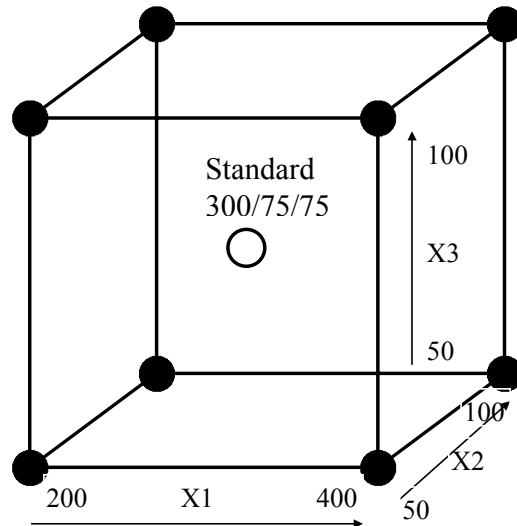


# Overview of DOE - CakeMix application

- Three factors varied: Flour (200-400g), Shortening (50-100g), and Eggpowder (50-100g)
- Response: Taste of resulting cake

Cake Mix Experimental Plan

Cake No	Flour	Shortening	Egg Powder	Taste
1	200	50	50	3.52
2	400	50	50	3.66
3	200	100	50	4.74
4	400	100	50	5.20
5	200	50	100	5.38
6	400	50	100	5.90
7	200	100	100	4.36
8	400	100	100	4.86
9	300	75	75	4.73
10	300	75	75	4.61
11	300	75	75	4.68



## Overview of steps in DOE - part I

### 1. Define Factors

	Name	Abbr.	Units	Type	Use	Settings	Transform	Prec.
1	Flour	Fl	g	Quantitative	Controlled	200 to 400	None	Free
2	Shortening	Sh	g	Quantitative	Controlled	50 to 100	None	Free
3	Eggpowder	Egg	g	Quantitative	Controlled	50 to 100	None	Free

### 2. Define Response(s)

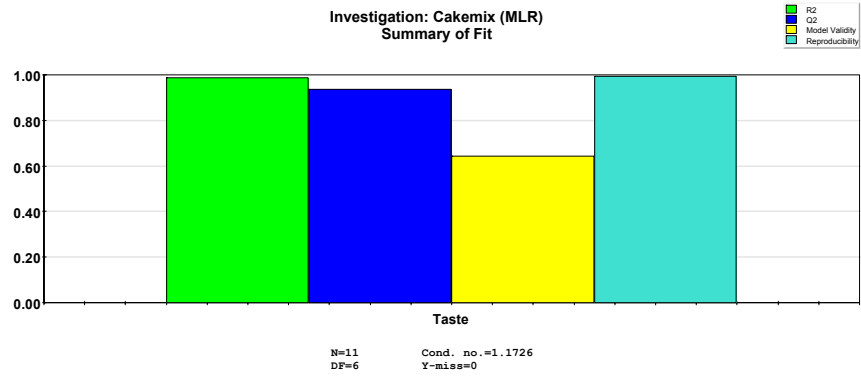
	Name	Abbr.	Units	Transform	MLR Scale	PLS Scale	Type
1	Taste	Ta		None	None	Unit Variance	Regular

### 3. Create Design (Make experiments)

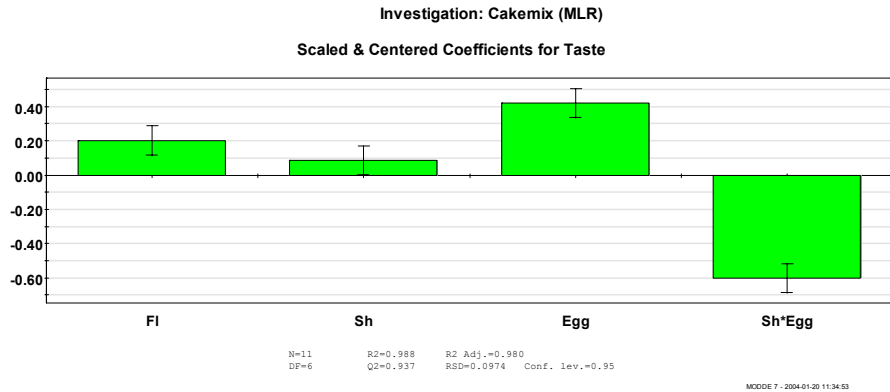
	1	2	3	4	5	6	7	8
	Exp No	Exp Name	Run Order	Incl/Excl	Flour	Shortening	Eggpowder	Taste
2	1	N1	4	Incl	200	50	50	3.52
3	2	N2	5	Incl	400	50	50	3.66
4	3	N3	11	Incl	200	100	50	4.74
5	4	N4	6	Incl	400	100	50	5.2
6	5	N5	7	Incl	200	50	100	5.38
7	6	N6	9	Incl	400	50	100	5.9
8	7	N7	2	Incl	200	100	100	4.36
9	8	N8	8	Incl	400	100	100	4.86
10	9	N9	10	Incl	300	75	75	4.73
11	10	N10	1	Incl	300	75	75	4.61
12	11	N11	3	Incl	300	75	75	4.68

# Overview of steps in DOE - part II

## 4. Make Model



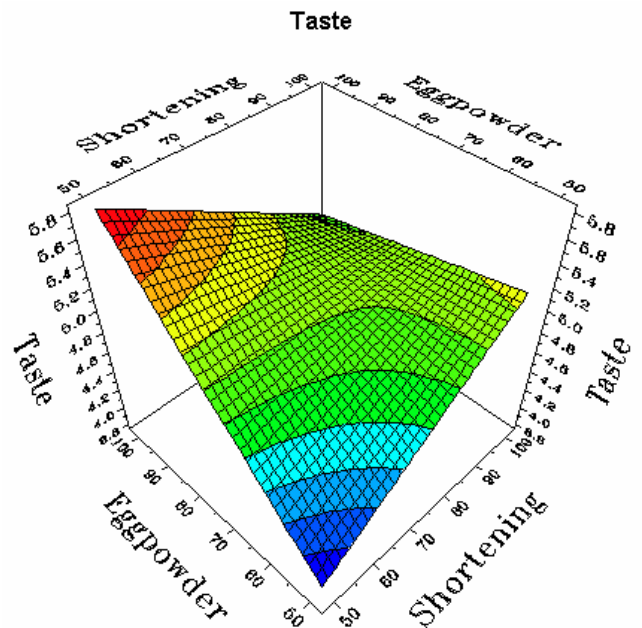
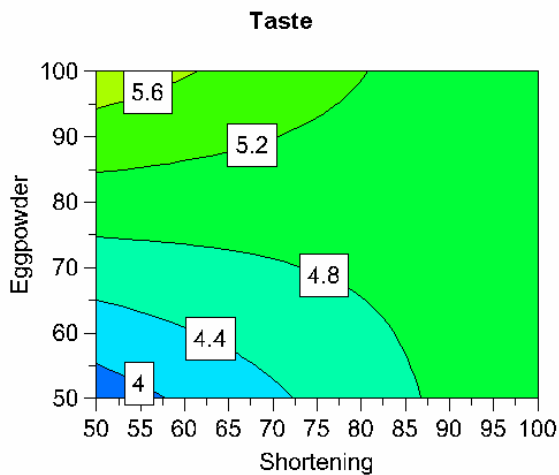
## 5. Interpret Model



# Overview of steps in DOE - part III

## 6. Use Model (make decisions)

Where to do verifying experiments ?



Flour = 400 g