

```

proc format;
value fmtlabel 0 = "BS" 1 = "IS";
value fmtstruc 0 = "Unli" 1 = "Link";
value fmtunder 1 = "Yes" 2 = "No";
run;

data sample;
input label struc under wt @@;
format label fmtlabel. struc fmtstruc. under fmtunder.;
cards;
0 1 1 14
0 1 2 32
0 0 1 10
0 0 2 37
1 1 1 25
1 1 2 15
1 0 1 14
1 0 2 28
;
proc catmod;
weight wt;
response mean;
model under = label|struc / noiter freq prob design; run;
run;

```

The CATMOD Procedure

Data Summary			
Response	under	Response Levels	2
Weight Variable	wt	Populations	4
Data Set	SAMPLE	Total Frequency	175
Frequency Missing	0	Observations	8

Population Profiles			
Sample	label	struc	Sample Size
1	BS	Unli	47
2	BS	Link	46
3	IS	Unli	42
4	IS	Link	40

Response Profiles	
Response	under
1	Yes
2	No

Response Frequencies		
Sample	Response Number	
	1	2
1	10	37
2	14	32
3	14	28
4	25	15

Response Probabilities		
Sample	Response Number	
	1	2
1	0.21277	0.78723
2	0.30435	0.69565
3	0.33333	0.66667
4	0.62500	0.37500

Response Functions and Design Matrix					
Sample	Response Function	Design Matrix			
		1	2	3	4
1	1.78723	1	1	1	1
2	1.69565	1	1	-1	-1
3	1.66667	1	-1	1	-1
4	1.37500	1	-1	-1	1

Analysis of Variance			
Source	DF	Chi-Square	Pr > ChiSq
Intercept	1	2203.78	<.0001

Analysis of Variance					
Source	DF	Chi-Square	Pr > ChiSq		
label	1	10.08	0.0015		
struc	1	7.60	0.0058		
label*struc	1	2.07	0.1500		
Residual	0	.	.		
Analysis of Weighted Least Squares Estimates					
Parameter		Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept		1.6311	0.0347	2203.78	<.0001
label	BS	0.1103	0.0347	10.08	0.0015
struc	Unli	0.0958	0.0347	7.60	0.0058
label*struc	BS Unli	-0.0500	0.0347	2.07	0.1500

```

proc format;
value fmtcond 1 = "BSLink" 2 = "BSUnlin" 3 = "ISLink" 4 = "ISUnlin";
value fmtunder 1 = "Yes" 2 = "No";
run;

data sample;
input condition under wt @@;
format condition fmtcond. under fmtunder.;
cards;
1 1 14
1 2 32
2 1 10
2 2 37
3 1 25
3 2 15
4 1 14
4 2 28
;
proc catmod;
weight wt;
response mean;
model under = condition / noiter freq prob design; run;
proc catmod;
weight wt;
response mean;
model under = condition / noiter freq prob design;
contrast 'Main Effect of Structure' Condition 2 2 0;
contrast 'Main Effect of Label' Condition 2 0 2;
contrast 'Interaction' Condition 0 2 2;
contrast 'Effect of Structure given Balance Sheet Labeling 1 versus 2'
Condition -1 1 0;
contrast 'Effect of Labeling given Linked Structure 1 versus 3' Condition -1
0 1;
contrast 'Effect of Labeling given Unlinked Structure 2 versus 4' Condition -
1 -2 -1;
contrast 'Effect of Structure given Income Statement Labeling 3 versus 4'
Condition -1 -1 -2;

run;

```

1	BSLink	a
2	BSUnlin	b
3	ISLink	c
4	ISUnlin	d

The CATMOD Procedure

Data Summary			
Response	under	Response Levels	2
Weight Variable	wt	Populations	4
Data Set	SAMPLE	Total Frequency	175
Frequency Missing	0	Observations	8

Population Profiles		
Sample	condition	Sample Size
1	BSLink	46
2	BSUnlin	47
3	ISLink	40
4	ISUnlin	42

Response Profiles	
Response	under
1	Yes
2	No

Response Frequencies		
Sample	Response Number	
	1	2
1	14	32
2	10	37
3	25	15
4	14	28

Response Probabilities		
Sample	Response Number	
	1	2
1	0.30435	0.69565
2	0.21277	0.78723
3	0.62500	0.37500
4	0.33333	0.66667

Response Functions and Design Matrix					
Sample	Response Function	Design Matrix			
		1	2	3	4
1	1.69565	1	1	0	0
2	1.78723	1	0	1	0
3	1.37500	1	0	0	1
4	1.66667	1	-1	-1	-1

Analysis of Variance			
Source	DF	Chi-Square	Pr > ChiSq
Intercept	1	2203.78	<.0001

Analysis of Variance			
Source	DF	Chi-Square	Pr > ChiSq
condition	3	18.67	0.0003
Residual	0	.	.

Analysis of Weighted Least Squares Estimates					
Parameter		Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept		1.6311	0.0347	2203.78	<.0001
condition	BSLink	0.0645	0.0592	1.19	0.2761
	BSUnlin	0.1561	0.0547	8.15	0.0043
	ISLink	-0.2561	0.0643	15.86	<.0001

The CATMOD Procedure

Data Summary			
Response	under	Response Levels	2
Weight Variable	wt	Populations	4
Data Set	SAMPLE	Total Frequency	175
Frequency Missing	0	Observations	8

Population Profiles		
Sample	condition	Sample Size
1	BSLink	46
2	BSUnlin	47
3	ISLink	40
4	ISUnlin	42

Response Profiles	
Response	under
1	Yes
2	No

Response Frequencies		
Sample	Response Number	
	1	2
1	14	32
2	10	37
3	25	15
4	14	28

Response Probabilities		
Sample	Response Number	
	1	2
1	0.30435	0.69565
2	0.21277	0.78723

Response Probabilities		
	Response Number	
Sample	1	2
3	0.62500	0.37500
4	0.33333	0.66667

Response Functions and Design Matrix					
Sample	Response Function	Design Matrix			
		1	2	3	4
1	1.69565	1	1	0	0
2	1.78723	1	0	1	0
3	1.37500	1	0	0	1
4	1.66667	1	-1	-1	-1

Analysis of Variance			
Source	DF	Chi-Square	Pr > ChiSq
Intercept	1	2203.78	<.0001
condition	3	18.67	0.0003
Residual	0	.	.

Analysis of Weighted Least Squares Estimates					
Parameter		Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept		1.6311	0.0347	2203.78	<.0001
condition	BSLink	0.0645	0.0592	1.19	0.2761
	BSUnlin	0.1561	0.0547	8.15	0.0043
	ISLink	-0.2561	0.0643	15.86	<.0001

Analysis of Contrasts			
Contrast	DF	Chi-Square	Pr > ChiSq
Main Effect of Structure	1	10.08	0.0015
Main Effect of Label	1	7.60	0.0058
Interaction	1	2.07	0.1500
Effect of Structure given Balance Sheet Labeling 1 versus 2	1	1.03	0.3109
Effect of Labeling given Linked Structure 1 versus 3	1	9.83	0.0017
Effect of Labeling given Unlinked Structure 2 versus 4	1	1.64	0.2001
Effect of Structure given Income Statement Labeling 3 versus 4	1	7.63	0.0057

```

data summs;
input label $ struc $ under $ wt @@;
cards;
BS Link Yes 14
BS Link No 32
BS Unlink Yes 10
BS Unlink No 37
IS Link Yes 25
IS Link No 15
IS Unlink Yes 14
IS Unlink No 28
;
data summs; set summs;
proc catmod;
weight wt;
model under = label|struc / noiter freq prob design; contrast 'IS Link vs.
average of other three'
label -1.333 struc 1.333 label*struc -1.333/estimate=both; run;
run;

```

The CATMOD Procedure

Data Summary			
Response	under	Response Levels	2
Weight Variable	wt	Populations	4
Data Set	SUMMS	Total Frequency	175
Frequency Missing	0	Observations	8

Population Profiles			
Sample	label	struc	Sample Size
1	BS	Link	46
2	BS	Unlink	47
3	IS	Link	40
4	IS	Unlink	42

Response Profiles	
Response	under
1	No

Response Profiles	
Response	under
2	Yes

Response Frequencies		
Sample	Response Number	
	1	2
1	32	14
2	37	10
3	15	25
4	28	14

Response Probabilities		
Sample	Response Number	
	1	2
1	0.69565	0.30435
2	0.78723	0.21277
3	0.37500	0.62500
4	0.66667	0.33333

Response Functions and Design Matrix					
Sample	Response Function	Design Matrix			
		1	2	3	4
1	0.82668	1	1	1	1
2	1.30833	1	1	-1	-1

Response Functions and Design Matrix					
Sample	Response Function	Design Matrix			
		1	2	3	4
3	-0.51083	1	-1	1	-1
4	0.69315	1	-1	-1	1

Maximum Likelihood Analysis					
Maximum likelihood computations converged.					

Maximum Likelihood Analysis of Variance					
Source	DF	Chi-Square	Pr > ChiSq		
Intercept	1	12.11	0.0005		
label	1	8.60	0.0034		
struc	1	6.41	0.0114		
label*struc	1	1.18	0.2781		
Likelihood Ratio	0	.	.		

Analysis of Maximum Likelihood Estimates					
Parameter		Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept		0.5793	0.1665	12.11	0.0005
label	BS	0.4882	0.1665	8.60	0.0034
struc	Link	-0.4214	0.1665	6.41	0.0114
label*struc	BS Link	0.1806	0.1665	1.18	0.2781

Contrasts of Maximum Likelihood Estimates			
Contrast	DF	Chi-Square	Pr > ChiSq
IS Link vs. average of other three	1	14.66	0.0001

Analysis of Contrasts of Maximum Likelihood Estimates									
Contrast	Type	Row	Estimate	Standard Error	Chi-Square	Pr > ChiSq	Alpha	Confidence Limits	
IS Link vs. average of other three	PARM	1	-1.4532	0.3795	14.66	0.0001	0.05	-2.1970	-0.7094
IS Link vs. average of other three	EXP	1	0.2338	0.0887	14.66	0.0001	0.05	0.1111	0.4920