0.1667	0.5564	2	-0.30	0.7928
geo_num*origin	1	Nat	3	Nat	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	1	Nat	4	Intro	-0.3662	0.5216	2	-0.70	0.5553
geo_num*origin	1	Nat	4	Nat	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	1	Nat	5	Nat	-0.1667	0.5564	2	-0.30	0.7928
geo_num*origin	1	Nat	6	Intro	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	1	Nat	6	Nat	-0.2675	0.5216	2	-0.51	0.6590
geo_num*origin	1	Nat	7	Intro	-111E-18	0.4976	2	-0.00	1.0000
geo_num*origin	1	Nat	8	Intro	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	1	Nat	8	Nat	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	1	Nat	9	Intro	-0.6667	0.7038	2	-0.95	0.4435
geo_num*origin	1	Nat	9	Nat	-0.6667	0.5564	2	-1.20	0.3536
geo_num*origin	10	Intro	2	Intro	-167E-18	0.6095	2	-0.00	1.0000
geo_num*origin	10	Intro	2	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	10	Intro	3	Intro	1.11E-16	0.6095	2	0.00	1.0000
geo_num*origin	10	Intro	3	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	10	Intro	4	Intro	-0.1996	0.5779	2	-0.35	0.7628
geo_num*origin	10	Intro	4	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	10	Intro	5	Nat	-451E-19	0.6095	2	-0.00	1.0000
geo_num*origin	10	Intro	6	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	10	Intro	6	Nat	-0.1009	0.5779	2	-0.17	0.8775

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	10	Intro	7	Intro	0.1667	0.5564	2	0.30	0.7928
geo_num*origin	10	Intro	8	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	10	Intro	8	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	10	Intro	9	Intro	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	10	Intro	9	Nat	-0.5000	0.6095	2	-0.82	0.4982
geo_num*origin	2	Intro	2	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	2	Intro	3	Intro	2.22E-16	0.6095	2	0.00	1.0000
geo_num*origin	2	Intro	3	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	2	Intro	4	Intro	-0.1996	0.5779	2	-0.35	0.7628
geo_num*origin	2	Intro	4	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	2	Intro	5	Nat	2.22E-16	0.6095	2	0.00	1.0000
geo_num*origin	2	Intro	6	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	2	Intro	6	Nat	-0.1009	0.5779	2	-0.17	0.8775
geo_num*origin	2	Intro	7	Intro	0.1667	0.5564	2	0.30	0.7928
geo_num*origin	2	Intro	8	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	2	Intro	8	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	2	Intro	9	Intro	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	2	Intro	9	Nat	-0.5000	0.6095	2	-0.82	0.4982
geo_num*origin	2	Nat	3	Intro	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	2	Nat	3	Nat	-777E-18	0.8619	2	-0.00	1.0000
geo_num*origin	2	Nat	4	Intro	-0.6996	0.7209	2	-0.97	0.4342
geo_num*origin	2	Nat	4	Nat	-155E-17	0.8619	2	-0.00	1.0000
geo_num*origin	2	Nat	5	Nat	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	2	Nat	6	Intro	1.11E-16	0.8619	2	0.00	1.0000
geo_num*origin	2	Nat	6	Nat	-0.6009	0.7209	2	-0.83	0.4923
geo_num*origin	2	Nat	7	Intro	-0.3333	0.7038	2	-0.47	0.6824
geo_num*origin	2	Nat	8	Intro	1.97E-17	0.8619	2	0.00	1.0000
geo_num*origin	2	Nat	8	Nat	0	0.8619	2	0.00	1.0000
geo_num*origin	2	Nat	9	Intro	-1.0000	0.8619	2	-1.16	0.3657
geo_num*origin	2	Nat	9	Nat	-1.0000	0.7465	2	-1.34	0.3123
geo_num*origin	3	Intro	3	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	3	Intro	4	Intro	-0.1996	0.5779	2	-0.35	0.7628
geo_num*origin	3	Intro	4	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	3	Intro	5	Nat	-111E-18	0.6095	2	-0.00	1.0000
geo_num*origin	3	Intro	6	Intro	0.5000	0.7465	2	0.67	0.5719

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	3	Intro	6	Nat	-0.1009	0.5779	2	-0.17	0.8775
geo_num*origin	3	Intro	7	Intro	0.1667	0.5564	2	0.30	0.7928
geo_num*origin	3	Intro	8	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	3	Intro	8	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	3	Intro	9	Intro	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	3	Intro	9	Nat	-0.5000	0.6095	2	-0.82	0.4982
geo_num*origin	3	Nat	4	Intro	-0.6996	0.7209	2	-0.97	0.4342
geo_num*origin	3	Nat	4	Nat	-777E-18	0.8619	2	-0.00	1.0000
geo_num*origin	3	Nat	5	Nat	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	3	Nat	6	Intro	8.88E-16	0.8619	2	0.00	1.0000
geo_num*origin	3	Nat	6	Nat	-0.6009	0.7209	2	-0.83	0.4923
geo_num*origin	3	Nat	7	Intro	-0.3333	0.7038	2	-0.47	0.6824
geo_num*origin	3	Nat	8	Intro	7.77E-16	0.8619	2	0.00	1.0000
geo_num*origin	3	Nat	8	Nat	7.77E-16	0.8619	2	0.00	1.0000
geo_num*origin	3	Nat	9	Intro	-1.0000	0.8619	2	-1.16	0.3657
geo_num*origin	3	Nat	9	Nat	-1.0000	0.7465	2	-1.34	0.3123
geo_num*origin	4	Intro	4	Nat	0.6996	0.7209	2	0.97	0.4342
geo_num*origin	4	Intro	5	Nat	0.1996	0.5779	2	0.35	0.7628
geo_num*origin	4	Intro	6	Intro	0.6996	0.7209	2	0.97	0.4342
geo_num*origin	4	Intro	6	Nat	0.09869	0.5445	2	0.18	0.8729
geo_num*origin	4	Intro	7	Intro	0.3662	0.5216	2	0.70	0.5553
geo_num*origin	4	Intro	8	Intro	0.6996	0.7209	2	0.97	0.4342
geo_num*origin	4	Intro	8	Nat	0.6996	0.7209	2	0.97	0.4342
geo_num*origin	4	Intro	9	Intro	-0.3004	0.7209	2	-0.42	0.7173
geo_num*origin	4	Intro	9	Nat	-0.3004	0.5779	2	-0.52	0.6550
geo_num*origin	4	Nat	5	Nat	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	4	Nat	6	Intro	1.67E-15	0.8619	2	0.00	1.0000
geo_num*origin	4	Nat	6	Nat	-0.6009	0.7209	2	-0.83	0.4923
geo_num*origin	4	Nat	7	Intro	-0.3333	0.7038	2	-0.47	0.6824
geo_num*origin	4	Nat	8	Intro	1.57E-15	0.8619	2	0.00	1.0000
geo_num*origin	4	Nat	8	Nat	1.55E-15	0.8619	2	0.00	1.0000
geo_num*origin	4	Nat	9	Intro	-1.0000	0.8619	2	-1.16	0.3657
geo_num*origin	4	Nat	9	Nat	-1.0000	0.7465	2	-1.34	0.3123
geo_num*origin	5	Nat	6	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	5	Nat	6	Nat	-0.1009	0.5779	2	-0.17	0.8775

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	5	Nat	7	Intro	0.1667	0.5564	2	0.30	0.7928
geo_num*origin	5	Nat	8	Intro	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	5	Nat	8	Nat	0.5000	0.7465	2	0.67	0.5719
geo_num*origin	5	Nat	9	Intro	-0.5000	0.7465	2	-0.67	0.5719
geo_num*origin	5	Nat	9	Nat	-0.5000	0.6095	2	-0.82	0.4982
geo_num*origin	6	Intro	6	Nat	-0.6009	0.7209	2	-0.83	0.4923
geo_num*origin	6	Intro	7	Intro	-0.3333	0.7038	2	-0.47	0.6824
geo_num*origin	6	Intro	8	Intro	-111E-18	0.8619	2	-0.00	1.0000
geo_num*origin	6	Intro	8	Nat	-111E-18	0.8619	2	-0.00	1.0000
geo_num*origin	6	Intro	9	Intro	-1.0000	0.8619	2	-1.16	0.3657
geo_num*origin	6	Intro	9	Nat	-1.0000	0.7465	2	-1.34	0.3123
geo_num*origin	6	Nat	7	Intro	0.2675	0.5216	2	0.51	0.6590
geo_num*origin	6	Nat	8	Intro	0.6009	0.7209	2	0.83	0.4923
geo_num*origin	6	Nat	8	Nat	0.6009	0.7209	2	0.83	0.4923
geo_num*origin	6	Nat	9	Intro	-0.3991	0.7209	2	-0.55	0.6355
geo_num*origin	6	Nat	9	Nat	-0.3991	0.5779	2	-0.69	0.5612
geo_num*origin	7	Intro	8	Intro	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	7	Intro	8	Nat	0.3333	0.7038	2	0.47	0.6824
geo_num*origin	7	Intro	9	Intro	-0.6667	0.7038	2	-0.95	0.4435
geo_num*origin	7	Intro	9	Nat	-0.6667	0.5564	2	-1.20	0.3536
geo_num*origin	8	Intro	8	Nat	-197E-19	0.8619	2	-0.00	1.0000
geo_num*origin	8	Intro	9	Intro	-1.0000	0.8619	2	-1.16	0.3657
geo_num*origin	8	Intro	9	Nat	-1.0000	0.7465	2	-1.34	0.3123
geo_num*origin	8	Nat	9	Intro	-1.0000	0.8619	2	-1.16	0.3657
geo_num*origin	8	Nat	9	Nat	-1.0000	0.7465	2	-1.34	0.3123
geo_num*origin	9	Intro	9	Nat	-277E-17	0.7465	2	-0.00	1.0000