

The SAS System

Obs	pie	hours	taste
1	custard	4.1	5.5
2	custard	3.2	4.9
3	custard	2.3	4.6
4	custard	3.0	5.1
5	custard	2.9	4.8
6	custard	3.0	4.8
7	custard	4.1	5.3
8	custard	2.1	4.6
9	custard	2.5	4.6
10	custard	4.2	5.5
11	custard	3.1	5.0
12	custard	4.2	5.6
13	mincemeat	3.7	5.6
14	mincemeat	4.5	6.2
15	mincemeat	4.2	6.2
16	mincemeat	5.4	7.4
17	mincemeat	4.4	6.4
18	mincemeat	3.5	5.7
19	mincemeat	5.0	6.8
20	mincemeat	4.9	6.7
21	mincemeat	3.0	5.1
22	mincemeat	3.8	5.9
23	mincemeat	3.3	5.2
24	mincemeat	3.0	5.1
25	pumpkin	5.9	6.4
26	pumpkin	4.3	5.8
27	pumpkin	4.7	5.6
28	pumpkin	6.3	6.5
29	pumpkin	6.4	6.7
30	pumpkin	5.1	5.9
31	pumpkin	5.6	6.3
32	pumpkin	5.2	5.8
33	pumpkin	4.3	5.6
34	pumpkin	4.0	5.3
35	pumpkin	4.4	5.6
36	pumpkin	4.1	5.7

The UNIVARIATE Procedure
Variable: hours

Moments			
N	36	Sum Weights	36
Mean	4.10277778	Sum Observations	147.7
Std Deviation	1.08139754	Variance	1.16942063
Skewness	0.24577376	Kurtosis	-0.3827709
Uncorrected SS	646.91	Corrected SS	40.9297222
Coeff Variation	26.3576922	Std Error Mean	0.18023292

Basic Statistical Measures			
Location		Variability	
Mean	4.102778	Std Deviation	1.08140
Median	4.150000	Variance	1.16942
Mode	3.000000	Range	4.30000
		Interquartile Range	1.65000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	22.76375	Pr > t 	<.0001
Sign	M	18	Pr >= M 	<.0001
Signed Rank	S	333	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	6.40
99%	6.40
95%	6.30
90%	5.60
75% Q3	4.80
50% Median	4.15
25% Q1	3.15
10%	2.90
5%	2.30
1%	2.10
0% Min	2.10

The UNIVARIATE Procedure
Variable: hours

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
2.1	8	5.4	16
2.3	3	5.6	31
2.5	9	5.9	25
2.9	5	6.3	28
3.0	24	6.4	29

The GLM Procedure

Class Level Information		
Class	Levels	Values
pie	3	custard mincemeat pumpkin

Number of Observations Read	36
Number of Observations Used	36

The GLM Procedure

Dependent Variable: taste

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	16.27415974	3.25483195	190.94	<.0001
Error	30	0.51139581	0.01704653		
Corrected Total	35	16.78555556			

R-Square	Coeff Var	Root MSE	taste Mean
0.969534	2.306303	0.130562	5.661111

Source	DF	Type I SS	Mean Square	F Value	Pr > F
pie	2	7.33388889	3.66694444	215.11	<.0001
hours	1	8.10305185	8.10305185	475.35	<.0001
hours*pie	2	0.83721900	0.41860950	24.56	<.0001

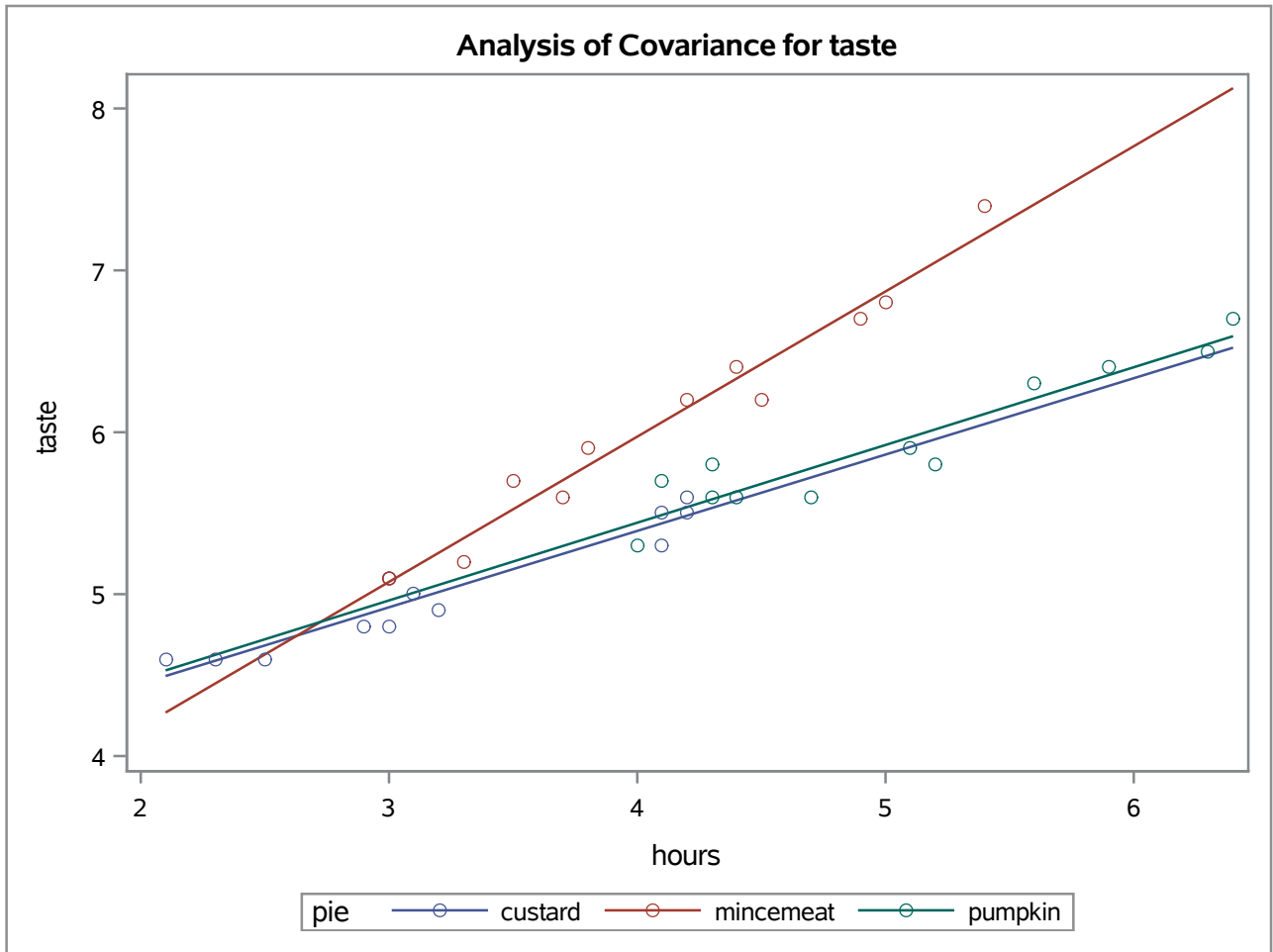
Source	DF	Type III SS	Mean Square	F Value	Pr > F
pie	2	0.35707658	0.17853829	10.47	0.0004
hours	1	8.06118532	8.06118532	472.89	<.0001
hours*pie	2	0.83721900	0.41860950	24.56	<.0001

Parameter	Estimate		Standard Error	t Value	Pr > t
Intercept	3.520837190	B	0.23354727	15.08	<.0001
pie custard	-0.016870510	B	0.28999258	-0.06	0.9540
pie mincemeat	-1.135815320	B	0.30950499	-3.67	0.0009
pie pumpkin	0.000000000	B	.	.	.
hours	0.480098735	B	0.04586786	10.47	<.0001
hours*pie custard	-0.008460496	B	0.06934396	-0.12	0.9037
hours*pie mincemeat	0.416815794	B	0.06724651	6.20	<.0001
hours*pie pumpkin	0.000000000	B	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

The GLM Procedure

Dependent Variable: taste



The GLM Procedure

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The GLM Procedure

Dependent Variable: taste

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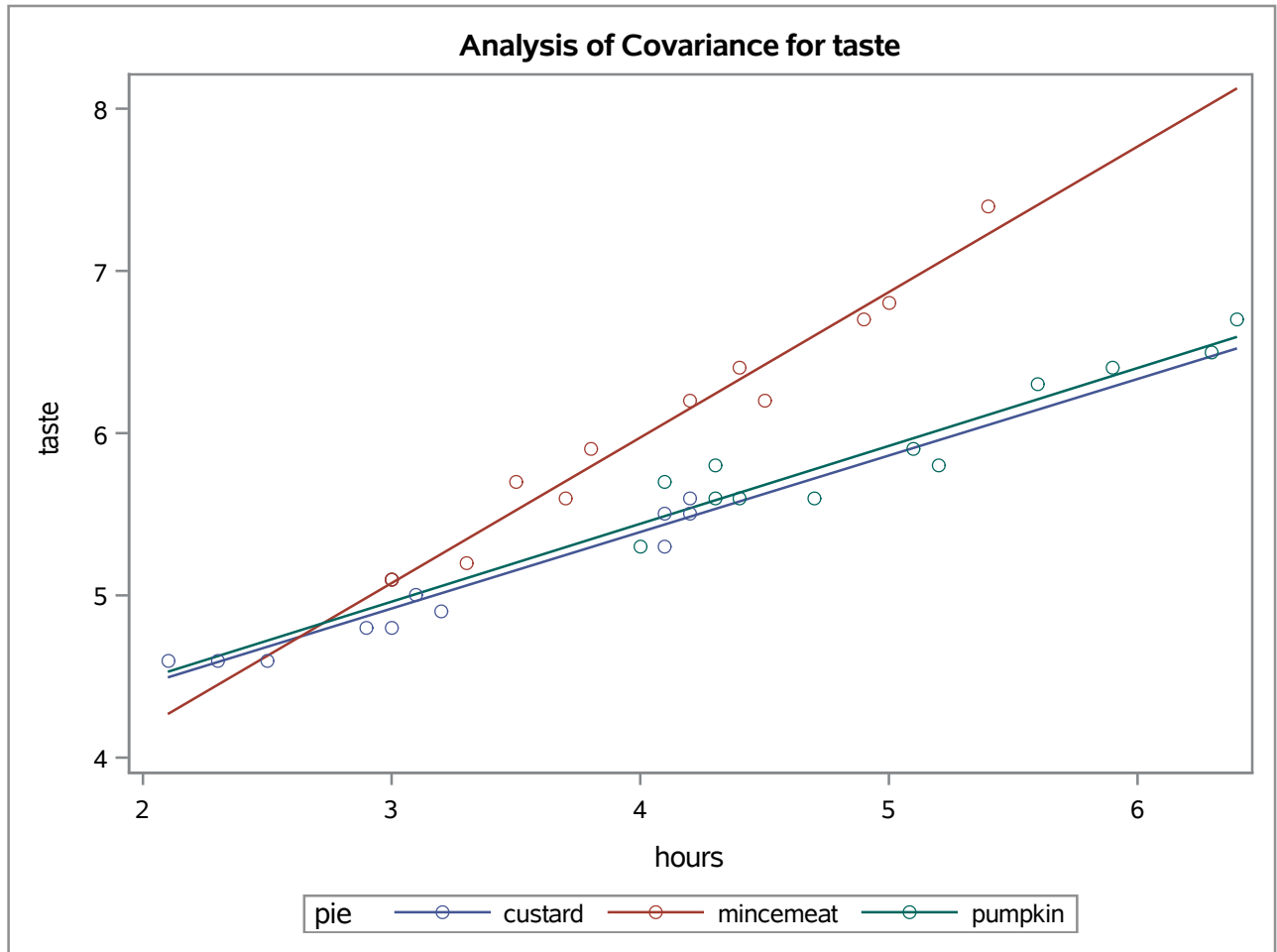
Parameter	Estimate	Standard Error	t Value	Pr > t
pumpkin at 3.2 hours	5.05715314	0.09180258	55.09	<.0001
custard at 3.2 hours	5.01320904	0.03771252	132.93	<.0001
mincemeat at 3.2 hours	5.25514836	0.05658749	92.87	<.0001

Parameter	Estimate		Standard Error	t Value	Pr > t
Intercept	3.520837190	B	0.23354727	15.08	<.0001
pie custard	-0.016870510	B	0.28999258	-0.06	0.9540
pie mincemeat	-1.135815320	B	0.30950499	-3.67	0.0009
pie pumpkin	0.000000000	B	.	.	.
hours	0.480098735	B	0.04586786	10.47	<.0001
hours*pie custard	-0.008460496	B	0.06934396	-0.12	0.9037
hours*pie mincemeat	0.416815794	B	0.06724651	6.20	<.0001
hours*pie pumpkin	0.000000000	B	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

The GLM Procedure

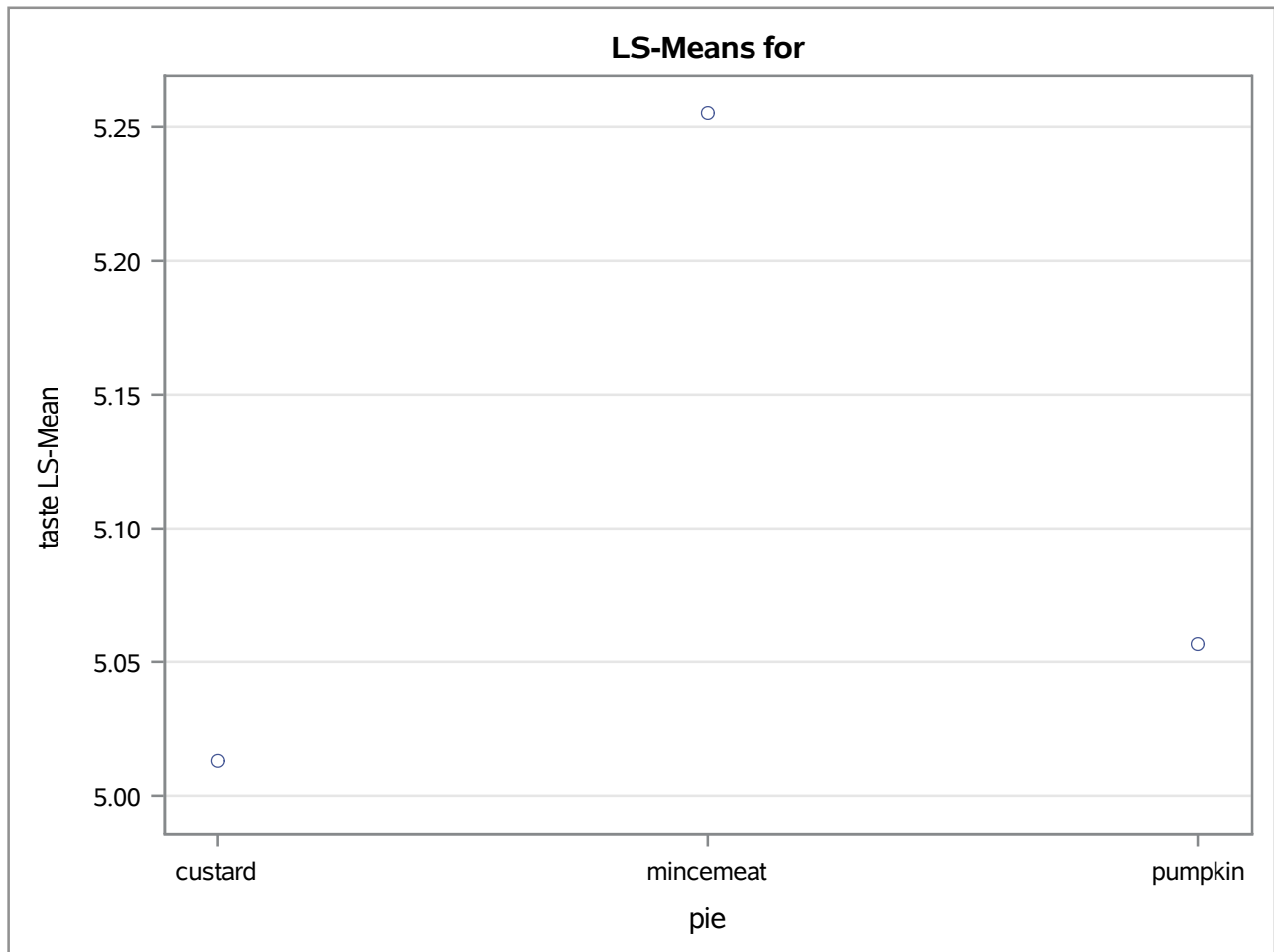
Dependent Variable: taste



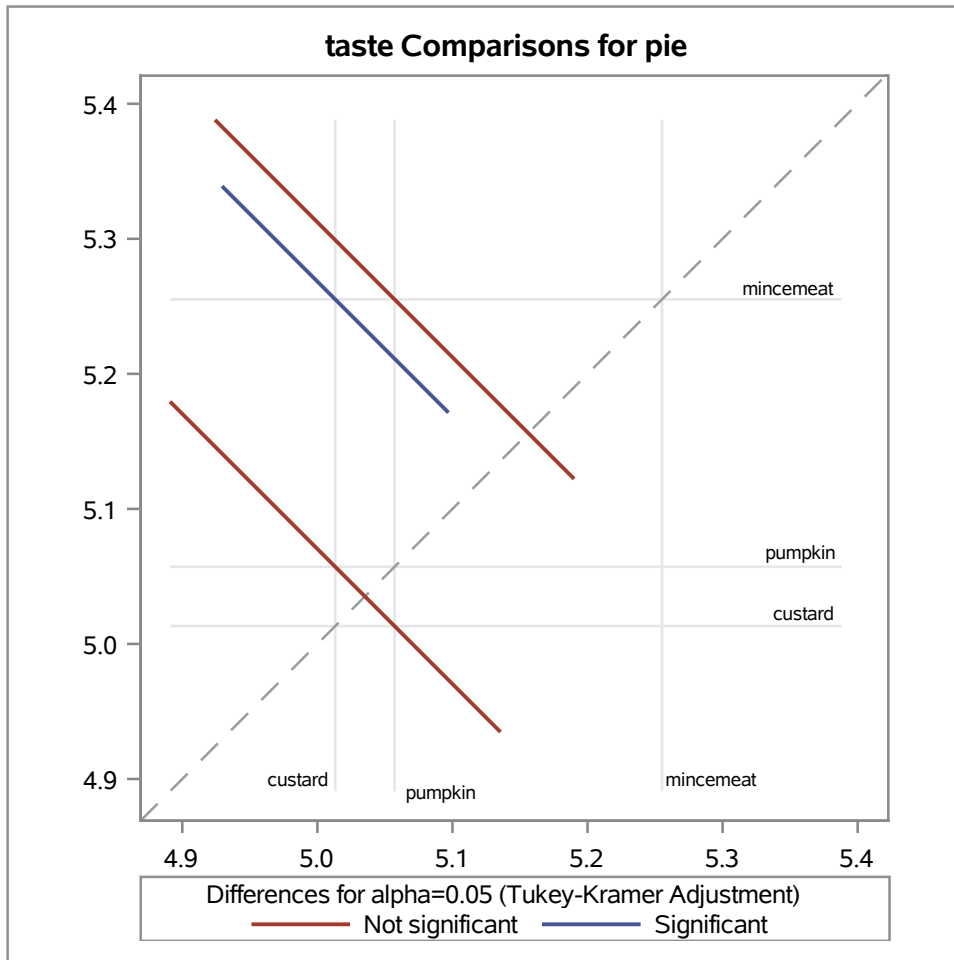
The GLM Procedure
 Least Squares Means at hours=3.2
 Adjustment for Multiple Comparisons: Tukey-Kramer

pie	taste LSMEAN	LSMEAN Number
custard	5.01320904	1
mincemeat	5.25514836	2
pumpkin	5.05715314	3

Least Squares Means for effect pie Pr > t for H0: LSMean(i)=LSMean(j)			
Dependent Variable: taste			
i/j	1	2	3
1		0.0035	0.8979
2	0.0035		0.1753
3	0.8979	0.1753	



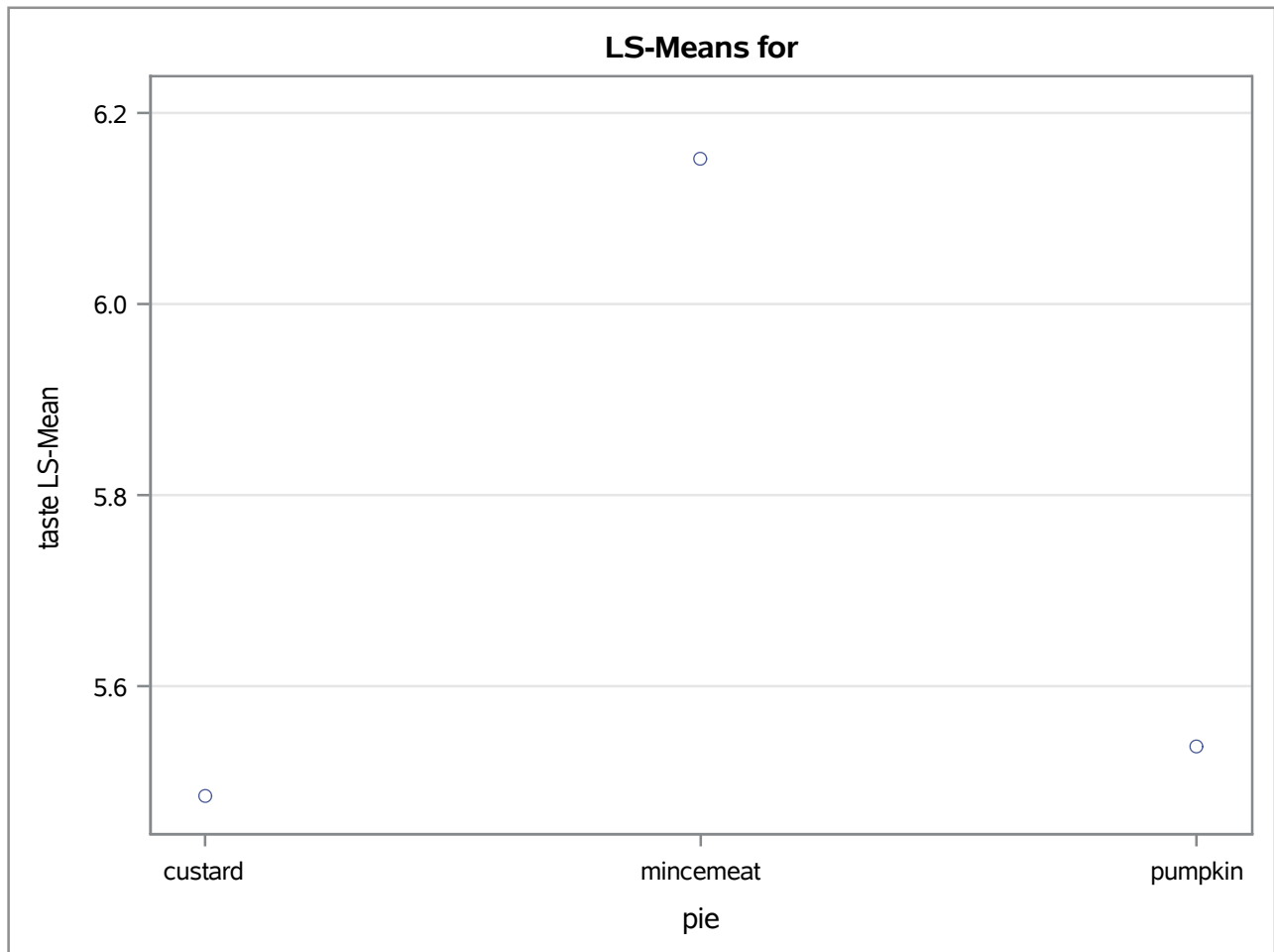
The GLM Procedure
Least Squares Means at hours=3.2
Adjustment for Multiple Comparisons: Tukey-Kramer



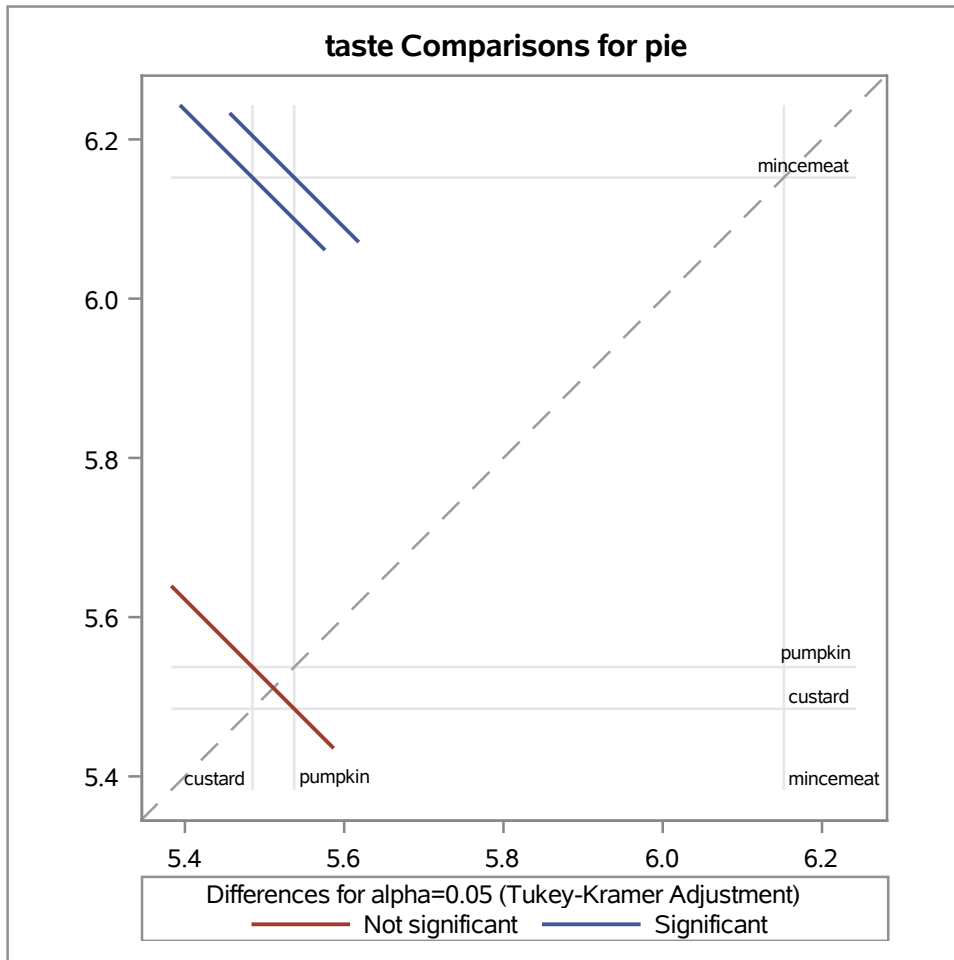
The GLM Procedure
 Least Squares Means at hours=4.2
 Adjustment for Multiple Comparisons: Tukey-Kramer

pie	taste LSMEAN	LSMEAN Number
custard	5.48484728	1
mincemeat	6.15206289	2
pumpkin	5.53725188	3

Least Squares Means for effect pie Pr > t for H0: LSMean(i)=LSMean(j)			
Dependent Variable: taste			
i/j	1	2	3
1		<.0001	0.8030
2	<.0001		<.0001
3	0.8030	<.0001	



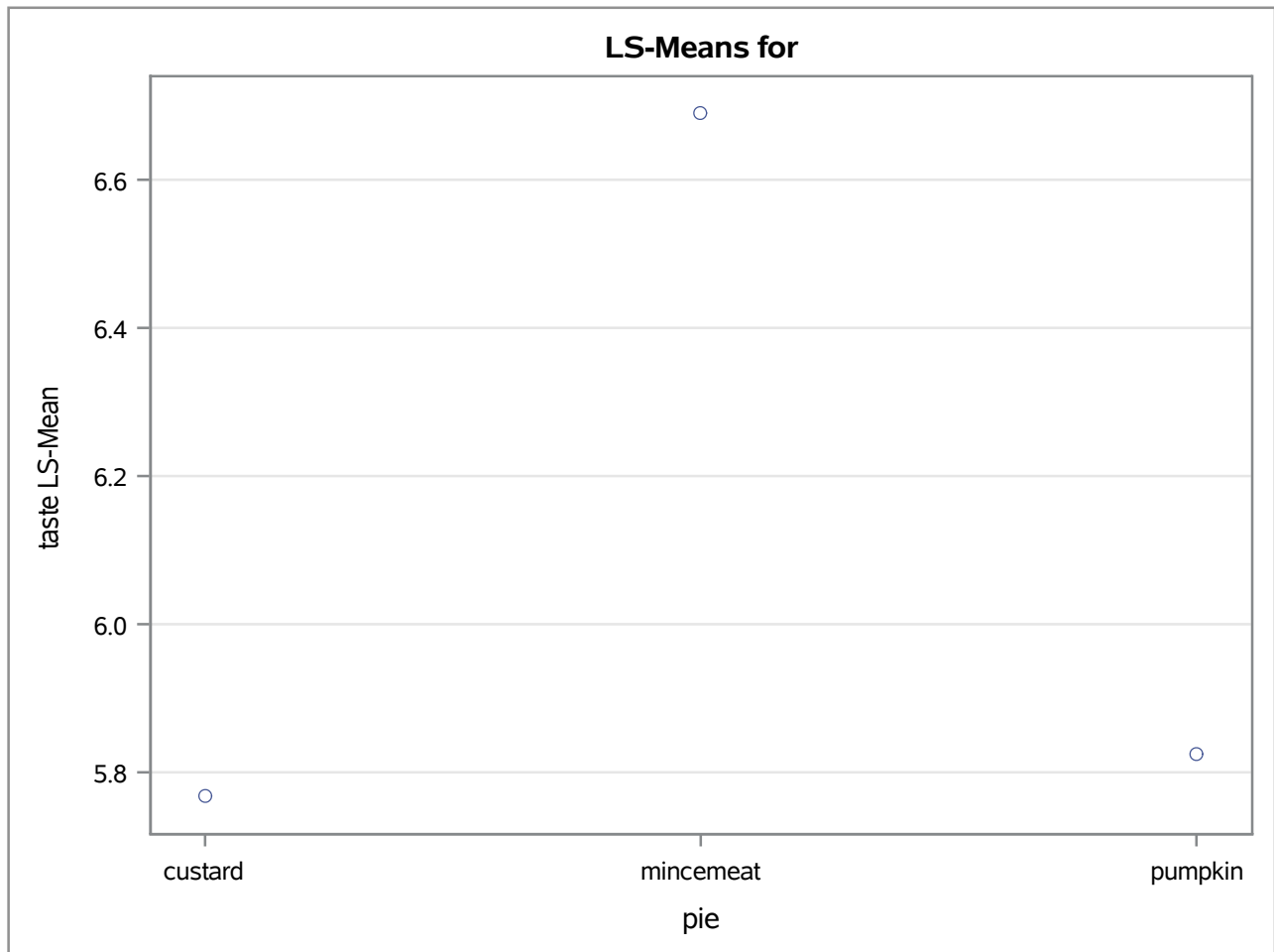
The GLM Procedure
Least Squares Means at hours=4.2
Adjustment for Multiple Comparisons: Tukey-Kramer



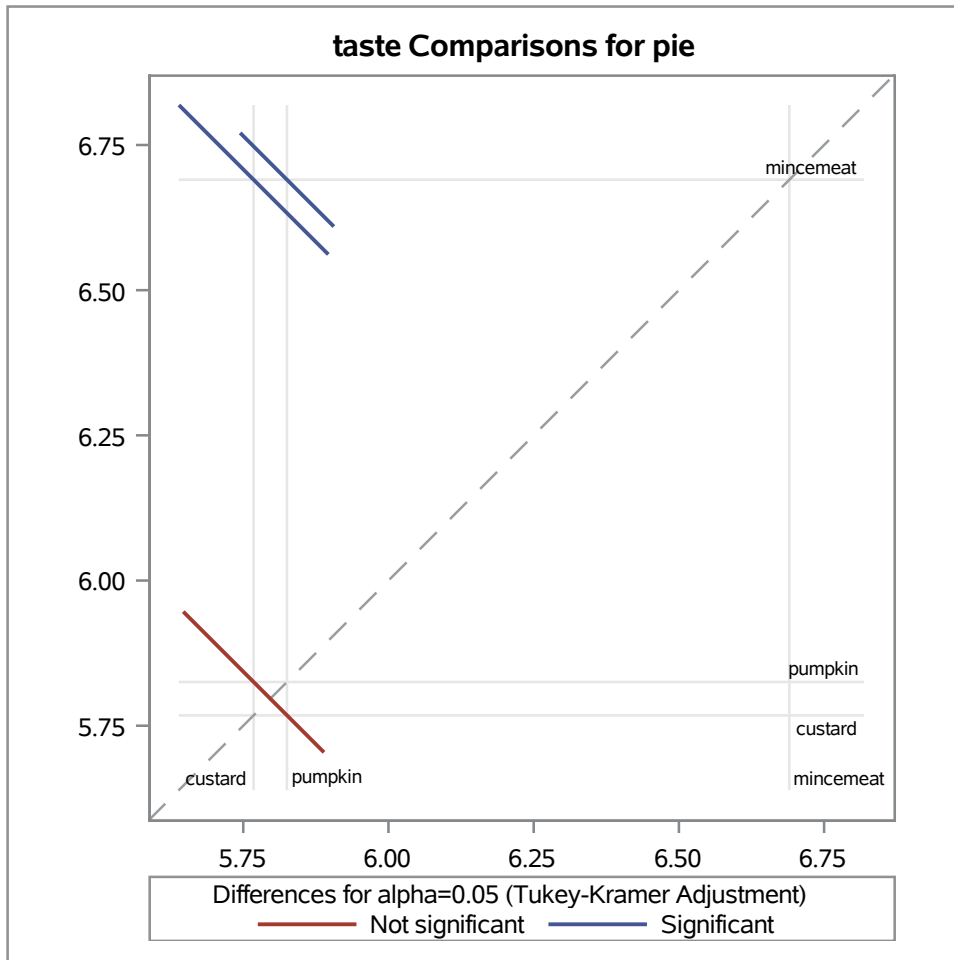
The GLM Procedure
 Least Squares Means at hours=4.8
 Adjustment for Multiple Comparisons: Tukey-Kramer

pie	taste LSMEAN	LSMEAN Number
custard	5.76783023	1
mincemeat	6.69021161	2
pumpkin	5.82531112	3

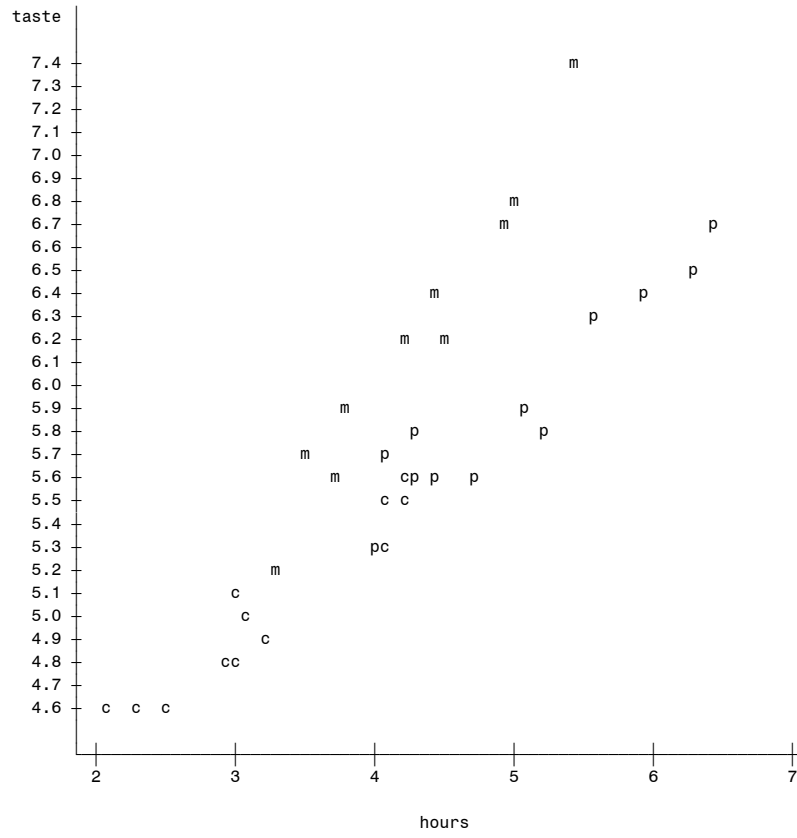
Least Squares Means for effect pie Pr > t for H0: LSMean(i)=LSMean(j)			
Dependent Variable: taste			
i/j	1	2	3
1		<.0001	0.8292
2	<.0001		<.0001
3	0.8292	<.0001	



The GLM Procedure
Least Squares Means at hours=4.8
Adjustment for Multiple Comparisons: Tukey-Kramer



Plot of taste*hours. Symbol is value of pie.



NOTE: 2 obs hidden.