

	year					
	1	2	3	4	5	6
	N	N	N	N	N	N
period						
After	.	.	.	16	16	16
Before	16	16	16	.	.	.

	site			
	1	2	3	4
	N	N	N	N
siteclass				
Control	.	.	24	24
Impact	24	24	.	.

	site			
	1	2	3	4
	N	N	N	N
year				
1	4	4	4	4
2	4	4	4	4
3	4	4	4	4
4	4	4	4	4
5	4	4	4	4
6	4	4	4	4

The GLM Procedure

Class Level Information		
Class	Levels	Values
period	2	After Before
siteclass	2	Control Impact
year	6	1 2 3 4 5 6
site	4	1 2 3 4
sample	4	1 2 3 4

Number of Observations Read	96
Number of Observations Used	96

Schematic BACI ANOVA table
model ANOVA table - I

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The GLM Procedure

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	23	25.5392710	1.1104031	1.04	0.4344
Error	72	77.1016319	1.0708560		
Corrected Total	95	102.6409029			

R-Square	Coeff Var	Root MSE	y Mean
0.248822	-2586.855	1.034822	-0.040003

Source	DF	Type I SS	Mean Square	F Value	Pr > F
period	1	0.17784644	0.17784644	0.17	0.6848
siteclass	1	1.85247965	1.85247965	1.73	0.1926
period*siteclass	1	0.10138800	0.10138800	0.09	0.7592
year(period)	4	6.05619398	1.51404850	1.41	0.2381
site(siteclass)	2	1.13177105	0.56588553	0.53	0.5918
year*site(peri*site)	14	16.21959193	1.15854228	1.08	0.3882
sitecla*year(period)	0	0.00000000	.	.	.
period*site(sitecla)	0	0.00000000	.	.	.

Source	DF	Type III SS	Mean Square	F Value	Pr > F
period	1	0.17784644	0.17784644	0.17	0.6848
siteclass	1	1.85247965	1.85247965	1.73	0.1926
period*siteclass	1	0.10138800	0.10138800	0.09	0.7592
year(period)	4	6.05619398	1.51404850	1.41	0.2381
site(siteclass)	2	1.13177105	0.56588553	0.53	0.5918
year*site(peri*site)	8	10.24417505	1.28052188	1.20	0.3138
sitecla*year(period)	4	4.31499179	1.07874795	1.01	0.4095
period*site(sitecla)	2	1.66042509	0.83021255	0.78	0.4644

The GLM Procedure

Source	Type III Expected Mean Square
period	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 8 \text{ Var}(\text{sitecla}*\text{year}(\text{period})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 16 \text{ Var}(\text{year}(\text{period})) + Q(\text{period}, \text{period}*\text{siteclass})$
siteclass	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 8 \text{ Var}(\text{sitecla}*\text{year}(\text{period})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 24 \text{ Var}(\text{site}(\text{siteclass})) + Q(\text{siteclass}, \text{period}*\text{siteclass})$
period*siteclass	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 8 \text{ Var}(\text{sitecla}*\text{year}(\text{period})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + Q(\text{period}*\text{siteclass})$
year(period)	$\text{Var}(\text{Error}) + 8 \text{ Var}(\text{sitecla}*\text{year}(\text{period})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 16 \text{ Var}(\text{year}(\text{period}))$
site(siteclass)	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 24 \text{ Var}(\text{site}(\text{siteclass}))$
year*site(peri*site)	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site}))$
sitecla*year(period)	$\text{Var}(\text{Error}) + 8 \text{ Var}(\text{sitecla}*\text{year}(\text{period})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site}))$
period*site(sitecla)	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site}))$

The GLM Procedure

Class Level Information		
Class	Levels	Values
period	2	After Before
siteclass	2	Control Impact
year	6	1 2 3 4 5 6
site	4	1 2 3 4
sample	4	1 2 3 4

Number of Observations Read	96
Number of Observations Used	96

***Schematic BACI ANOVA table
model ANOVA table- II***

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The GLM Procedure

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	23	25.5392710	1.1104031	1.04	0.4344
Error	72	77.1016319	1.0708560		
Corrected Total	95	102.6409029			

R-Square	Coeff Var	Root MSE	y Mean
0.248822	-2586.855	1.034822	-0.040003

Source	DF	Type I SS	Mean Square	F Value	Pr > F
period	1	0.17784644	0.17784644	0.17	0.6848
siteclass	1	1.85247965	1.85247965	1.73	0.1926
period*siteclass	1	0.10138800	0.10138800	0.09	0.7592
year(period)	4	6.05619398	1.51404850	1.41	0.2381
site(siteclass)	2	1.13177105	0.56588553	0.53	0.5918
year*site(peri*site)	14	16.21959193	1.15854228	1.08	0.3882
period*site(sitecla)	0	0.00000000	.	.	.

Source	DF	Type III SS	Mean Square	F Value	Pr > F
period	1	0.17784644	0.17784644	0.17	0.6848
siteclass	1	1.85247965	1.85247965	1.73	0.1926
period*siteclass	1	0.10138800	0.10138800	0.09	0.7592
year(period)	4	6.05619398	1.51404850	1.41	0.2381
site(siteclass)	2	1.13177105	0.56588553	0.53	0.5918
year*site(peri*site)	12	14.55916684	1.21326390	1.13	0.3481
period*site(sitecla)	2	1.66042509	0.83021255	0.78	0.4644

The GLM Procedure

Source	Type III Expected Mean Square
period	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 16 \text{ Var}(\text{year}(\text{period})) + Q(\text{period}, \text{period}*\text{siteclass})$
siteclass	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 24 \text{ Var}(\text{site}(\text{siteclass})) + Q(\text{siteclass}, \text{period}*\text{siteclass})$
period*siteclass	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + Q(\text{period}*\text{siteclass})$
year(period)	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 16 \text{ Var}(\text{year}(\text{period}))$
site(siteclass)	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 24 \text{ Var}(\text{site}(\text{siteclass}))$
year*site(peri*site)	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site}))$
period*site(sitecla)	$\text{Var}(\text{Error}) + 12 \text{ Var}(\text{period}*\text{site}(\text{sitecla})) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site}))$

**The GLM Procedure
Tests of Hypotheses for Mixed Model Analysis of Variance**

Dependent Variable: y

	Source	DF	Type III SS	Mean Square	F Value	Pr > F
*	period	1	0.177846	0.177846	0.16	0.7495
	Error	1.2295	1.390569	1.130997		
Error: MS(year(period)) - MS(year*site(peri*site)) + MS(period*site(sitecla)) - 13E-16*MS(Error)						
* This test assumes one or more other fixed effects are zero.						

	Source	DF	Type III SS	Mean Square	F Value	Pr > F
*	siteclass	1	1.852480	1.852480	3.27	0.2121
	Error	2	1.131771	0.565886		
Error: MS(site(siteclass))						
* This test assumes one or more other fixed effects are zero.						

Source	DF	Type III SS	Mean Square	F Value	Pr > F
period*siteclass	1	0.101388	0.101388	0.12	0.7601
site(siteclass)	2	1.131771	0.565886	0.68	0.5947
Error	2	1.660425	0.830213		
Error: MS(period*site(sitecla))					

Source	DF	Type III SS	Mean Square	F Value	Pr > F
year(period)	4	6.056194	1.514048	1.25	0.3428
period*site(sitecla)	2	1.660425	0.830213	0.68	0.5231
Error	12	14.559167	1.213264		
Error: MS(year*site(peri*site))					

Source	DF	Type III SS	Mean Square	F Value	Pr > F
year*site(peri*site)	12	14.559167	1.213264	1.13	0.3481
Error: MS(Error)	72	77.101632	1.070856		

The GLM Procedure

Class Level Information		
Class	Levels	Values
period	2	After Before
siteclass	2	Control Impact
year	6	1 2 3 4 5 6
site	4	1 2 3 4
sample	4	1 2 3 4

Number of Observations Read	96
Number of Observations Used	96

**Schematic BACI ANOVA table
model ANOVA table - III**

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The GLM Procedure

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	23	25.5392710	1.1104031	1.04	0.4344
Error	72	77.1016319	1.0708560		
Corrected Total	95	102.6409029			

R-Square	Coeff Var	Root MSE	y Mean
0.248822	-2586.855	1.034822	-0.040003

Source	DF	Type I SS	Mean Square	F Value	Pr > F
period	1	0.17784644	0.17784644	0.17	0.6848
siteclass	1	1.85247965	1.85247965	1.73	0.1926
period*siteclass	1	0.10138800	0.10138800	0.09	0.7592
year(period)	4	6.05619398	1.51404850	1.41	0.2381
site(siteclass)	2	1.13177105	0.56588553	0.53	0.5918
year*site(peri*site)	14	16.21959193	1.15854228	1.08	0.3882

Source	DF	Type III SS	Mean Square	F Value	Pr > F
period	1	0.17784644	0.17784644	0.17	0.6848
siteclass	1	1.85247965	1.85247965	1.73	0.1926
period*siteclass	1	0.10138800	0.10138800	0.09	0.7592
year(period)	4	6.05619398	1.51404850	1.41	0.2381
site(siteclass)	2	1.13177105	0.56588553	0.53	0.5918
year*site(peri*site)	14	16.21959193	1.15854228	1.08	0.3882

The GLM Procedure

Source	Type III Expected Mean Square
period	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 16 \text{ Var}(\text{year}(\text{period})) + \text{Q}(\text{period}, \text{period}*\text{siteclass})$
siteclass	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 24 \text{ Var}(\text{site}(\text{siteclass})) + \text{Q}(\text{siteclass}, \text{period}*\text{siteclass})$
period*siteclass	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + \text{Q}(\text{period}*\text{siteclass})$
year(period)	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 16 \text{ Var}(\text{year}(\text{period}))$
site(siteclass)	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site})) + 24 \text{ Var}(\text{site}(\text{siteclass}))$
year*site(peri*site)	$\text{Var}(\text{Error}) + 4 \text{ Var}(\text{year}*\text{site}(\text{peri}*\text{site}))$

The GLM Procedure
Tests of Hypotheses for Mixed Model Analysis of Variance

Dependent Variable: y

	Source	DF	Type III SS	Mean Square	F Value	Pr > F
*	period	1	0.177846	0.177846	0.12	0.7491
	Error	4	6.056194	1.514048		
Error: MS(year(period))						
* This test assumes one or more other fixed effects are zero.						

	Source	DF	Type III SS	Mean Square	F Value	Pr > F
*	siteclass	1	1.852480	1.852480	3.27	0.2121
	Error	2	1.131771	0.565886		
Error: MS(site(siteclass))						
* This test assumes one or more other fixed effects are zero.						

Source	DF	Type III SS	Mean Square	F Value	Pr > F
period*siteclass	1	0.101388	0.101388	0.09	0.7717
year(period)	4	6.056194	1.514048	1.31	0.3150
site(siteclass)	2	1.131771	0.565886	0.49	0.6237
Error	14	16.219592	1.158542		
Error: MS(year*site(peri*site))					

Source	DF	Type III SS	Mean Square	F Value	Pr > F
year*site(peri*site)	14	16.219592	1.158542	1.08	0.3882
Error: MS(Error)	72	77.101632	1.070856		