Univariate Analysis of Variance: Case α=1

Between-Subjects Factors

		N
n	30	120
	40	120
	50	120
	60	120
	70	120
m1	2	150
	4	150
	6	150
	8	150
m2	1	600
PROBLEM	CO (SA)	200
	SA	200
	SM (SA)	200

Tests of Between-Subjects Effects

Dependent Variable: TCT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	974220523676.860[a]	59	16512212265.709	783.659	.000
Intercept	3657088909346.953	1	3657088909346.953	173563.134	.000
n	930387450418.232	4	232596862604.558	11038.900	.000
m1	4249306097.193	3	1416435365.731	67.223	.000
m2	.000	0	.	.	.
PROBLEM	30433830464.230	2	15216915232.115	722.185	.000
n * m1	736526463.440	12	61377205.287	2.913	.001
n * m2	.000	0	.	.	.
n * PROBLEM	7788679811.403	8	973584976.425	46.206	.000
m1 * m2	.000	0	.	.	.
m1 * PROBLEM	354647514.597	6	59107919.099	2.805	.011
m2 * PROBLEM	.000	0	.	.	.
n * m1 * m2	.000	0	.	.	.
n * m1 * PROBLEM	270082907.770	24	11253454.490	.534	.967
n * m2 * PROBLEM	.000	0	.	.	.
m1 * m2 * PROBLEM	.000	0	.	.	.
n * m1 * m2 * PROBLEM	.000	0	.	.	.

Error	11378153692.200	540	21070654.986		
Total	4642687586716.000	600			
Corrected Total	985598677369.060	599			

a. R Squared = .988 (Adjusted R Squared = .987)

Post Hoc Tests

n

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

		Mean Difference			95% Confidence Interval	
(I) n	(J) n	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
30	40	-19497.30*	592.602	.000	-21119.26	-17875.34
	50	-46085.73*	592.602	.000	-47707.69	-44463.76
	60	-75244.87*	592.602	.000	-76866.83	-73622.90
	70	-110585.38*	592.602	.000	-112207.35	-108963.42
40	30	19497.30*	592.602	.000	17875.34	21119.26
	50	-26588.43*	592.602	.000	-28210.39	-24966.46
	60	-55747.57*	592.602	.000	-57369.53	-54125.60
	70	-91088.08*	592.602	.000	-92710.05	-89466.12
50	30	46085.73*	592.602	.000	44463.76	47707.69
	40	26588.43*	592.602	.000	24966.46	28210.39
	60	-29159.14*	592.602	.000	-30781.10	-27537.18
	70	-64499.66*	592.602	.000	-66121.62	-62877.70
60	30	75244.87*	592.602	.000	73622.90	76866.83
	40	55747.57*	592.602	.000	54125.60	57369.53
	50	29159.14*	592.602	.000	27537.18	30781.10
	70	-35340.52*	592.602	.000	-36962.48	-33718.55
70	30	110585.38*	592.602	.000	108963.42	112207.35
	40	91088.08*	592.602	.000	89466.12	92710.05
	50	64499.66*	592.602	.000	62877.70	66121.62
	60	35340.52*	592.602	.000	33718.55	36962.48

Based on observed means.

The error term is Mean Square(Error) = 21070654.986.

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

TCT

Tukey HSD[a,b]

n	N	Subset 1	2	3	4	5
30	120	27788.78				
40	120		47286.07			
50	120			73874.50		
60	120				103033.64	
70	120					138374.16
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 21070654.986.

a. Uses Harmonic Mean Sample Size = 120.000.

b. Alpha = 0.05.

m1

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) m1	(J) m1	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
2	4	-3904.07*	530.040	.000	-5270.00	-2538.13
	6	-4663.43*	530.040	.000	-6029.36	-3297.49
	8	-7446.65*	530.040	.000	-8812.59	-6080.72
4	2	3904.07*	530.040	.000	2538.13	5270.00
	6	-759.36	530.040	.479	-2125.30	606.58
	8	-3542.59*	530.040	.000	-4908.52	-2176.65
6	2	4663.43*	530.040	.000	3297.49	6029.36
	4	759.36	530.040	.479	-606.58	2125.30
	8	-2783.23*	530.040	.000	-4149.16	-1417.29
8	2	7446.65*	530.040	.000	6080.72	8812.59
	4	3542.59*	530.040	.000	2176.65	4908.52
	6	2783.23*	530.040	.000	1417.29	4149.16

Based on observed means.

The error term is Mean Square(Error) = 21070654.986.

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

TCT

Tukey HSD[a,b]

m1	N	Subset 1	Subset 2	Subset 3
2	150	74067.89		
4	150		77971.96	
6	150		78731.32	
8	150			81514.55
Sig.		1.000	.479	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 21070654.986.

a. Uses Harmonic Mean Sample Size = 150.000.

b. Alpha = 0.05.

PROBLEM

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) PROBLEM	(J) PROBLEM	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	
CO (SA)	SA	4894.28*	459.028	.000	3815.48	
	SM (SA)	-12054.18*	459.028	.000	-13132.98	
SA	CO (SA)	-4894.28*	459.028	.000	-5973.09	
	SM (SA)	-16948.46*	459.028	.000	-18027.26	
SM (SA)	CO (SA)	12054.18*	459.028	.000	10975.37	
	SA	16948.46*	459.028	.000	15869.66	

Homogeneous Subsets

TCT

Tukey HSD[a.b]

PROBLEM	N	Subset 1	2	3
SA	200	70790.51		
CO (SA)	200		75684.80	
SM (SA)	200			87738.98
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 21070654.986.

a. Uses Harmonic Mean Sample Size = 200.000.

b. Alpha = 0.05.

Univariate Analysis of Variance: Case α=2

Between-Subjects Factors

		N
n	30	120
	40	120
	50	120
	60	120
	70	120
m1	2	150
	4	150
	6	150
	8	150
m2	1	600
PROBLEM	CO (SA)	200
	SA	200
	SM (SA)	200

Tests of Between-Subjects Effects

Dependent Variable: TCT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2600100427068.219[a]	59	44069498763.868	315.193	.000
Intercept	9088224026760.305	1	9088224026760.305	65000.642	.000
n	2408566456325.844	4	602141614081.461	4306.627	.000
m1	3233955055.285	3	1077985018.428	7.710	.000
m2	.000	0	.	.	.
PROBLEM	142542704450.895	2	71271352225.448	509.746	.000
n * m1	1495736742.773	12	124644728.564	.891	.556
n * m2	.000	0	.	.	.
n * PROBLEM	43778621984.423	8	5472327748.053	39.139	.000
m1 * m2	.000	0	.	.	.
m1 * PROBLEM	177092777.720	6	29515462.953	.211	.973
m2 * PROBLEM	.000	0	.	.	.
n * m1 * m2	.000	0	.	.	.
n * m1 * PROBLEM	305859731.297	24	12744155.471	.091	1.000
n * m2 * PROBLEM	.000	0	.	.	.
m1 * m2 * PROBLEM	.000	0	.	.	.
n * m1 * m2 * PROBLEM	.000	0	.	.	.
Error	75501422760.500	540	139817449.556		
Total	11763825876589.000	600			
Corrected Total	2675601849828.719	599			

a. R Squared = .972 (Adjusted R Squared = .969)

Post Hoc Tests

n

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) n	(J) n	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
30	40	-31251.03*	1526.529	.000	-35429.17	-27072.90
	50	-74118.07*	1526.529	.000	-78296.20	-69939.93
	60	-120248.74*	1526.529	.000	-124426.88	-116070.61
	70	-178200.22*	1526.529	.000	-182378.35	-174022.08
40	30	31251.03*	1526.529	.000	27072.90	35429.17
	50	-42867.03*	1526.529	.000	-47045.17	-38688.90

	60	-88997.71*	1526.529	.000	-93175.84	-84819.57
	70	-146949.18*	1526.529	.000	-151127.32	-142771.05
50	30	74118.07*	1526.529	.000	69939.93	78296.20
	40	42867.03*	1526.529	.000	38688.90	47045.17
	60	-46130.67*	1526.529	.000	-50308.81	-41952.54
	70	-104082.15*	1526.529	.000	-108260.29	-99904.01
60	30	120248.74*	1526.529	.000	116070.61	124426.88
	40	88997.71*	1526.529	.000	84819.57	93175.84
	50	46130.68*	1526.529	.000	41952.54	50308.81
	70	-57951.48*	1526.529	.000	-62129.61	-53773.34
70	30	178200.22*	1526.529	.000	174022.08	182378.35
	40	146949.18*	1526.529	.000	142771.05	151127.32
	50	104082.15*	1526.529	.000	99904.01	108260.29
	60	57951.48*	1526.529	.000	53773.34	62129.61

Based on observed means.

The error term is Mean Square(Error) = 139817449.557.

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

TCT

Tukey HSD[a.b]

		Subset				
n	N	1	2	3	4	5
30	120	42309.70				
40	120		73560.73			
50	120			116427.77		
60	120				162558.44	
70	120					220509.92
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 139817449.557.

a. Uses Harmonic Mean Sample Size = 120.000.

b. Alpha = 0.05.

m1

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) m1	(J) m1	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
2	4	-3925.05*	1365.369	.022	-7443.67	-406.42
	6	-2897.74	1365.369	.147	-6416.36	620.88
	8	-6481.18*	1365.369	.000	-9999.80	-2962.56
4	2	3925.05*	1365.369	.022	406.42	7443.67
	6	1027.31	1365.369	.876	-2491.32	4545.93
	8	-2556.13	1365.369	.241	-6074.76	962.49
6	2	2897.74	1365.369	.147	-620.88	6416.36
	4	-1027.31	1365.369	.876	-4545.93	2491.32
	8	-3583.44*	1365.369	.044	-7102.06	-64.82
8	2	6481.18*	1365.369	.000	2962.56	9999.80
	4	2556.13	1365.369	.241	-962.49	6074.76
	6	3583.44*	1365.369	.044	64.82	7102.06

Based on observed means.

The error term is Mean Square(Error) = 139817449.557.

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

TCT

Tukey HSD[a.b]

m1	N	Subset 1	Subset 2	Subset 3
2	150	119747.32		
6	150	122645.06	122645.06	
4	150		123672.37	123672.37
8	150			126228.50
Sig.		.147	.876	.241

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 139817449.557.

a. Uses Harmonic Mean Sample Size = 150.000.

b. Alpha = 0.05.

PROBLEM

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) PROBLEM	(J) PROBLEM	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	
CO (SA)	SA	37539.17*	1182.444	.000	34760.20	
	SM (SA)	22259.33*	1182.444	.000	19480.36	
SA	CO (SA)	-37539.17*	1182.444	.000	-40318.14	
	SM (SA)	-15279.84*	1182.444	.000	-18058.81	
SM (SA)	CO (SA)	-22259.33*	1182.444	.000	-25038.30	
	SA	15279.84*	1182.444	.000	12500.87	

Homogeneous Subsets

TCT

Tukey HSD[a.b]

PROBLEM	N	Subset 1	2	3
SA	200	105466.98		
SM (SA)	200		120746.81	
CO (SA)	200			143006.14
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 139817449.557.

a. Uses Harmonic Mean Sample Size = 200.000.

b. Alpha = 0.05.

Univariate Analysis of Variance: Case α=3

Between-Subjects Factors

		N
n	30	120
	40	120
	50	120
	60	120
	70	120
m1	2	150
	4	150
	6	150
	8	150
m2	1	600
PROBLEM	CO (SA)	200
	SA	200
	SM (SA)	200

Tests of Between-Subjects Effects

Dependent Variable: TCT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5505434669248.428[a]	59	93312452021.160	258.655	.000
Intercept	18353185028580.690	1	18353185028580.690	50873.695	.000
n	4920877967878.011	4	1230219491969.503	3410.079	.000
m1	4426456420.232	3	1475485473.411	4.090	.007
m2	.000	0	.	.	.
PROBLEM	443132767556.608	2	221566383778.304	614.166	.000
n * m1	3619033147.343	12	301586095.612	.836	.613
n * m2	.000	0	.	.	.
n * PROBLEM	132605131361.912	8	16575641420.239	45.946	.000
m1 * m2	.000	0	.	.	.
m1 * PROBLEM	242447751.543	6	40407958.591	.112	.995
m2 * PROBLEM	.000	0	.	.	.
n * m1 * m2	.000	0	.	.	.
n * m1 * PROBLEM	530865132.807	24	22119380.534	.061	1.000
n * m2 * PROBLEM	.000	0	.	.	.
m1 * m2 * PROBLEM	.000	0	.	.	.
n * m1 * m2 * PROBLEM	.000	0	.	.	.
Error	194810301075.900	540	360759816.807		
Total	24053429998905.000	600			

Corrected Total	5700244970324.328	599			

a. R Squared = .966 (Adjusted R Squared = .962)

Post Hoc Tests

n

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) n	(J) n	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
30	40	-44713.18*	2452.073	.000	-51424.54	-38001.81
	50	-105776.63*	2452.073	.000	-112487.99	-99065.26
	60	-171319.28*	2452.073	.000	-178030.65	-164607.92
	70	-254949.15*	2452.073	.000	-261660.52	-248237.78
40	30	44713.18*	2452.073	.000	38001.81	51424.54
	50	-61063.45*	2452.073	.000	-67774.82	-54352.08
	60	-126606.11*	2452.073	.000	-133317.48	-119894.74
	70	-210235.97*	2452.073	.000	-216947.34	-203524.61
50	30	105776.63*	2452.073	.000	99065.26	112487.99
	40	61063.45*	2452.073	.000	54352.08	67774.82
	60	-65542.66*	2452.073	.000	-72254.03	-58831.29
	70	-149172.52*	2452.073	.000	-155883.89	-142461.16
60	30	171319.28*	2452.073	.000	164607.92	178030.65
	40	126606.11*	2452.073	.000	119894.74	133317.48
	50	65542.66*	2452.073	.000	58831.29	72254.03
	70	-83629.87*	2452.073	.000	-90341.23	-76918.50
70	30	254949.15*	2452.073	.000	248237.78	261660.52
	40	210235.97*	2452.073	.000	203524.61	216947.34
	50	149172.52*	2452.073	.000	142461.16	155883.89
	60	83629.87*	2452.073	.000	76918.50	90341.23

Based on observed means.

The error term is Mean Square(Error) = 360759816.807.

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

TCT

Tukey HSD[a,b]

		Subset				
n	N	1	2	3	4	5
30	120	59544.44				
40	120		104257.62			
50	120			165321.07		
60	120				230863.72	
70	120					314493.59
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 360759816.807.

a. Uses Harmonic Mean Sample Size = 120.000.

b. Alpha = 0.05.

m1

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

		Mean Difference			95% Confidence Interval	
(I) m1	(J) m1	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
2	4	-4720.61	2193.201	.138	-10372.59	931.38
	6	-2438.89	2193.201	.682	-8090.87	3213.10
	8	-7334.70*	2193.201	.005	-12986.69	-1682.71
4	2	4720.61	2193.201	.138	-931.38	10372.59
	6	2281.72	2193.201	.726	-3370.27	7933.71
	8	-2614.09	2193.201	.632	-8266.08	3037.89
6	2	2438.89	2193.201	.682	-3213.10	8090.87
	4	-2281.72	2193.201	.726	-7933.71	3370.27
	8	-4895.81	2193.201	.116	-10547.80	756.17
8	2	7334.70*	2193.201	.005	1682.71	12986.69
	4	2614.09	2193.201	.632	-3037.89	8266.08
	6	4895.81	2193.201	.116	-756.17	10547.80

Based on observed means.

The error term is Mean Square(Error) = 360759816.807.

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

TCT

Tukey HSD[a.b]

m1	N	Subset 1	Subset 2
2	150	171272.54	
6	150	173711.43	173711.43
4	150	175993.15	175993.15
8	150		178607.24
Sig.		.138	.116

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 360759816.807.

a. Uses Harmonic Mean Sample Size = 150.000.

b. Alpha = 0.05.

PROBLEM

Multiple Comparisons

Dependent Variable: TCT

Tukey HSD

(I) PROBLEM	(J) PROBLEM	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	
CO (SA)	SA	62822.92*	1899.368	.000	58359.05	
	SM (SA)	50475.98*	1899.368	.000	46012.10	
SA	CO (SA)	-62822.92*	1899.368	.000	-67286.80	
	SM (SA)	-12346.95*	1899.368	.000	-16810.82	
SM (SA)	CO (SA)	-50475.98*	1899.368	.000	-54939.86	
	SA	12346.95*	1899.368	.000	7883.07	

Homogeneous Subsets

TCT

Tukey HSD[a.b]

PROBLEM	N	Subset 1	Subset 2	Subset 3
SA	200	149839.47		
SM (SA)	200		162186.41	
CO (SA)	200			212662.39
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 360759816.807.

a. Uses Harmonic Mean Sample Size = 200.000.

b. Alpha = 0.05.