

SAS Program for CRD Design-HOUSE_PRICES

| Obs | GRADE | FLOORS | BEDROOMS | SQFT_LIVING | PRICE |
|-----|-------|--------|----------|-------------|--------|
| 1 | 7 | 1 | 2 | 1160 | 468000 |
| 2 | 7 | 1 | 2 | 1200 | 189000 |
| 3 | 7 | 1 | 2 | 1070 | 252700 |
| 4 | 7 | 1 | 2 | 1980 | 585000 |
| 5 | 7 | 1 | 2 | 2020 | 355000 |
| 6 | 7 | 1 | 3 | 1180 | 221900 |
| 7 | 7 | 1 | 3 | 1060 | 291850 |
| 8 | 7 | 1 | 3 | 1780 | 229500 |
| 9 | 7 | 1 | 3 | 1370 | 400000 |
| 10 | 7 | 1 | 3 | 1250 | 230000 |
| 11 | 7 | 1 | 4 | 1960 | 604000 |
| 12 | 7 | 1 | 4 | 1620 | 385000 |
| 13 | 7 | 1 | 4 | 2060 | 322500 |
| 14 | 7 | 1 | 4 | 1220 | 240000 |
| 15 | 7 | 1 | 4 | 1760 | 380000 |
| 16 | 7 | 1.5 | 2 | 1430 | 455000 |
| 17 | 7 | 1.5 | 2 | 1420 | 592500 |
| 18 | 7 | 1.5 | 2 | 1490 | 625000 |
| 19 | 7 | 1.5 | 2 | 2130 | 730000 |
| 20 | 7 | 1.5 | 2 | 1100 | 450000 |
| 21 | 7 | 1.5 | 3 | 1430 | 310000 |
| 22 | 7 | 1.5 | 3 | 2770 | 317625 |
| 23 | 7 | 1.5 | 3 | 1980 | 555000 |
| 24 | 7 | 1.5 | 3 | 1670 | 460000 |
| 25 | 7 | 1.5 | 3 | 1110 | 560000 |
| 26 | 7 | 1.5 | 4 | 1600 | 485000 |
| 27 | 7 | 1.5 | 4 | 2330 | 687500 |
| 28 | 7 | 1.5 | 4 | 2750 | 571000 |
| 29 | 7 | 1.5 | 4 | 1610 | 535000 |
| 30 | 7 | 1.5 | 4 | 2100 | 445000 |
| 31 | 7 | 2 | 2 | 1610 | 215000 |
| 32 | 7 | 2 | 2 | 1030 | 335000 |
| 33 | 7 | 2 | 2 | 2420 | 430000 |
| 34 | 7 | 2 | 2 | 1050 | 163500 |
| 35 | 7 | 2 | 2 | 1450 | 655000 |
| 36 | 7 | 2 | 3 | 2570 | 538000 |
| 37 | 7 | 2 | 3 | 1715 | 257500 |

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| Obs | GRADE | FLOORS | BEDROOMS | SQFT_LIVING | PRICE |
|-----|-------|--------|----------|-------------|---------|
| 38 | 7 | 2 | 3 | 1890 | 323000 |
| 39 | 7 | 2 | 3 | 1890 | 395000 |
| 40 | 7 | 2 | 3 | 1570 | 685000 |
| 41 | 7 | 2 | 4 | 2250 | 292500 |
| 42 | 7 | 2 | 4 | 2240 | 287000 |
| 43 | 7 | 2 | 4 | 1900 | 360000 |
| 44 | 7 | 2 | 4 | 1980 | 243500 |
| 45 | 7 | 2 | 4 | 2070 | 430000 |
| 46 | 8 | 1 | 2 | 1240 | 188500 |
| 47 | 8 | 1 | 2 | 3900 | 1072000 |
| 48 | 8 | 1 | 2 | 1320 | 467000 |
| 49 | 8 | 1 | 2 | 1510 | 479950 |
| 50 | 8 | 1 | 2 | 1420 | 641000 |
| 51 | 8 | 1 | 3 | 1680 | 510000 |
| 52 | 8 | 1 | 3 | 3560 | 662500 |
| 53 | 8 | 1 | 3 | 2150 | 650000 |
| 54 | 8 | 1 | 3 | 1680 | 356000 |
| 55 | 8 | 1 | 3 | 1580 | 430000 |
| 56 | 8 | 1 | 4 | 4220 | 775000 |
| 57 | 8 | 1 | 4 | 2160 | 260000 |
| 58 | 8 | 1 | 4 | 2010 | 660500 |
| 59 | 8 | 1 | 4 | 2590 | 452000 |
| 60 | 8 | 1 | 4 | 2030 | 500000 |
| 61 | 8 | 1.5 | 2 | 1410 | 439900 |
| 62 | 8 | 1.5 | 2 | 1600 | 672324 |
| 63 | 8 | 1.5 | 2 | 2700 | 1260000 |
| 64 | 8 | 1.5 | 2 | 1750 | 575000 |
| 65 | 8 | 1.5 | 2 | 1700 | 710000 |
| 66 | 8 | 1.5 | 3 | 1400 | 667000 |
| 67 | 8 | 1.5 | 3 | 1090 | 535000 |
| 68 | 8 | 1.5 | 3 | 2300 | 696000 |
| 69 | 8 | 1.5 | 3 | 1660 | 780000 |
| 70 | 8 | 1.5 | 3 | 1180 | 610000 |
| 71 | 8 | 1.5 | 4 | 2750 | 1450000 |
| 72 | 8 | 1.5 | 4 | 2370 | 834000 |
| 73 | 8 | 1.5 | 4 | 2610 | 1000000 |
| 74 | 8 | 1.5 | 4 | 1820 | 1010000 |

SAS Program for CRD Design-HOUSE_PRICES

| Obs | GRADE | FLOORS | BEDROOMS | SQFT_LIVING | PRICE |
|-----|-------|--------|----------|-------------|---------|
| 75 | 8 | 1.5 | 4 | 2440 | 780000 |
| 76 | 8 | 2 | 2 | 1230 | 490000 |
| 77 | 8 | 2 | 2 | 1400 | 372500 |
| 78 | 8 | 2 | 2 | 1270 | 531000 |
| 79 | 8 | 2 | 2 | 1180 | 419000 |
| 80 | 8 | 2 | 2 | 1370 | 359000 |
| 81 | 8 | 2 | 3 | 2450 | 329000 |
| 82 | 8 | 2 | 3 | 2450 | 937000 |
| 83 | 8 | 2 | 3 | 2320 | 580500 |
| 84 | 8 | 2 | 3 | 3160 | 488000 |
| 85 | 8 | 2 | 3 | 2420 | 301000 |
| 86 | 8 | 2 | 4 | 2570 | 719000 |
| 87 | 8 | 2 | 4 | 2360 | 640000 |
| 88 | 8 | 2 | 4 | 2620 | 605000 |
| 89 | 8 | 2 | 4 | 1850 | 430000 |
| 90 | 8 | 2 | 4 | 2380 | 360000 |
| 91 | 9 | 1 | 2 | 2680 | 775000 |
| 92 | 9 | 1 | 2 | 1880 | 460000 |
| 93 | 9 | 1 | 2 | 3570 | 835000 |
| 94 | 9 | 1 | 2 | 1670 | 539950 |
| 95 | 9 | 1 | 2 | 1910 | 435000 |
| 96 | 9 | 1 | 3 | 3050 | 2000000 |
| 97 | 9 | 1 | 3 | 2753 | 1350000 |
| 98 | 9 | 1 | 3 | 2370 | 790000 |
| 99 | 9 | 1 | 3 | 2930 | 559900 |
| 100 | 9 | 1 | 3 | 2500 | 662000 |
| 101 | 9 | 1 | 4 | 2480 | 840000 |
| 102 | 9 | 1 | 4 | 2240 | 592500 |
| 103 | 9 | 1 | 4 | 3650 | 2400000 |
| 104 | 9 | 1 | 4 | 1710 | 749000 |
| 105 | 9 | 1 | 4 | 3140 | 578000 |
| 106 | 9 | 1.5 | 2 | 2360 | 1087500 |
| 107 | 9 | 1.5 | 2 | 2460 | 1370000 |
| 108 | 9 | 1.5 | 2 | 1590 | 850000 |
| 109 | 9 | 1.5 | 2 | 2320 | 1150000 |
| 110 | 9 | 1.5 | 2 | 1410 | 399900 |
| 111 | 9 | 1.5 | 3 | 2070 | 850830 |

SAS Program for CRD Design-HOUSE_PRICES

| Obs | GRADE | FLOORS | BEDROOMS | SQFT_LIVING | PRICE |
|-----|-------|--------|----------|-------------|---------|
| 112 | 9 | 1.5 | 3 | 3950 | 784000 |
| 113 | 9 | 1.5 | 3 | 2170 | 876650 |
| 114 | 9 | 1.5 | 3 | 2730 | 1338750 |
| 115 | 9 | 1.5 | 3 | 2350 | 339000 |
| 116 | 9 | 1.5 | 4 | 2050 | 740000 |
| 117 | 9 | 1.5 | 4 | 5450 | 610000 |
| 118 | 9 | 1.5 | 4 | 3190 | 1249000 |
| 119 | 9 | 1.5 | 4 | 3040 | 870000 |
| 120 | 9 | 1.5 | 4 | 3160 | 1280000 |
| 121 | 9 | 2 | 2 | 1070 | 259950 |
| 122 | 9 | 2 | 2 | 1780 | 935000 |
| 123 | 9 | 2 | 2 | 1590 | 409900 |
| 124 | 9 | 2 | 2 | 2540 | 945000 |
| 125 | 9 | 2 | 2 | 1295 | 487028 |
| 126 | 9 | 2 | 3 | 2140 | 940000 |
| 127 | 9 | 2 | 3 | 2770 | 461000 |
| 128 | 9 | 2 | 3 | 2320 | 437500 |
| 129 | 9 | 2 | 3 | 2910 | 770000 |
| 130 | 9 | 2 | 3 | 2714 | 465000 |
| 131 | 9 | 2 | 4 | 2950 | 650000 |
| 132 | 9 | 2 | 4 | 2570 | 625000 |
| 133 | 9 | 2 | 4 | 2290 | 785000 |
| 134 | 9 | 2 | 4 | 2830 | 885000 |
| 135 | 9 | 2 | 4 | 3230 | 480000 |

SAS Program for CRD Design-HOUSE_PRICES**The GLM Procedure**

| Class Level Information | | |
|-------------------------|--------|---------|
| Class | Levels | Values |
| FLOORS | 3 | 1 2 1.5 |

| | |
|-----------------------------|-----|
| Number of Observations Read | 135 |
| Number of Observations Used | 135 |

SAS Program for CRD Design-HOUSE_PRICES

The GLM Procedure

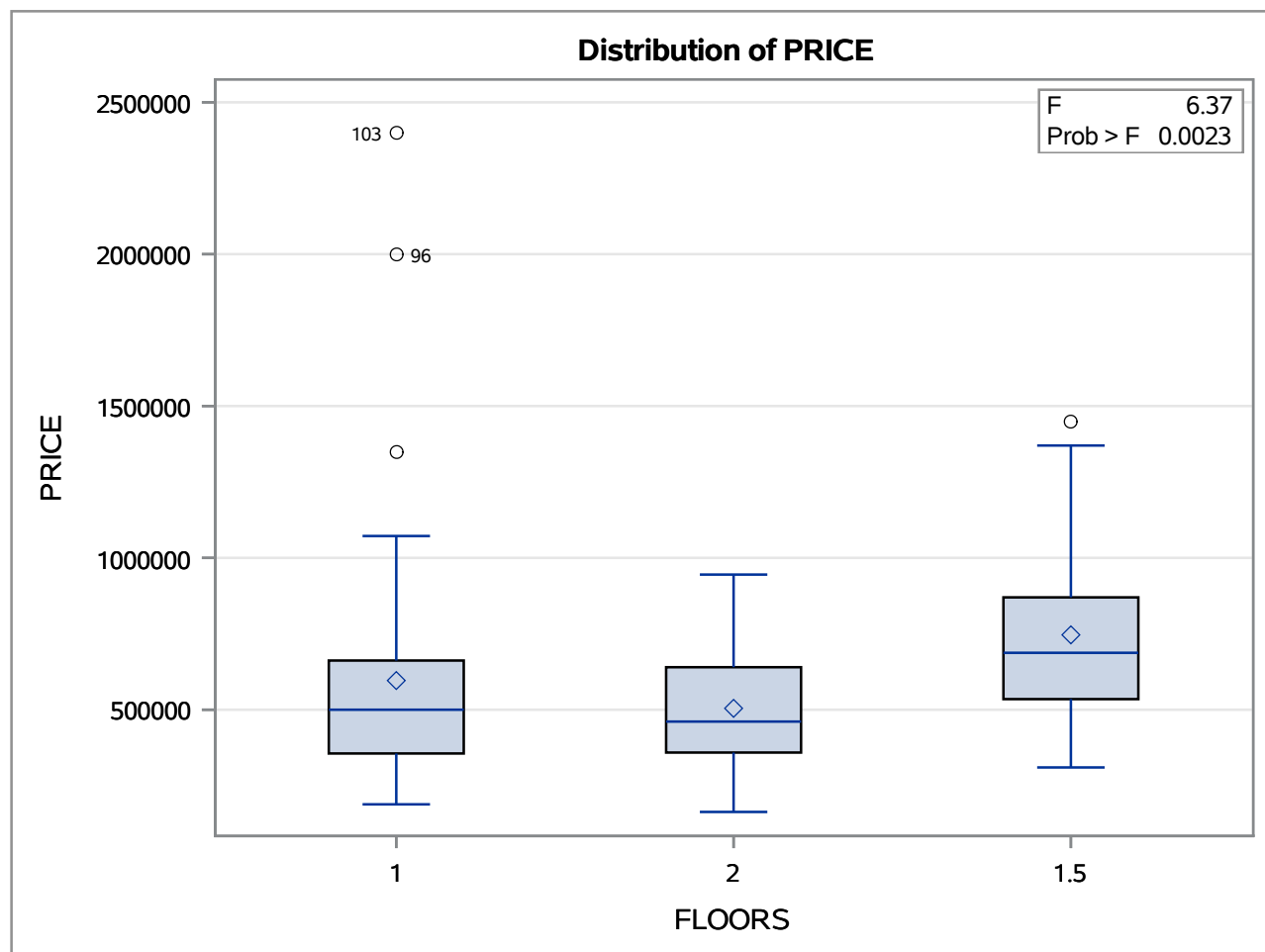
Dependent Variable: PRICE PRICE

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|--------------|---------|--------|
| Model | 2 | 1.3429852E12 | 671492587159 | 6.37 | 0.0023 |
| Error | 132 | 1.3922348E13 | 105472335616 | | |
| Corrected Total | 134 | 1.5265333E13 | | | |

| R-Square | Coeff Var | Root MSE | PRICE Mean |
|----------|-----------|----------|------------|
| 0.087976 | 52.74373 | 324765.0 | 615741.5 |

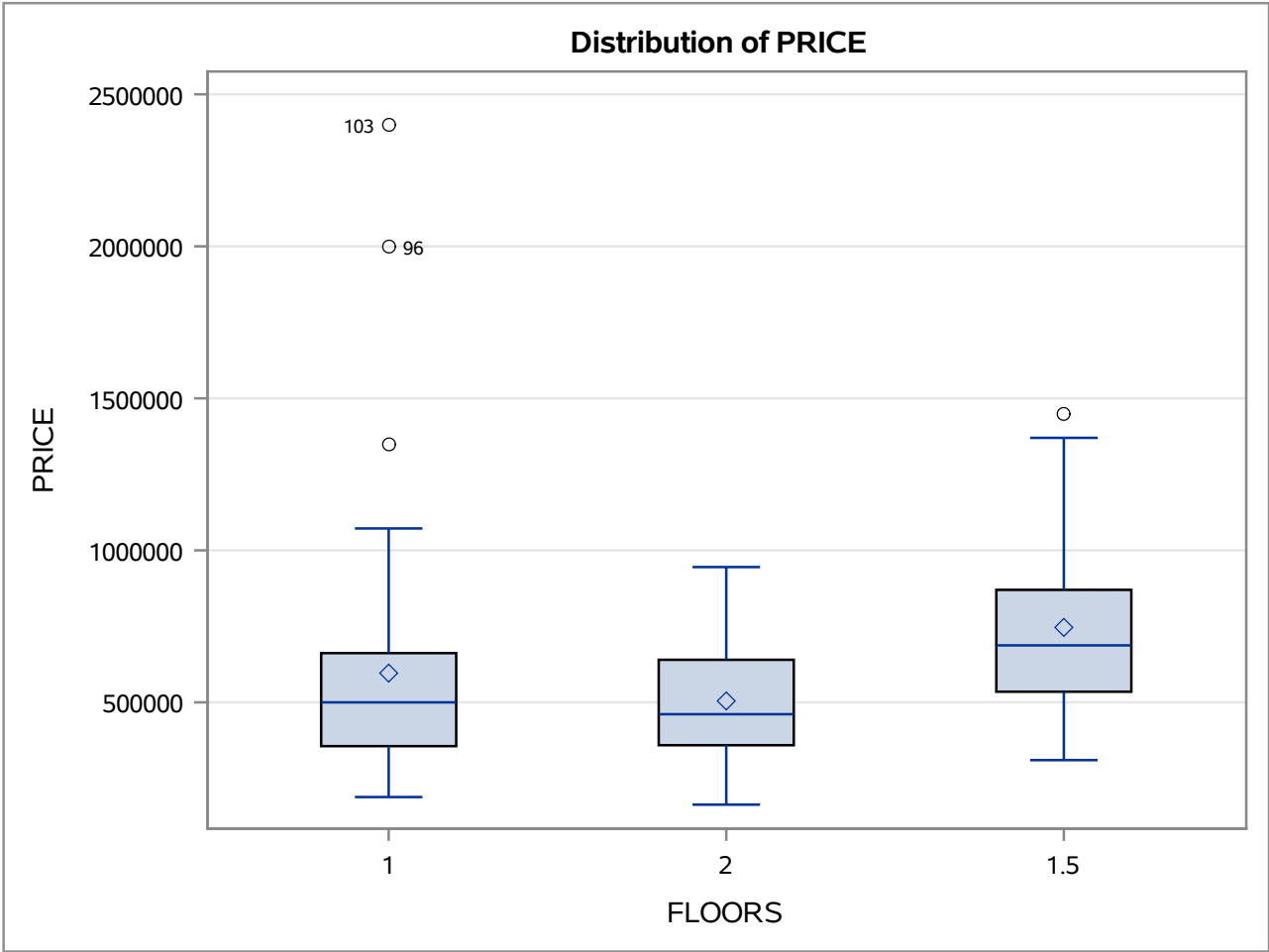
| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|--------------|--------------|---------|--------|
| FLOORS | 2 | 1.3429852E12 | 671492587159 | 6.37 | 0.0023 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|--------|----|--------------|--------------|---------|--------|
| FLOORS | 2 | 1.3429852E12 | 671492587159 | 6.37 | 0.0023 |



SAS Program for CRD Design-HOUSE_PRICES

The GLM Procedure



SAS Program for CRD Design-HOUSE_PRICES

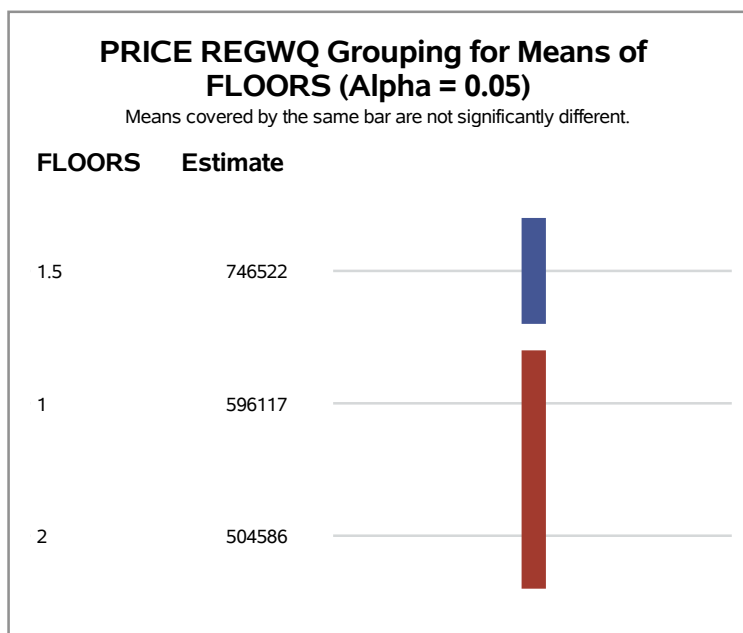
The GLM Procedure

Ryan-Einot-Gabriel-Welsch Multiple Range Test for PRICE

Note: This test controls the Type I experimentwise error rate.

| | |
|--------------------------|----------|
| Alpha | 0.05 |
| Error Degrees of Freedom | 132 |
| Error Mean Square | 1.055E11 |

| | | |
|-----------------|-----------|----------|
| Number of Means | 2 | 3 |
| Critical Range | 135433.48 | 162296.1 |



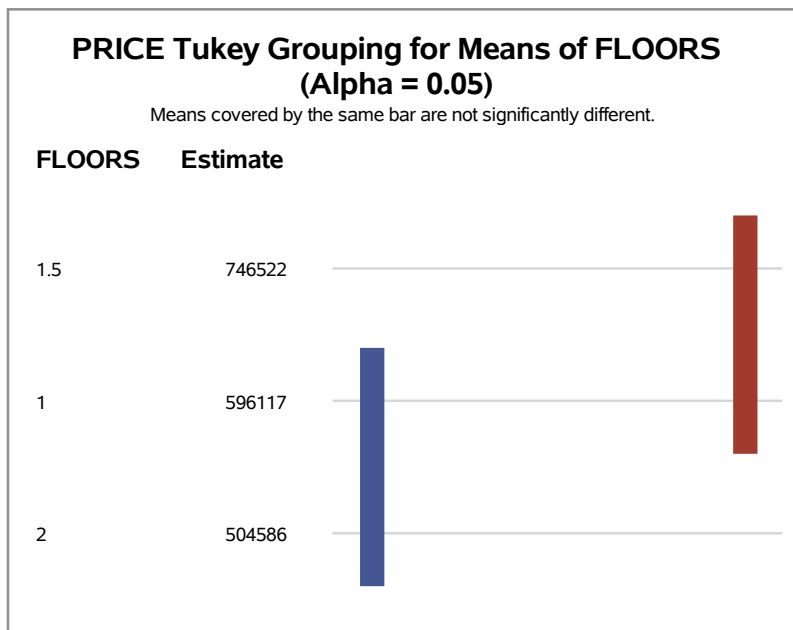
SAS Program for CRD Design-HOUSE_PRICES

The GLM Procedure

Tukey's Studentized Range (HSD) Test for PRICE

Note: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than REGWQ.

| | |
|-------------------------------------|----------|
| Alpha | 0.05 |
| Error Degrees of Freedom | 132 |
| Error Mean Square | 1.055E11 |
| Critical Value of Studentized Range | 3.35232 |
| Minimum Significant Difference | 162296 |



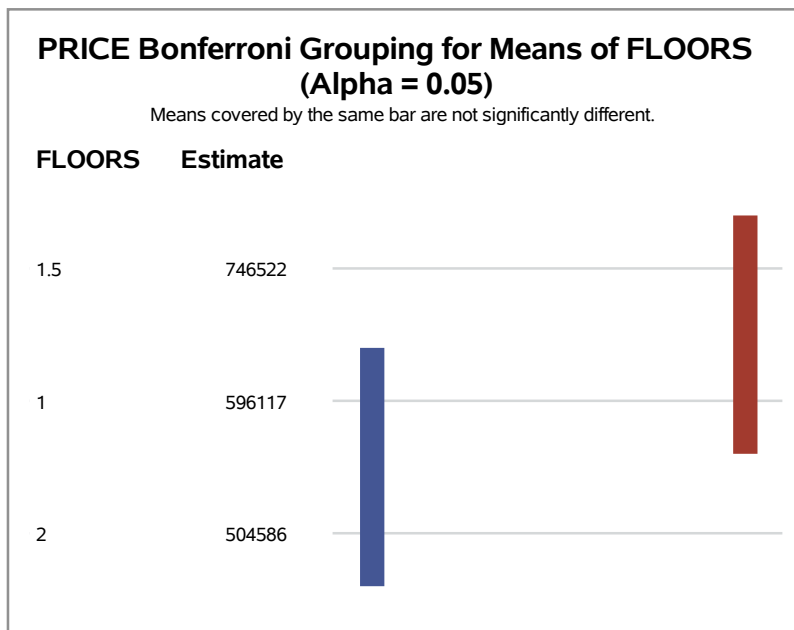
SAS Program for CRD Design-HOUSE_PRICES

The GLM Procedure

Bonferroni (Dunn) t Tests for PRICE

Note: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than REGWQ.

| | |
|--------------------------------|----------|
| Alpha | 0.05 |
| Error Degrees of Freedom | 132 |
| Error Mean Square | 1.055E11 |
| Critical Value of t | 2.42487 |
| Minimum Significant Difference | 166023 |



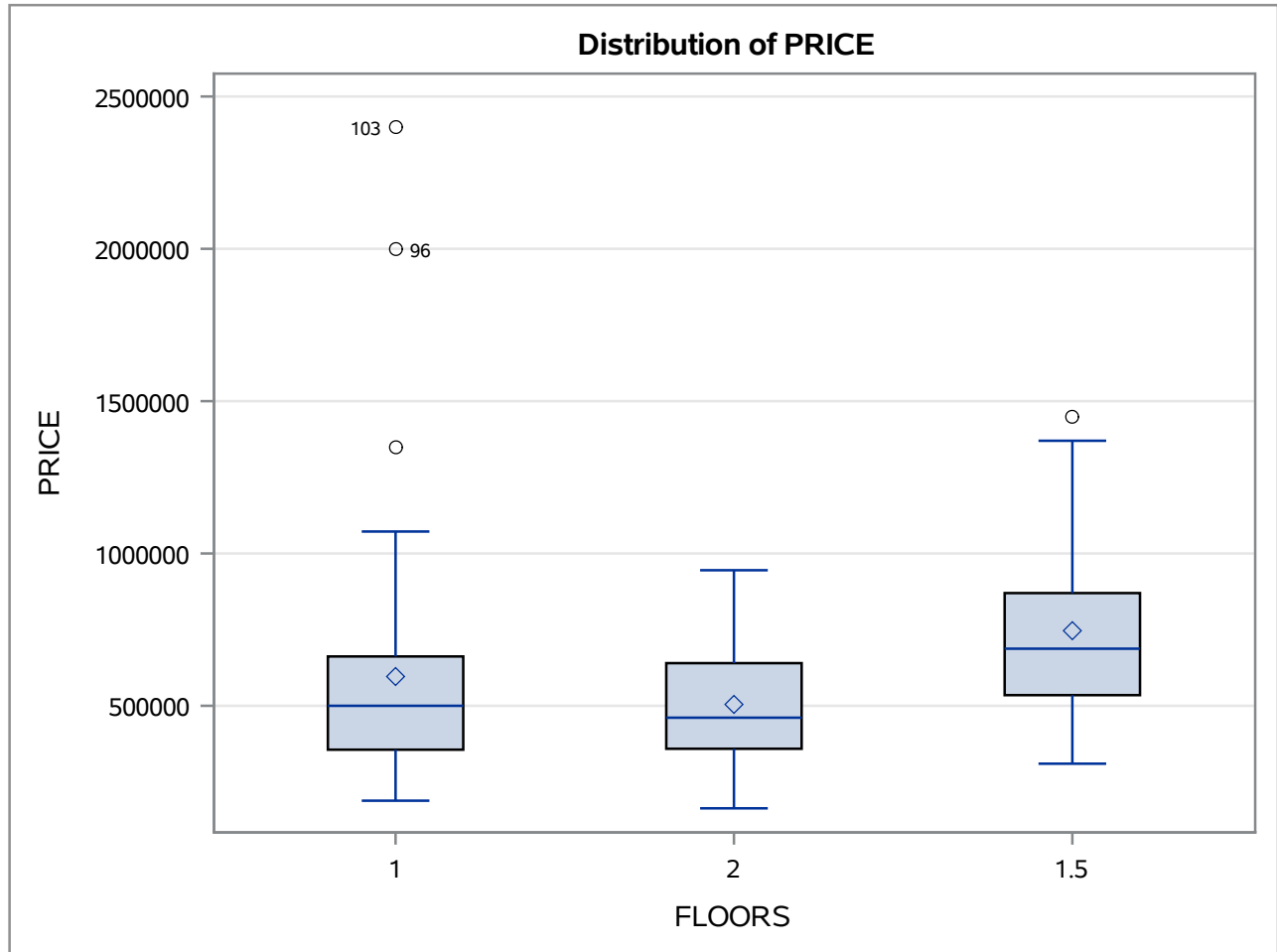
SAS Program for CRD Design-HOUSE_PRICES**The GLM Procedure**

| Levene's Test for Homogeneity of PRICE Variance ANOVA of Squared Deviations from Group Means | | | | | |
|---|-----|----------------|-------------|---------|--------|
| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
| FLOORS | 2 | 4.109E23 | 2.054E23 | 1.89 | 0.1555 |
| Error | 132 | 1.437E25 | 1.088E23 | | |

| Bartlett's Test for Homogeneity of PRICE Variance | | | |
|---|----|------------|------------|
| Source | DF | Chi-Square | Pr > ChiSq |
| FLOORS | 2 | 20.2987 | <.0001 |

SAS Program for CRD Design-HOUSE_PRICES

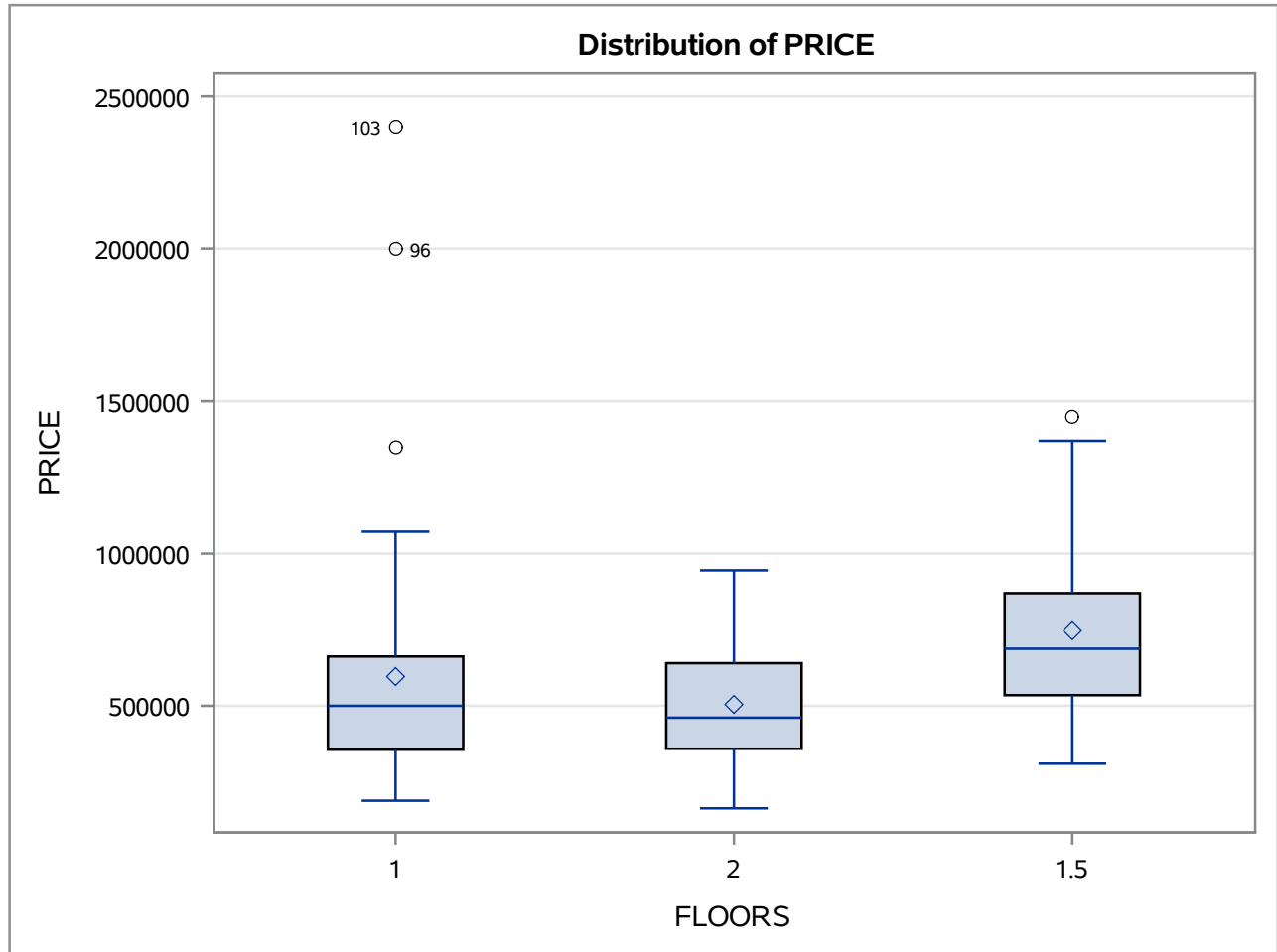
The GLM Procedure



| Level of FLOORS | N | PRICE | |
|--------------------|----|------------|------------|
| | | Mean | Std Dev |
| 1 | 45 | 596116.667 | 425098.150 |
| 2 | 45 | 504586.178 | 211744.676 |
| 1.5 | 45 | 746521.756 | 301451.094 |

SAS Program for CRD Design-HOUSE_PRICES

The GLM Procedure



| Level of FLOORS | N | PRICE | |
|--------------------|----|------------|------------|
| | | Mean | Std Dev |
| 1 | 45 | 596116.667 | 425098.150 |
| 2 | 45 | 504586.178 | 211744.676 |
| 1.5 | 45 | 746521.756 | 301451.094 |

SAS Program for CRD Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1

| Moments | | | |
|------------------------|------------|-------------------------|------------|
| N | 45 | Sum Weights | 45 |
| Mean | 596116.667 | Sum Observations | 26825250 |
| Std Deviation | 425098.15 | Variance | 1.80708E11 |
| Skewness | 2.69040385 | Kurtosis | 8.78247089 |
| Uncorrected SS | 2.39421E13 | Corrected SS | 7.95117E12 |
| Coeff Variation | 71.3112338 | Std Error Mean | 63369.8907 |

| Basic Statistical Measures | | | |
|----------------------------|----------|----------------------------|------------|
| Location | | Variability | |
| Mean | 596116.7 | Std Deviation | 425098 |
| Median | 500000.0 | Variance | 1.80708E11 |
| Mode | 775000.0 | Range | 2211500 |
| | | Interquartile Range | 306000 |

| Tests for Location: Mu0=0 | | | | |
|---------------------------|-----------|----------|---------------------|--------|
| Test | Statistic | | p Value | |
| Student's t | t | 9.406939 | Pr > t | <.0001 |
| Sign | M | 22.5 | Pr >= M | <.0001 |
| Signed Rank | S | 517.5 | Pr >= S | <.0001 |

| Tests for Normality | | | | |
|---------------------------|-------------|----------|---------------------|---------|
| Test | Statistic | | p Value | |
| Shapiro-Wilk | W | 0.719549 | Pr < W | <0.0001 |
| Kolmogorov-Smirnov | D | 0.215731 | Pr > D | <0.0100 |
| Cramer-von Mises | W-Sq | 0.542458 | Pr > W-Sq | <0.0050 |
| Anderson-Darling | A-Sq | 3.327122 | Pr > A-Sq | <0.0050 |

| Quantiles (Definition 5) | |
|--------------------------|----------|
| Level | Quantile |
| 100% Max | 2400000 |
| 99% | 2400000 |
| 95% | 1350000 |
| 90% | 840000 |
| 75% Q3 | 662000 |

SAS Program for CRD Design-HOUSE_PRICES**The UNIVARIATE Procedure
Variable: PRICE (PRICE)****FLOORS=1**

| Quantiles (Definition 5) | |
|--------------------------|----------|
| Level | Quantile |
| 50% Median | 500000 |
| 25% Q1 | 356000 |
| 10% | 230000 |
| 5% | 221900 |
| 1% | 188500 |
| 0% Min | 188500 |

| Extreme Observations | | | | | |
|----------------------|--------|-----|---------|--------|-----|
| Lowest | | | Highest | | |
| Value | FLOORS | Obs | Value | FLOORS | Obs |
| 188500 | 1 | 16 | 840000 | 1 | 41 |
| 189000 | 1 | 2 | 1072000 | 1 | 17 |
| 221900 | 1 | 6 | 1350000 | 1 | 37 |
| 229500 | 1 | 8 | 2000000 | 1 | 36 |
| 230000 | 1 | 10 | 2400000 | 1 | 43 |

SAS Program for CRD Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1.5

| Moments | | | |
|------------------------|------------|-------------------------|------------|
| N | 45 | Sum Weights | 45 |
| Mean | 746521.756 | Sum Observations | 33593479 |
| Std Deviation | 301451.094 | Variance | 9.08728E10 |
| Skewness | 0.76813113 | Kurtosis | -0.2234056 |
| Uncorrected SS | 2.90767E13 | Corrected SS | 3.9984E12 |
| Coeff Variation | 40.3807513 | Std Error Mean | 44937.6758 |

| Basic Statistical Measures | | | |
|----------------------------|----------|----------------------------|------------|
| Location | | Variability | |
| Mean | 746521.8 | Std Deviation | 301451 |
| Median | 687500.0 | Variance | 9.08728E10 |
| Mode | 535000.0 | Range | 1140000 |
| | | Interquartile Range | 335000 |

Note: The mode displayed is the smallest of 3 modes with a count of 2.

| Tests for Location: Mu0=0 | | | | |
|---------------------------|-----------|----------|---------------------|--------|
| Test | Statistic | | p Value | |
| Student's t | t | 16.61238 | Pr > t | <.0001 |
| Sign | M | 22.5 | Pr >= M | <.0001 |
| Signed Rank | S | 517.5 | Pr >= S | <.0001 |

| Tests for Normality | | | | |
|---------------------------|-------------|----------|---------------------|--------|
| Test | Statistic | | p Value | |
| Shapiro-Wilk | W | 0.928821 | Pr < W | 0.0085 |
| Kolmogorov-Smirnov | D | 0.117195 | Pr > D | 0.1218 |
| Cramer-von Mises | W-Sq | 0.168144 | Pr > W-Sq | 0.0140 |
| Anderson-Darling | A-Sq | 1.063444 | Pr > A-Sq | 0.0081 |

| Quantiles (Definition 5) | |
|--------------------------|----------|
| Level | Quantile |
| 100% Max | 1450000 |
| 99% | 1450000 |
| 95% | 1338750 |
| 90% | 1260000 |
| 75% Q3 | 870000 |

SAS Program for CRD Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1.5

| Quantiles (Definition 5) | |
|--------------------------|----------|
| Level | Quantile |
| 50% Median | 687500 |
| 25% Q1 | 535000 |
| 10% | 439900 |
| 5% | 339000 |
| 1% | 310000 |
| 0% Min | 310000 |

| Extreme Observations | | | | | |
|----------------------|--------|-----|---------|--------|-----|
| Lowest | | | Highest | | |
| Value | FLOORS | Obs | Value | FLOORS | Obs |
| 310000 | 1.5 | 51 | 1260000 | 1.5 | 63 |
| 317625 | 1.5 | 52 | 1280000 | 1.5 | 90 |
| 339000 | 1.5 | 85 | 1338750 | 1.5 | 84 |
| 399900 | 1.5 | 80 | 1370000 | 1.5 | 77 |
| 439900 | 1.5 | 61 | 1450000 | 1.5 | 71 |

SAS Program for CRD Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=2

| Moments | | | |
|------------------------|------------|-------------------------|------------|
| N | 45 | Sum Weights | 45 |
| Mean | 504586.178 | Sum Observations | 22706378 |
| Std Deviation | 211744.676 | Variance | 4.48358E10 |
| Skewness | 0.70224911 | Kurtosis | -0.3243464 |
| Uncorrected SS | 1.34301E13 | Corrected SS | 1.97278E12 |
| Coeff Variation | 41.9640263 | Std Error Mean | 31565.0327 |

| Basic Statistical Measures | | | |
|----------------------------|----------|----------------------------|------------|
| Location | | Variability | |
| Mean | 504586.2 | Std Deviation | 211745 |
| Median | 461000.0 | Variance | 4.48358E10 |
| Mode | 430000.0 | Range | 781500 |
| | | Interquartile Range | 281000 |

| Tests for Location: Mu0=0 | | | | |
|---------------------------|-----------|----------|---------------------|--------|
| Test | Statistic | | p Value | |
| Student's t | t | 15.98561 | Pr > t | <.0001 |
| Sign | M | 22.5 | Pr >= M | <.0001 |
| Signed Rank | S | 517.5 | Pr >= S | <.0001 |

| Tests for Normality | | | | |
|---------------------------|-------------|----------|---------------------|--------|
| Test | Statistic | | p Value | |
| Shapiro-Wilk | W | 0.93207 | Pr < W | 0.0111 |
| Kolmogorov-Smirnov | D | 0.149682 | Pr > D | 0.0125 |
| Cramer-von Mises | W-Sq | 0.149721 | Pr > W-Sq | 0.0233 |
| Anderson-Darling | A-Sq | 0.965152 | Pr > A-Sq | 0.0149 |

| Quantiles (Definition 5) | |
|--------------------------|----------|
| Level | Quantile |
| 100% Max | 945000 |
| 99% | 945000 |
| 95% | 937000 |
| 90% | 885000 |
| 75% Q3 | 640000 |

SAS Program for CRD Design-HOUSE_PRICES

The UNIVARIATE Procedure Variable: PRICE (PRICE)

FLOORS=2

| Quantiles (Definition 5) | |
|--------------------------|----------|
| Level | Quantile |
| 50% Median | 461000 |
| 25% Q1 | 359000 |
| 10% | 259950 |
| 5% | 243500 |
| 1% | 163500 |
| 0% Min | 163500 |

| Extreme Observations | | | | | |
|----------------------|--------|-----|---------|--------|-----|
| Lowest | | | Highest | | |
| Value | FLOORS | Obs | Value | FLOORS | Obs |
| 163500 | 2 | 94 | 885000 | 2 | 134 |
| 215000 | 2 | 91 | 935000 | 2 | 122 |
| 243500 | 2 | 104 | 937000 | 2 | 112 |
| 257500 | 2 | 97 | 940000 | 2 | 126 |
| 259950 | 2 | 121 | 945000 | 2 | 124 |