

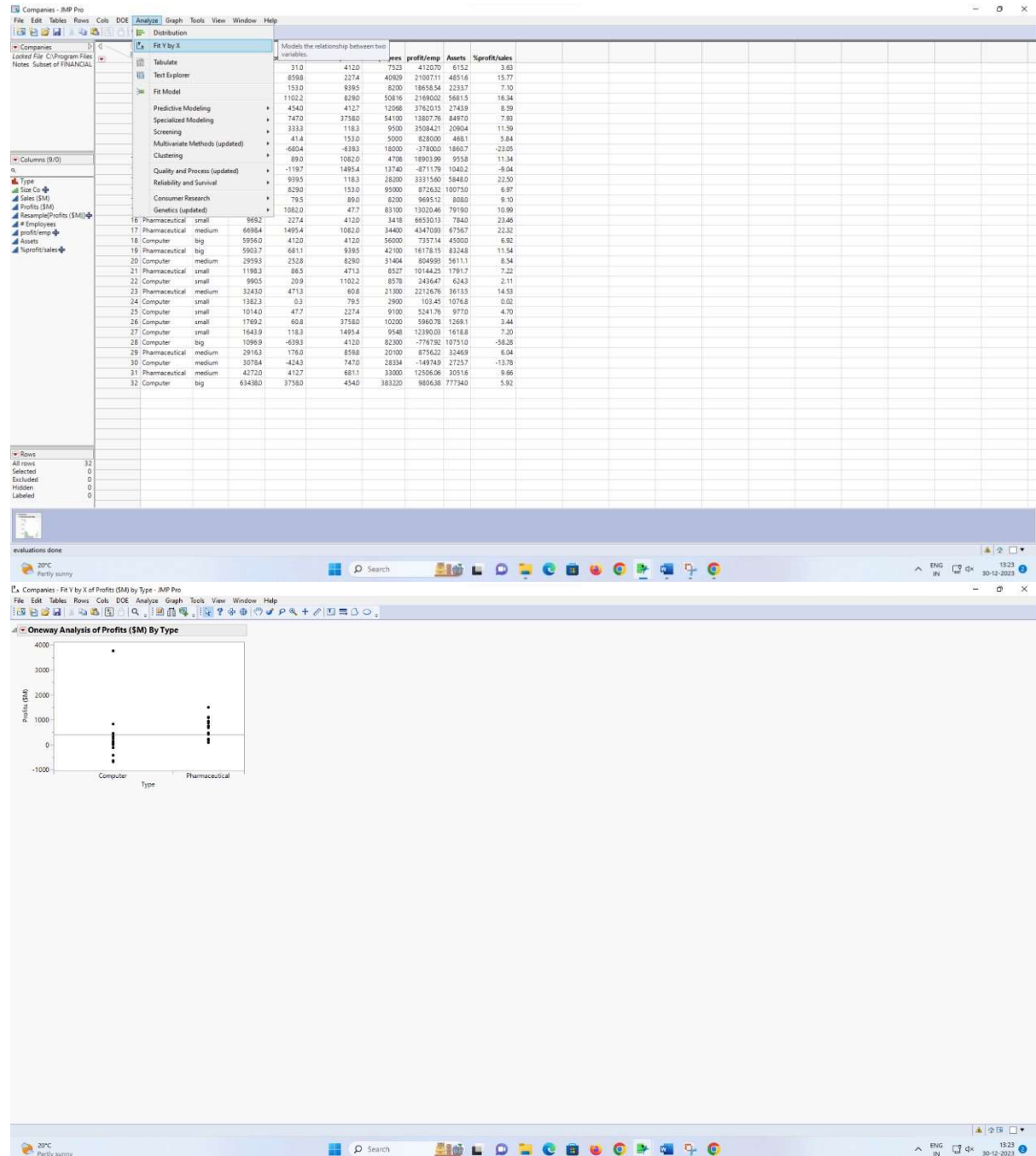
# DATASET:COMPANIES

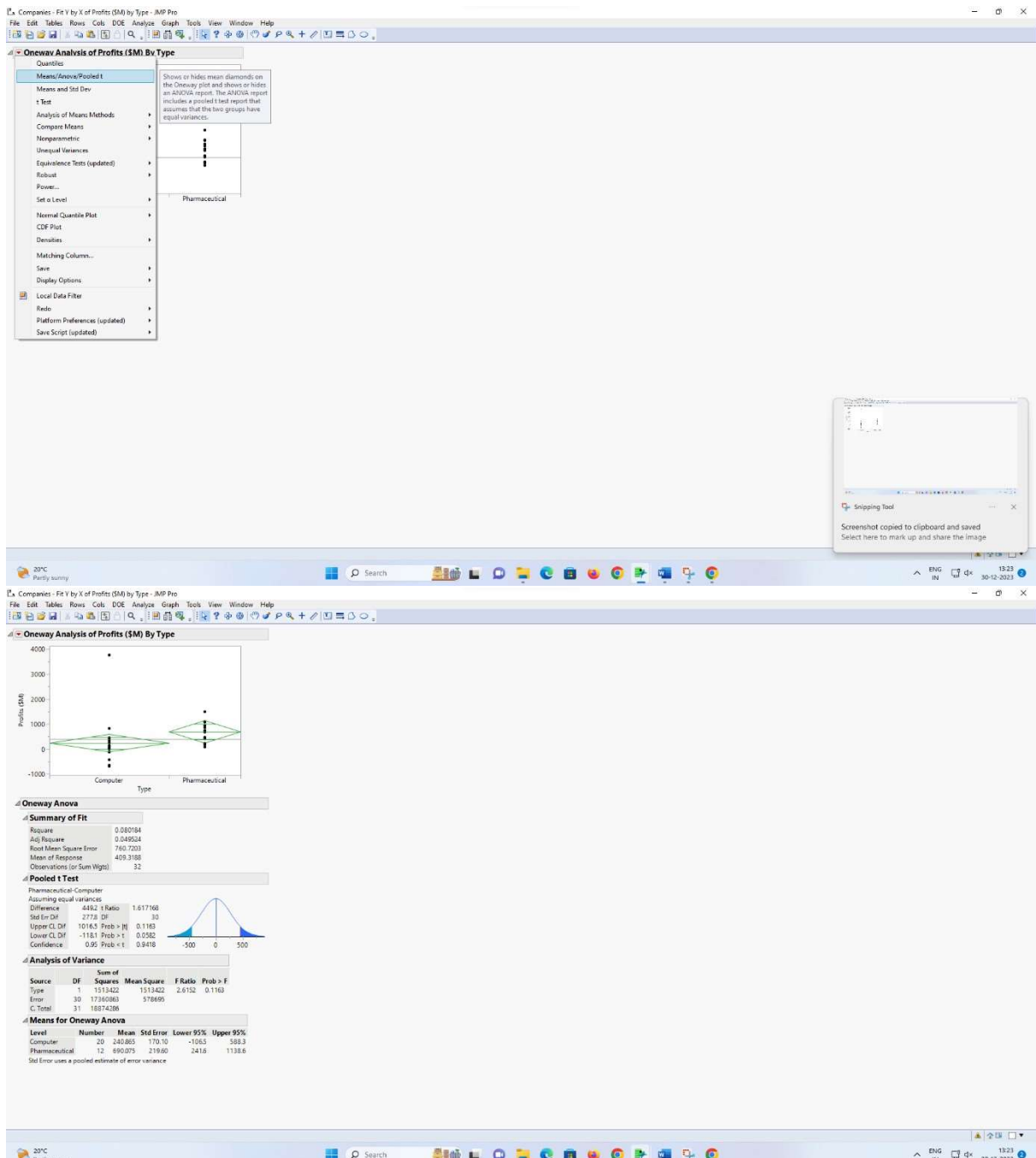
NAME: Toshith V

USN: 1BM21AI144

## ANOVA

Analyse - Fit Y by X – Drag and drop X and Y values – Select means/anova/pooled t



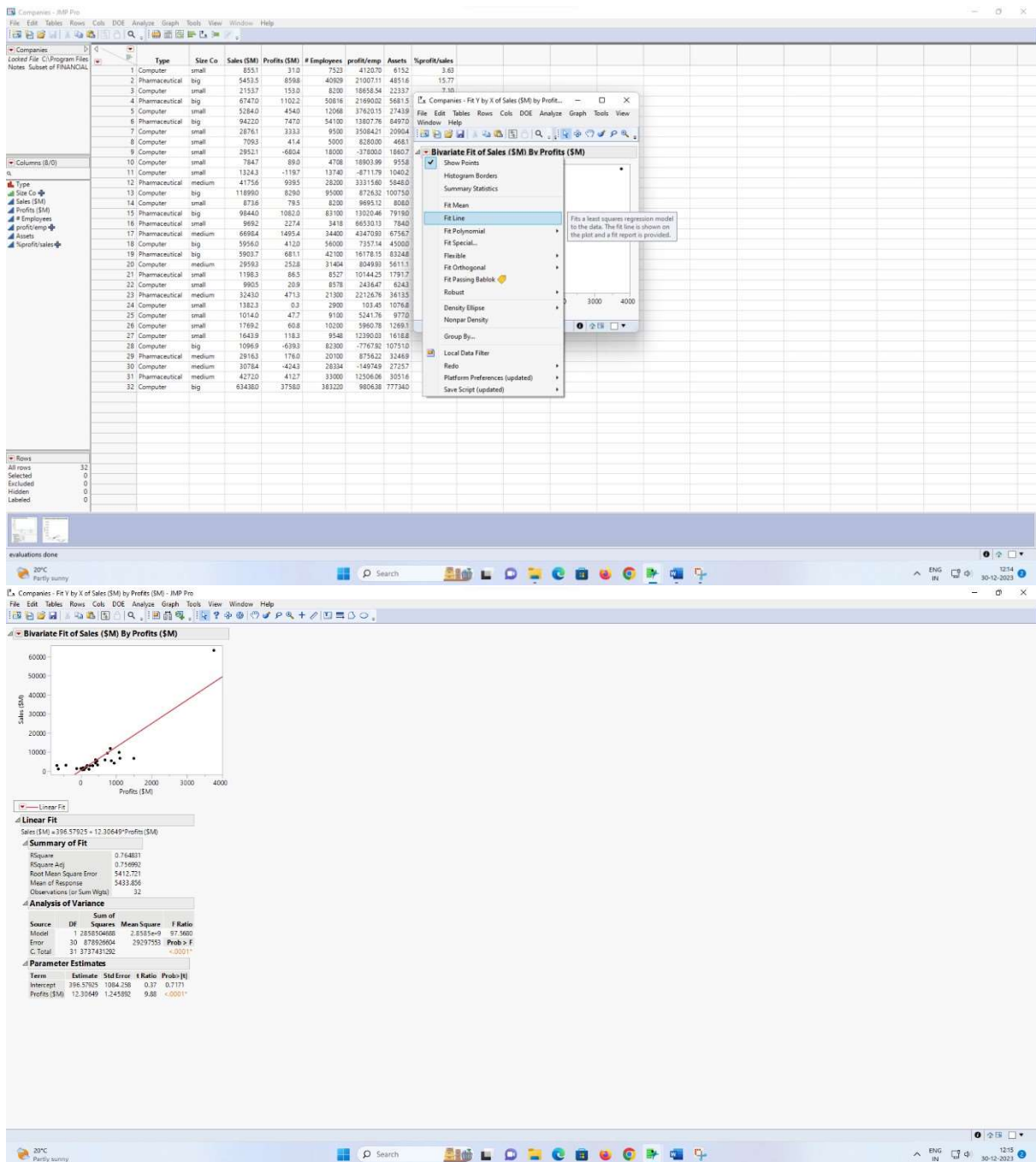


## REGRESSION

Analyse - Fit Y by X - Drag and drop X and Y values – Select fit line from the drop box – Linear regression model is fit

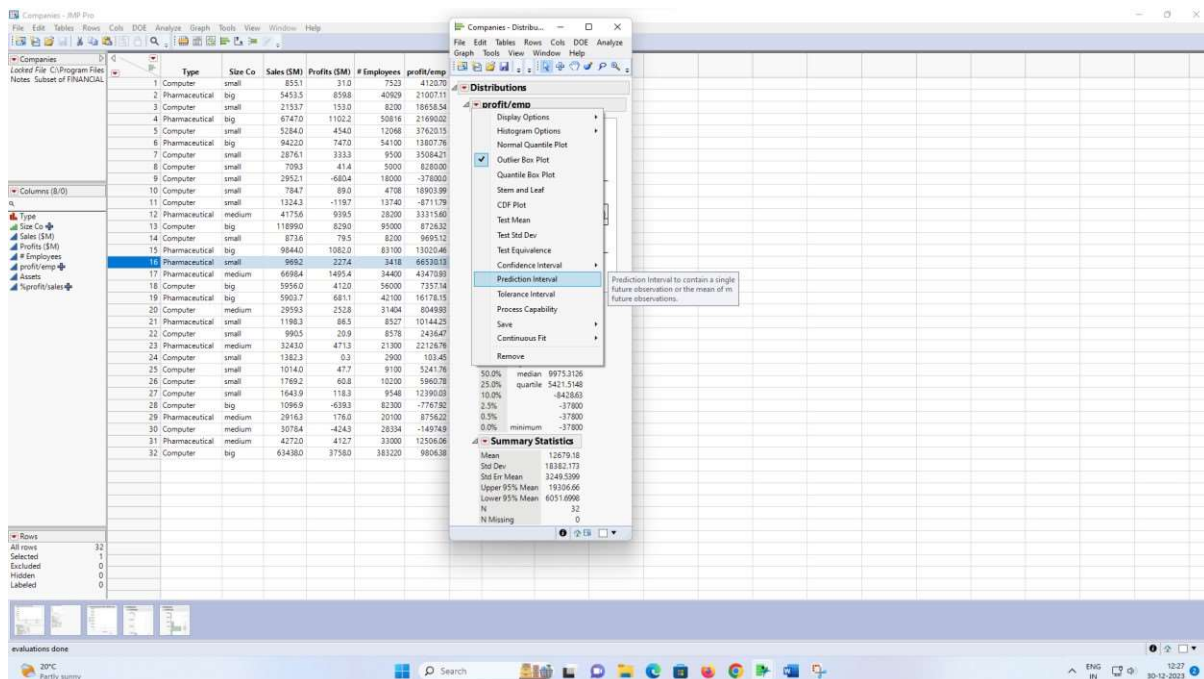
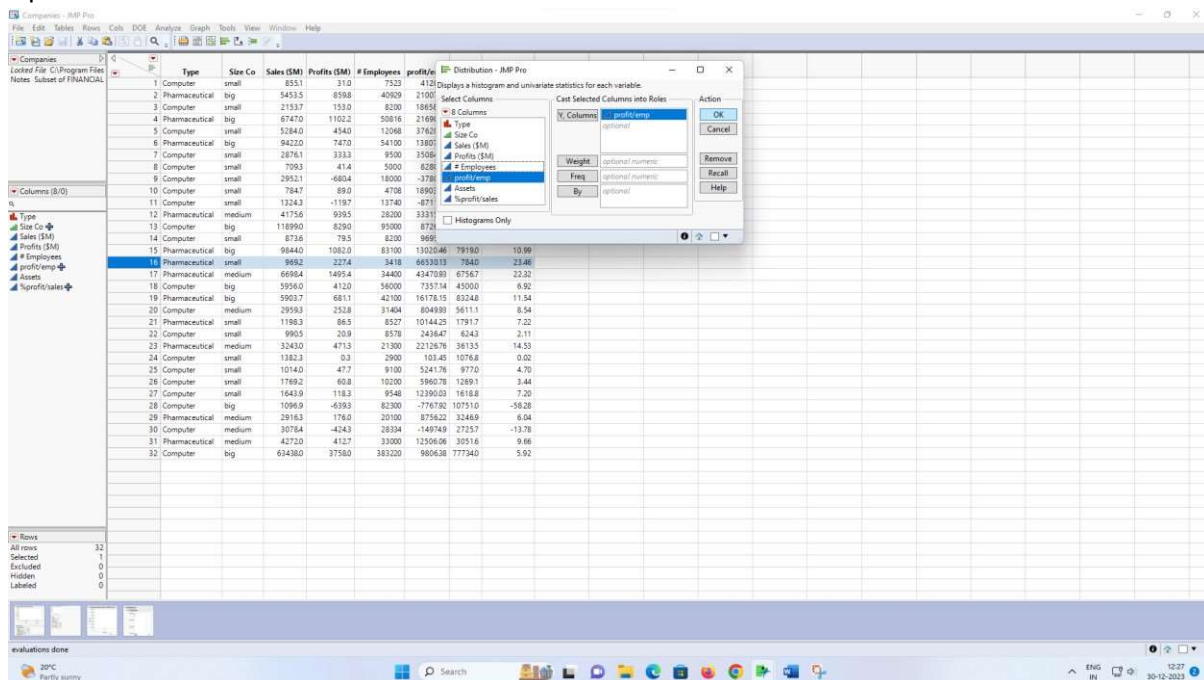
The screenshot shows the JMP Pro interface with a data table and a 'Fit Y by X' dialog box. The data table has the following columns: Type, Size Co, Sales (\$M), Profits (\$M), # Employees, and profit/emp. The 'Fit Y by X' dialog box is open, showing 'Sales (\$M)' as the Y Response and 'Profit/emp' as the X Factor. The 'Fit Model' button is highlighted. The background data table shows 32 rows of data for various companies, including Computer, Pharmaceutical, and Computer, with values for Sales, Profits, and Employees.

Type	Size Co	Sales (\$M)	Profits (\$M)	# Employees	profit/emp
1 Computer	small	855.1	31.0	7533	4132
2 Pharmaceutical	big	5453.5	698.8	4069	2100
3 Computer	small	2153.7	153.0	8200	1865.4
4 Pharmaceutical	big	6747.0	1102.2	5081.6	2169.0
5 Computer	small	5284.0	454.0	1206.8	376.2
6 Pharmaceutical	big	9422.0	747.0	5410.0	1380.7
7 Computer	small	2476.1	333.3	9500	350.4
8 Computer	small	709.3	41.4	5000	82.8
9 Computer	small	2952.1	-680.4	18000	-37.8
10 Computer	small	784.7	89.0	4708	1890.3
11 Computer	small	1324.3	-119.7	1374.0	-87.1
12 Pharmaceutical	medium	4175.6	939.5	28200	333.1
13 Computer	big	11899.0	8290	95000	87.2
14 Computer	small	873.6	79.5	8200	96.9
15 Pharmaceutical	big	9844.0	1002.0	83100	130.2
16 Pharmaceutical	small	969.2	227.4	3418	665.3
17 Pharmaceutical	medium	6698.4	1495.4	34400	434.7
18 Computer	big	5950.0	412.0	56000	73.5
19 Pharmaceutical	big	5903.7	681.1	42100	1617.8
20 Computer	medium	2959.3	252.8	31404	804.9
21 Pharmaceutical	small	1198.3	86.5	8527	10144.2
22 Computer	small	990.5	20.9	8578	2418.4
23 Pharmaceutical	medium	32450	471.3	21300	2212.6
24 Computer	small	1382.3	0.3	2900	103.4
25 Computer	small	1014.0	47.7	9100	5241.7
26 Computer	small	1789.2	60.8	10200	5960.7
27 Computer	small	1643.9	118.3	9548	12390.0
28 Computer	big	1096.9	-639.3	82300	-7767.8
29 Pharmaceutical	medium	2916.3	176.0	20100	8756.2
30 Computer	medium	3078.4	-424.3	28334	-14974.9
31 Pharmaceutical	medium	4272.0	412.7	33000	12506.0
32 Computer	big	63438.0	3758.0	383220	9606.38

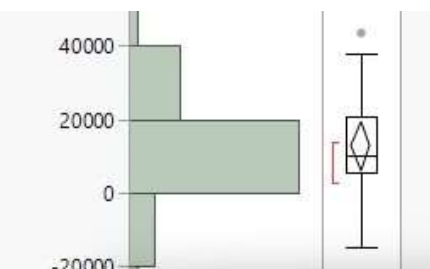


## TOLERANCE AND PREDICTION INTERVALS

Analyse - Drag and drop X and Y values –Select tolerance interval and predicted interval- enter the alpha value -Run



1000	8280.00
1000	-37800.0
1708	18903.99
1740	-8711.79
3200	33315.60
5000	8726.32
3200	9695.12
3100	13020.46
1418	66530.13
1400	43470.93
5000	7357.14
2100	16178.15
1404	8049.93
1527	10144.25
1578	2436.47
1300	22126.76
1900	103.45
1100	5241.76
1200	5960.78
1548	12390.03
2300	-7767.92
1100	8756.22
3334	-14974.9
3000	12506.06
3220	9806.38



Prediction Intervals - profit/emp

Enter (1-alpha) for prediction interval

Enter number of future samples

☒ Two-sided  
☐ One-sided lower limit  
☐ One-sided upper limit

OK Cancel Help

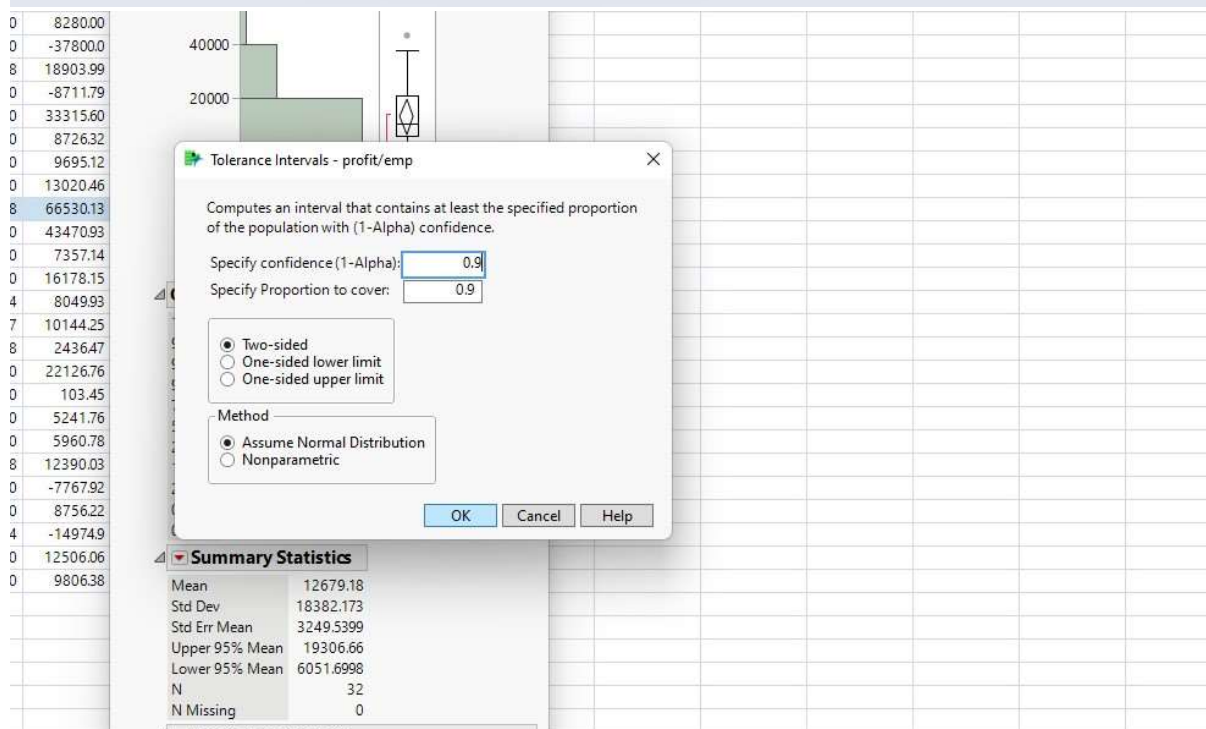
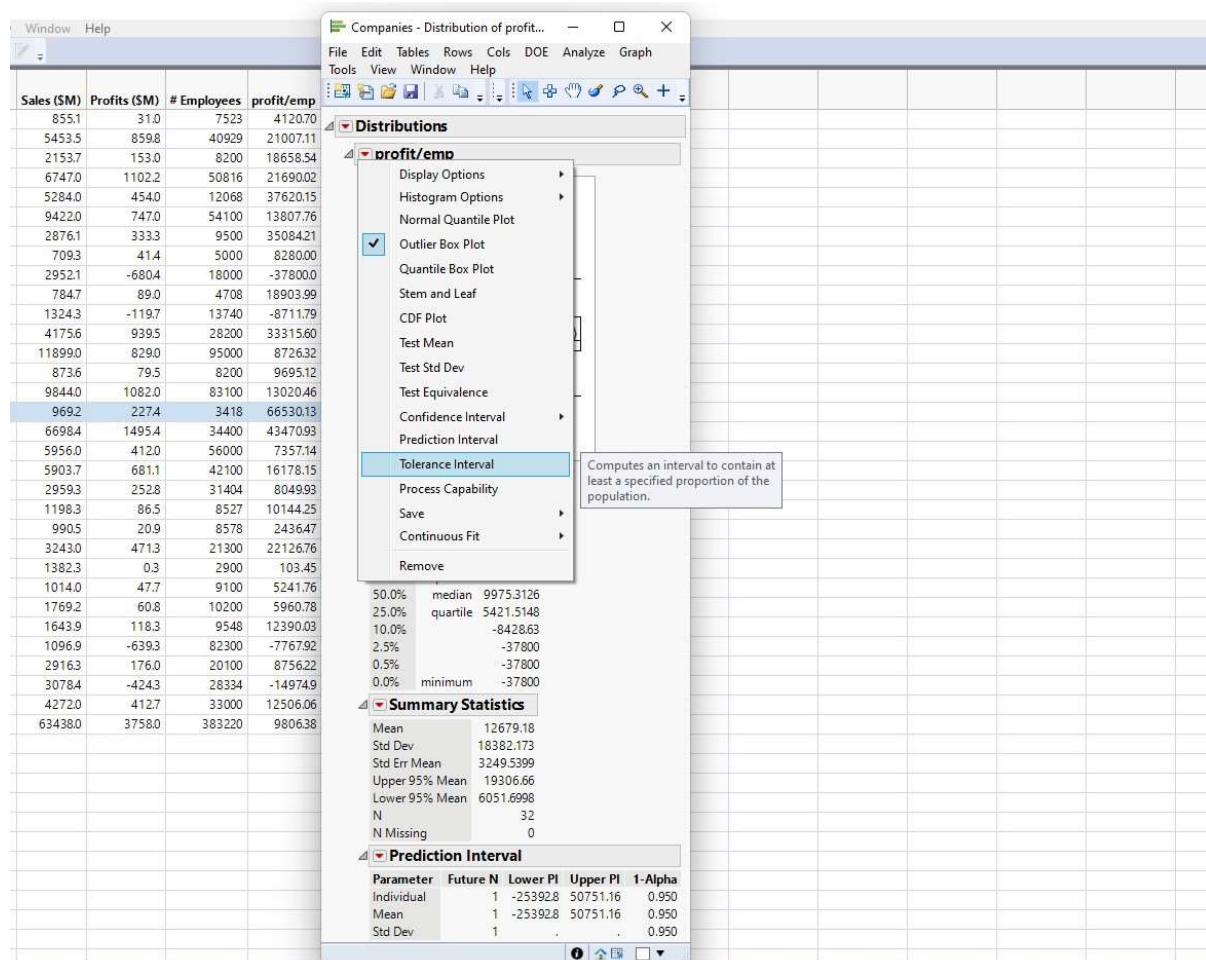
Quantile

100.0%	
99.5%	
97.5%	
90.0%	
75.0%	
50.0%	
25.0%	
10.0%	
2.5%	-37800
0.5%	-37800
0.0%	minimum -37800

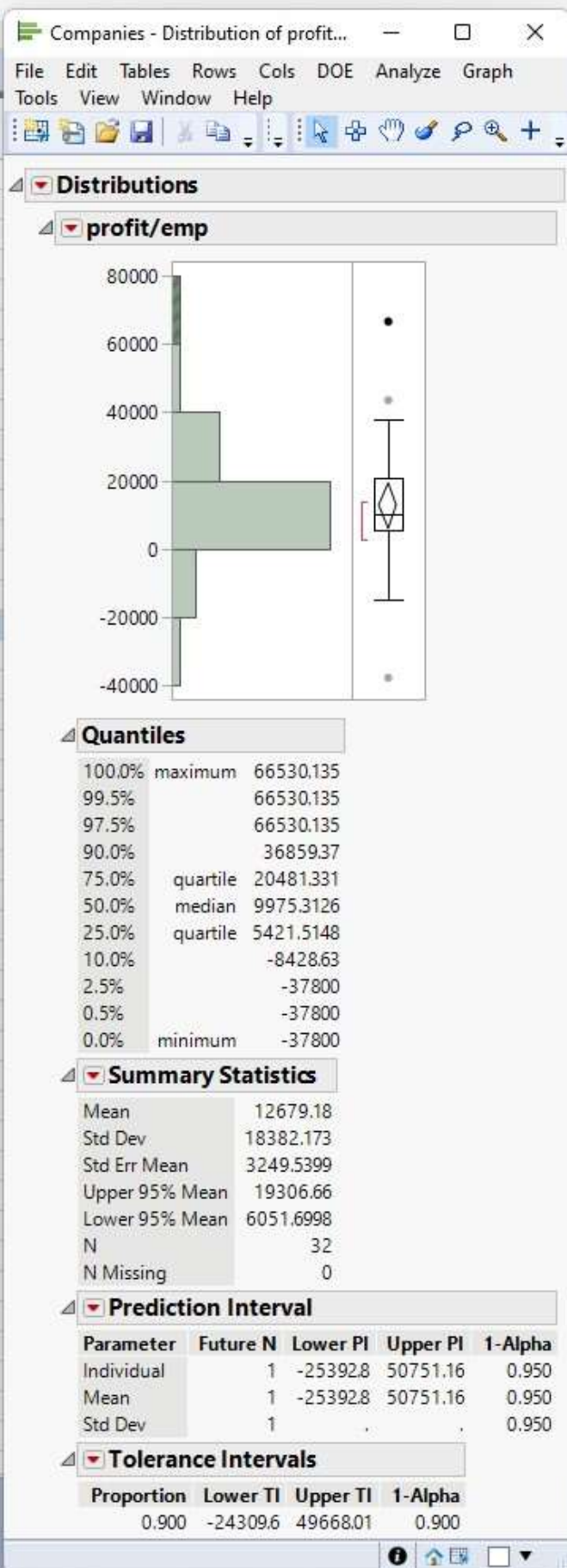
Summary Statistics

Mean	12679.18
Std Dev	18382.173
Std Err Mean	3249.5399
Upper 95% Mean	19306.66
Lower 95% Mean	6051.6998





Profit (\$M)	# Employees	profit/emp
31.0	7523	4120.70
859.8	40929	21007.11
153.0	8200	18658.54
1102.2	50816	21690.02
454.0	12068	37620.15
747.0	54100	13807.76
333.3	9500	35084.21
41.4	5000	8280.00
-680.4	18000	-37800.0
89.0	4708	18903.99
-119.7	13740	-8711.79
939.5	28200	33315.60
829.0	95000	8726.32
79.5	8200	9695.12
1082.0	83100	13020.46
227.4	3418	66530.13
1495.4	34400	43470.93
412.0	56000	7357.14
681.1	42100	16178.15
252.8	31404	8049.93
86.5	8527	10144.25
20.9	8578	2436.47
471.3	21300	22126.76
0.3	2900	103.45
47.7	9100	5241.76
60.8	10200	5960.78
118.3	9548	12390.03
-639.3	82300	-7767.92
176.0	20100	8756.22
-424.3	28334	-14974.9
412.7	33000	12506.06
3758.0	383220	9806.38





## BOOTSTRAPPING

Analyse- Distributions - Drag and drop Y values – Right click mean from statistical summary -Click Bootstrap-Enter the number of sample and run

Companies - JMP Pro

File Edit Tables Rows Cols DOE Analyze Graph Tools View Window Help

Locked File C:\Program Files Notes Subset of FINANCIAL

Columns (8/0)

Type  
Size Co  
Sales (\$M)  
Profits (\$M)  
# Employees  
profit/emp  
Assets  
%profit/sales

Rows  
All rows 32  
Selected 0  
Excluded 0  
Hidden 0  
Labeled 0

Analyze

Distribution  
Fit Y by X  
Tabulate  
Text Explorer  
Fit Model  
Predictive Modeling  
Specialized Modeling  
Screening  
Multivariate Methods (updated)  
Clustering  
Quality and Process (updated)  
Reliability and Survival  
Consumer Research  
Genetics (updated)

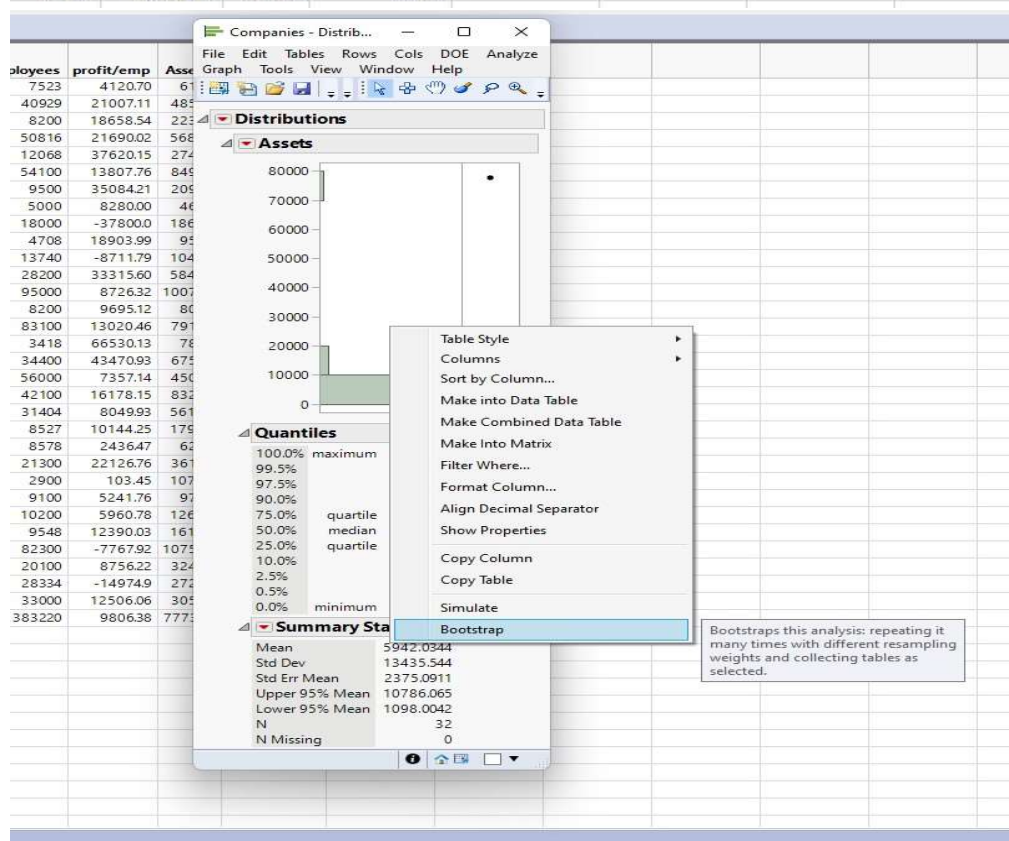
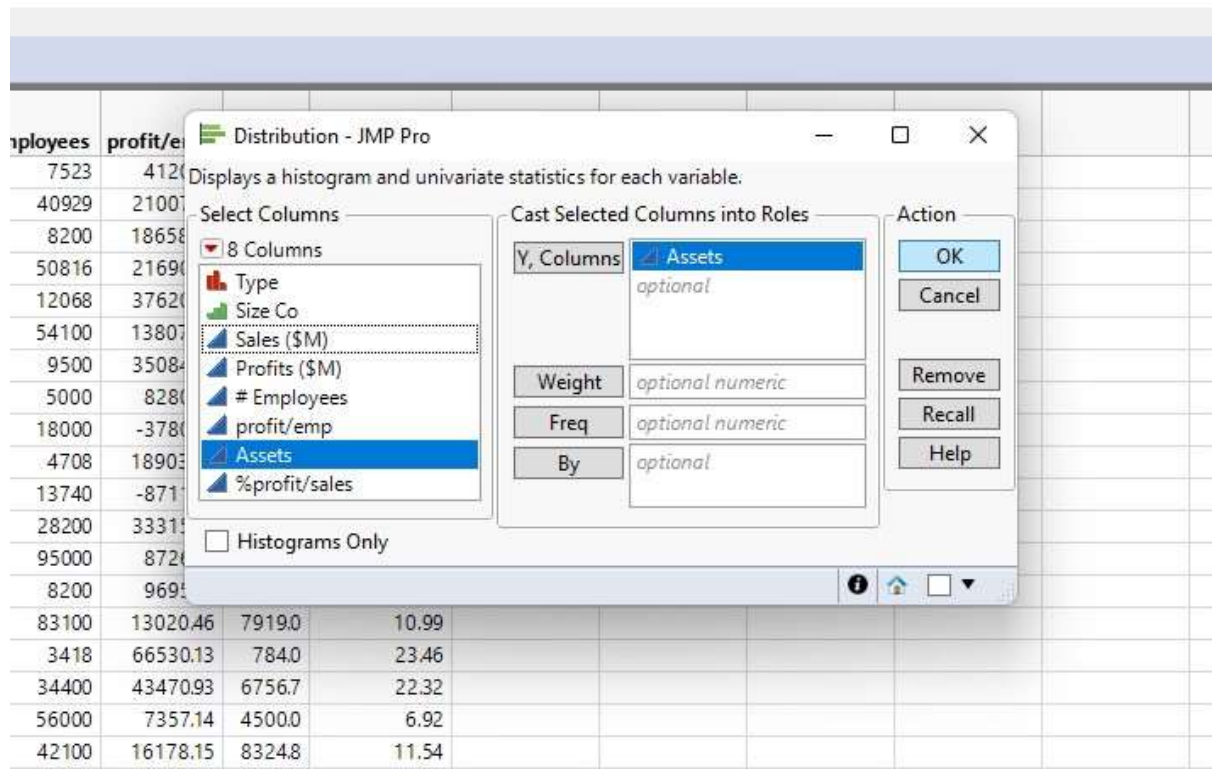
Displays a histogram and univariate statistics for each variable.

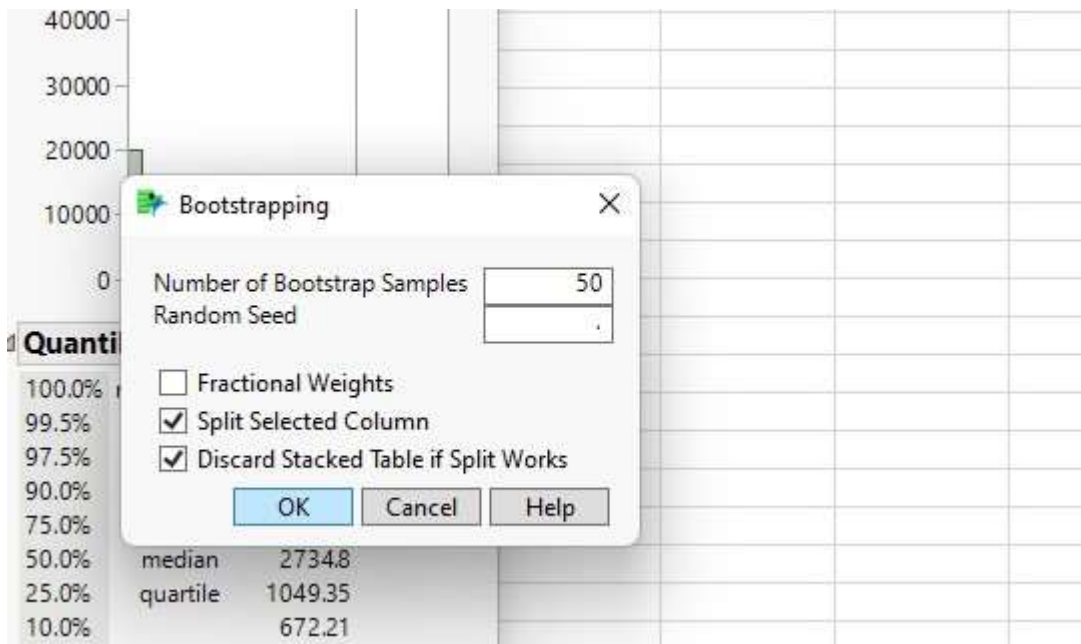
		Profits (\$M)	# Employees	profit/emp	Assets	%profit/sales		
		31.0	7523	4120.70	615.2	3.63		
		859.8	40929	21007.11	4851.6	15.77		
		153.0	8200	18658.54	2233.7	7.10		
		1102.2	50816	21690.02	5681.5	16.34		
		454.0	12068	37620.15	2743.9	8.59		
		747.0	54100	13807.76	8497.0	7.93		
		333.3	9500	35084.21	2090.4	11.59		
		41.4	5000	8280.00	468.1	5.84		
		-680.4	18000	-37800.0	1860.7	-23.05		
		89.0	4708	18903.99	955.8	11.34		
		-119.7	13740	-8711.79	1040.2	-9.04		
		939.5	28200	33315.60	5848.0	22.50		
		829.0	95000	87263.2	10075.0	6.97		
		79.5	8200	9695.12	808.0	9.10		
		1082.0	83100	13020.46	7919.0	10.99		
16	Pharmaceutical	small	969.2	227.4	3418	66530.13	784.0	23.46
17	Pharmaceutical	medium	6698.4	1495.4	34400	43470.93	6756.7	22.32
18	Computer	big	5956.0	4120	56000	7357.14	4500.0	6.92
19	Pharmaceutical	big	5903.7	681.1	42100	16178.15	8324.8	11.54
20	Computer	medium	2959.3	252.8	31404	8049.93	5611.1	8.54
21	Pharmaceutical	small	1198.3	86.5	8527	10144.25	1791.7	7.22
22	Computer	small	990.5	20.9	8578	2436.47	624.3	2.11
23	Pharmaceutical	medium	3243.0	471.3	21300	22126.76	3613.5	14.53
24	Computer	small	1382.3	0.3	2900	103.45	1076.8	0.02
25	Computer	small	1014.0	47.7	9100	5241.76	977.0	4.70
26	Computer	small	1769.2	60.8	10200	5960.78	1269.1	3.44
27	Computer	small	1643.9	118.3	9548	12390.03	1618.8	7.20
28	Computer	big	1096.9	-639.3	82300	-7767.92	10751.0	-58.28
29	Pharmaceutical	medium	2916.3	176.0	20100	8756.22	3246.9	6.04
30	Computer	medium	3078.4	-424.3	28334	-14974.9	2725.7	-13.78
31	Pharmaceutical	medium	4272.0	412.7	33000	12506.06	3051.6	9.66
32	Computer	big	63438.0	3758.0	383220	9806.38	77734.0	5.92

evaluations done

20°C Partly sunny

Search





**Bootstrapping**

Number of Bootstrap Samples

Random Seed

☐ Fractional Weights

☒ Split Selected Column

☒ Discard Stacked Table if Split Works

Distribution of Assets Bootstrap Results (Column 2) - JMP Pro										
Table	Y	BootID	Lower 95% Mean	Mean	N	N Missing	Std Dev	Std Err Mean	Upper 95% Mean	
1 Companies Assets	0	1090.0042008	5942.034375	32	0	13435.548014	2375.0910702	10786.064549		
2 Companies Assets	1	1856.8345564	9901.9625	32	0	22313.825211	3944.5819579	17846.990444		
3 Companies Assets	2	2572.3371994	9173.8475	32	0	18310.131983	3236.8046223	15775.350301		
4 Companies Assets	3	1440.898676	6496.425	32	0	13467.454479	2380.7320968	11551.880134		
5 Companies Assets	4	2924.0219962	3982.6125	32	0	2936.1376364	519.0407083	5041.2030358		
6 Companies Assets	5	2247.3802232	8869.00625	32	0	18366.10063	3246.6905748	15490.731025		
7 Companies Assets	6	884.7161732	5685.140625	32	0	13314.519704	2353.7100168	10485.340577		
8 Companies Assets	7	2381.4270875	3205.1475	32	0	2451.1028022	433.20779603	4148.8646235		
9 Companies Assets	8	1107.0002768	7803.36875	32	0	18573.24379	3283.3166582	14499.737233		
10 Companies Assets	9	1313.3302561	6138.634375	32	0	13383.604601	2365.9003924	10963.938994		
11 Companies Assets	10	1754.8688888	2873.65125	32	0	3103.0982891	546.5546072	3992.4393832		
12 Companies Assets	11	2853.3059192	5963.1625	32	0	3078.1728337	544.14918586	5072.9620888		
13 Companies Assets	12	1068.8280208	5916.44375	32	0	13443.489014	2376.8491145	10764.059479		
14 Companies Assets	13	-377.5156846	4476.300625	32	0	13462.938752	2378.9334881	9330.2989346		
15 Companies Assets	14	2738.6161458	3801.940625	32	0	2949.2962652	521.36154391	4885.2405042		
16 Companies Assets	15	1705.1327435	6334.15125	32	0	18384.443151	3250.280312	14893.171507		
17 Companies Assets	16	2862.0345033	10655.506375	32	0	22115.463515	3909.4885551	18608.984247		
18 Companies Assets	17	1579.4619441	6230.621875	32	0	18503.308829	3270.9337889	14921.778106		
19 Companies Assets	18	7395.76748613	5370.303125	32	0	14048.436022	2369.8448874	10403.838914		
20 Companies Assets	19	895.4920103	5741.759375	32	0	12447.688902	2376.3295531	10585.11554		
21 Companies Assets	20	3218.4723398	1154.559375	32	0	22011.763516	3891.166812	19090.64641		
22 Companies Assets	21	1513.7621016	6334.1675	32	0	19370.073116	3263.5179413	11154.612888		
23 Companies Assets	22	3065.850597	4164.821875	32	0	2992.8487163	529.03072702	5243.7871563		
24 Companies Assets	23	2394.0867396	3425.14375	32	0	2857.5177255	505.1425438	4455.3887604		
25 Companies Assets	24	1624.1172456	6419.321875	32	0	13300.120052	2351.1512699	11214.526504		
26 Companies Assets	25	1363.1417722	6330.400625	32	0	13500.221384	2386.534532	11117.639478		
27 Companies Assets	26	2701.3388455	3864.340625	32	0	3225.1808065	570.13686471	5027.1423045		
28 Companies Assets	27	7432.3306328	8116.884375	32	0	18540.418634	3277.5139355	14801.418117		
29 Companies Assets	28	2785.28272	4164.546875	32	0	3825.740363	676.2988525	5543.887478		
30 Companies Assets	29	2982.818789	4315.2625	32	0	3696.2651775	653.41354302	5647.908207		
31 Companies Assets	30	2428.4490176	3441.259375	32	0	2858.6557552	496.4984838	4453.6897324		
32 Companies Assets	31	959.47880084	5797.63125	32	0	13418.241383	2372.1091451	10635.783699		
33 Companies Assets	32	2030.894637	2993.7375	32	0	2670.568324	472.0942489	3936.5005953		
34 Companies Assets	33	442.09075662	5313.4625	32	0	13511.378991	2388.4969976	10184.634243		
35 Companies Assets	34	2541.5242638	3616.821875	32	0	2910.838273	514.56834712	4660.2915462		
36 Companies Assets	35	852.24621674	7550.806625	32	0	18379.48705	3284.420321	14249.489333		
37 Companies Assets	36	3060.5300035	11018.61875	32	0	22072.785611	3901.9540962	18976.704596		
38 Companies Assets	37	2031.8197219	6649.393125	32	0	18354.532801	3244.6842877	15266.889528		
39 Companies Assets	38	2476.277019	15844.125	32	0	32103.198111	3907.401289	18615.322388		
40 Companies Assets	39	449.0672616	5335.925	32	0	13554.531801	2396.0898627	10222.782738		
41 Companies Assets	40	1088.053486	5926.821875	32	0	13420.99015	2372.5112152	10765.5904		
42 Companies Assets	41	2538.0134712	3561.225	32	0	2838.094747	501.69393616	4584.4365288		
43 Companies Assets	42	3318.1424878	4360.81875	32	0	2891.8974297	511.23714842	5403.495122		
44 Companies Assets	43	1146.8266324	5994.5125	32	0	13445.683552	2376.8835043	10642.190368		
45 Companies Assets	44	1527.2530683	6335.225	32	0	13335.531816	2357.4112444	11143.196932		
46 Companies Assets	45	1510.6619108	8175.48375	32	0	18485.572858	3267.8338399	14840.125589		
47 Companies Assets	46	2350.3424207	5473.59375	32	0	3113.7337746	550.4337884	4596.1760383		

## RANDOMIZATION

Choose a column to randomize -right click-new formula column-random-sample with reinforcementFit the values-Generate mean- stimulate t table difference and switch it

The screenshot displays the JMP Pro interface with the 'Columns' menu open. The 'New Formula Column' option is selected, and the 'Random' submenu is visible. The 'Sample With Replacement' option is highlighted. The background shows a data table with columns: Type, Size Co, Sales (\$M), Profits (\$M), and %Profit/sales. The data table has 32 rows. The 'Columns' menu is open, and the 'New Formula Column' option is selected. The 'Random' submenu is also open, showing options like 'Random Uniform', 'Random Normal', 'Sample Without Replacement', and 'Sample With Replacement'.

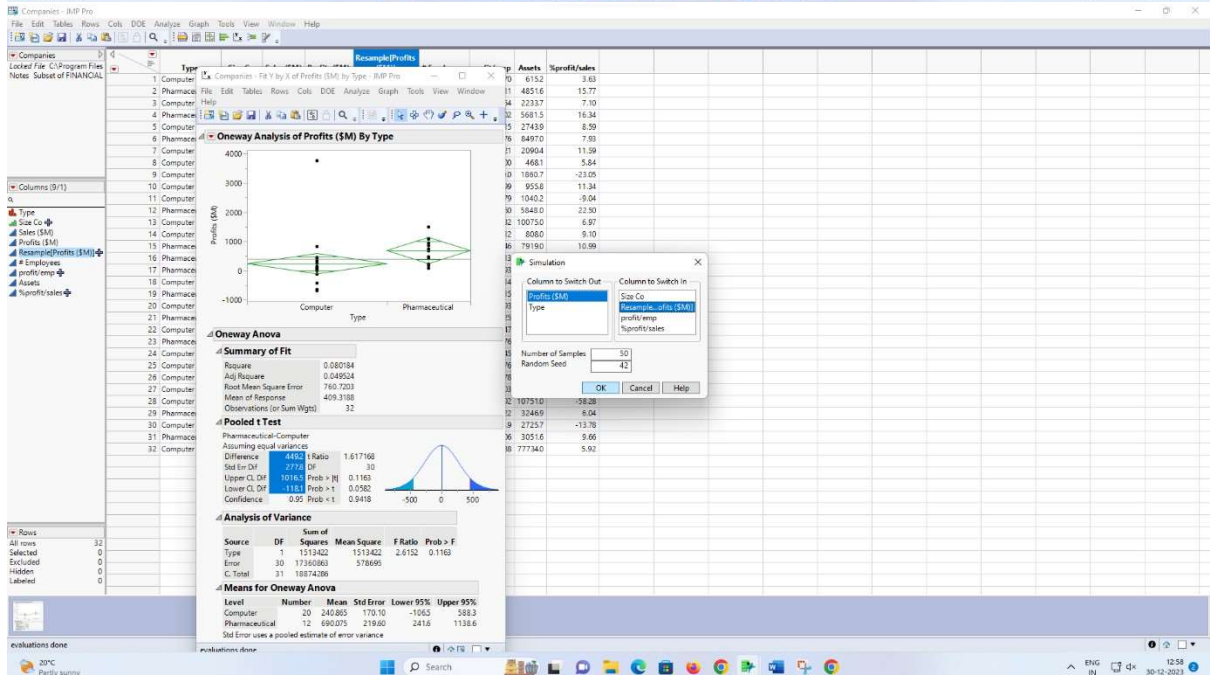
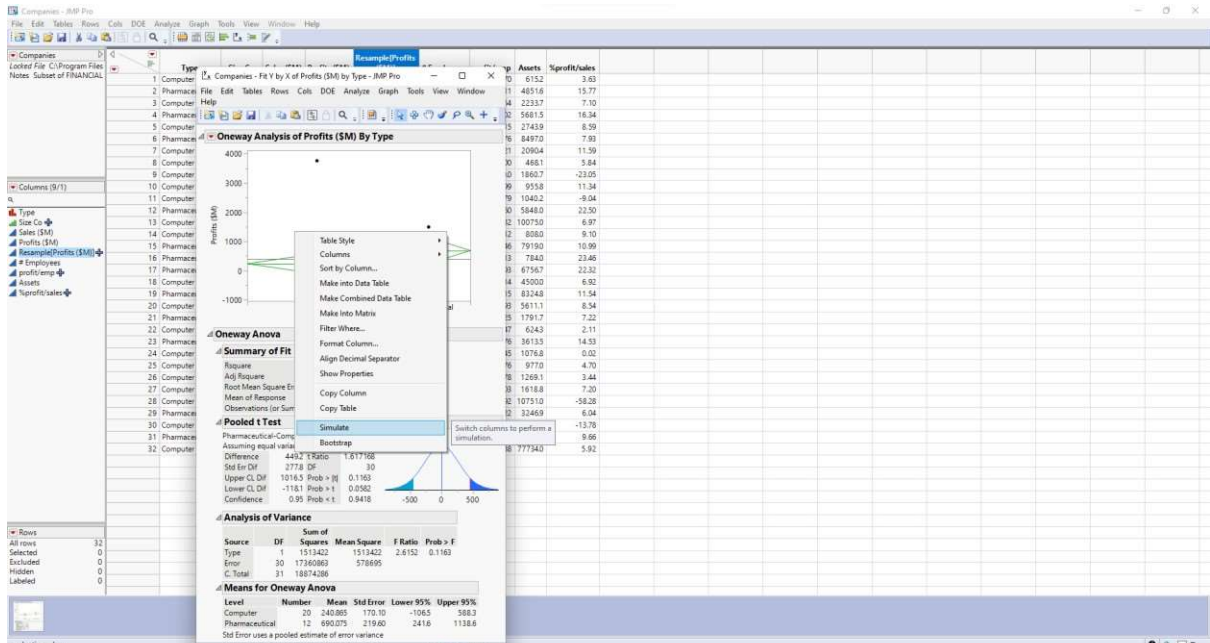
Type	Size Co	Sales (\$M)	Profits (\$M)	%Profit/sales
1 Computer	small	8551	310	3.63
2 Pharmaceutical	big	54535	8598	15.77
3 Computer	small	21537	1530	7.10
4 Pharmaceutical	big	67470	11022	16.34
5 Computer	small	52840	4540	8.59
6 Pharmaceutical	big	94220	7470	7.93
7 Computer	small	28761	3333	11.59
8 Computer	small	7093	474	6.68
9 Computer	small	29521	-6804	-23.05
10 Computer	small	7847	890	11.34
11 Computer	small	13243	-1197	-9.04
12 Pharmaceutical	medium	41756	3395	8.13
13 Computer	big	118990	8250	6.97
14 Computer	small	8736	795	9.10
15 Pharmaceutical	big	98440	10820	10.99
16 Pharmaceutical	small	9692	2274	23.46
17 Pharmaceutical	medium	66984	14954	22.32
18 Computer	big	59560	4120	6.92
19 Pharmaceutical	big	59037	6811	11.54
20 Computer	medium	25993	2528	9.73
21 Pharmaceutical	small	11983	865	7.23
22 Computer	small	9905	209	2.11
23 Pharmaceutical	medium	32430	4713	14.53
24 Computer	small	13823	93	0.67
25 Computer	small	10140	477	4.70
26 Computer	small	17692	608	3.44
27 Computer	small	16439	1183	7.20
28 Computer	big	10969	-4393	-39.98
29 Pharmaceutical	medium	29163	1760	6.04
30 Computer	medium	30784	-4243	-13.78
31 Pharmaceutical	medium	42720	4127	9.66
32 Computer	big	634380	37580	5.92











Fit Y by X of Profits (SM) by Type Simulate Results (Column 2) - JMP Pro

FileEditTablesRowsColsDOEAnalyzeGraphsToolsViewWindowHelp

Fit Y by X of Profits (SM) ...

Random Seed 142

Make Combined Data Table

Columns (10/0)

Table

Test Assumption

Confidence

Difference

Lower CL DF

Std Err DF

Upper CL DF

Rows

All rows

Selected

Excluded

Hidden

Labelled

	X	Y	Test Assumption	SimID	Confidence	Difference	Lower CL DF	Std Err DF	Upper CL DF
1	Companies	Type	Profits (SM) Equal Variances	1	•	-440.2	-1181	2778	1016.5
2	Companies	Type	Profits (SM) Equal Variances	1	•	-15.7	-603.2	2677	571.8
3	Companies	Type	Profits (SM) Equal Variances	2	•	152.6	-2088	1770	514.1
4	Companies	Type	Profits (SM) Equal Variances	3	•	-211.5	-6324	2061	2004
5	Companies	Type	Profits (SM) Equal Variances	4	•	-2686	-10940	4037	554.9
6	Companies	Type	Profits (SM) Equal Variances	5	•	-239.3	-8232	2854	3436
7	Companies	Type	Profits (SM) Equal Variances	6	•	170.9	-1426	1535	4844
8	Companies	Type	Profits (SM) Equal Variances	7	•	-89.2	-5063	2042	3279
9	Companies	Type	Profits (SM) Equal Variances	8	•	146.6	-6521	3666	993.7
10	Companies	Type	Profits (SM) Equal Variances	9	•	-372.4	-11441	3779	3994
11	Companies	Type	Profits (SM) Equal Variances	10	•	-24.8	-6467	3045	597.1
12	Companies	Type	Profits (SM) Equal Variances	11	•	415.9	-1477	2760	9794
13	Companies	Type	Profits (SM) Equal Variances	12	•	519.8	-1638	3342	1202.4
14	Companies	Type	Profits (SM) Equal Variances	13	•	244.9	-5309	3799	1020.6
15	Companies	Type	Profits (SM) Equal Variances	14	•	-2000	-9460	3653	5460
16	Companies	Type	Profits (SM) Equal Variances	15	•	17.3	-2707	1410	3052
17	Companies	Type	Profits (SM) Equal Variances	16	•	332.8	8.5	1671	6741
18	Companies	Type	Profits (SM) Equal Variances	17	•	53.1	-5828	3162	6989
19	Companies	Type	Profits (SM) Equal Variances	18	•	172.1	-4370	2963	7613
20	Companies	Type	Profits (SM) Equal Variances	19	•	-1879	-9447	3604	5889
21	Companies	Type	Profits (SM) Equal Variances	20	•	403.9	-2068	2906	10146
22	Companies	Type	Profits (SM) Equal Variances	21	•	-1.3	-3173	1547	3147
23	Companies	Type	Profits (SM) Equal Variances	22	•	-31.4	-3772	1693	3144
24	Companies	Type	Profits (SM) Equal Variances	23	•	624.4	-604	3451	13281
25	Companies	Type	Profits (SM) Equal Variances	24	•	-2267	-6902	2269	2367
26	Companies	Type	Profits (SM) Equal Variances	25	•	-12.4	-3181	1497	2934
27	Companies	Type	Profits (SM) Equal Variances	26	•	331.2	5.9	2630	10664
28	Companies	Type	Profits (SM) Equal Variances	27	•	-68.9	-6716	2795	4838
29	Companies	Type	Profits (SM) Equal Variances	28	•	2280	-6263	4163	1082.4
30	Companies	Type	Profits (SM) Equal Variances	29	•	324.3	-2180	2656	8667
31	Companies	Type	Profits (SM) Equal Variances	30	•	3362	-5099	4153	11663
32	Companies	Type	Profits (SM) Equal Variances	31	•	746.7	-1365	4325	16239
33	Companies	Type	Profits (SM) Equal Variances	32	•	-1270	-5193	1922	2654
34	Companies	Type	Profits (SM) Equal Variances	33	•	-1737	-4996	1596	1522
35	Companies	Type	Profits (SM) Equal Variances	34	•	-1388	-8340	2487	5742
36	Companies	Type	Profits (SM) Equal Variances	35	•	-630.4	-14469	3963	170.0
37	Companies	Type	Profits (SM) Equal Variances	36	•	75.5	-3256	1964	4766
38	Companies	Type	Profits (SM) Equal Variances	37	•	-2323	-6408	2000	1761
39	Companies	Type	Profits (SM) Equal Variances	38	•	-271.8	-7314	2643	3279
40	Companies	Type	Profits (SM) Equal Variances	39	•	-1872	-10304	3630	4520
41	Companies	Type	Profits (SM) Equal Variances	40	•	234.4	-4930	3562	9619
42	Companies	Type	Profits (SM) Equal Variances	41	•	1204	-9811	5393	1221.9
43	Companies	Type	Profits (SM) Equal Variances	42	•	-61.9	-4890	1700	2853
44	Companies	Type	Profits (SM) Equal Variances	43	•	-3746	-7039	1901	73.6
45	Companies	Type	Profits (SM) Equal Variances	44	•	162.8	-2949	2829	7604
46	Companies	Type	Profits (SM) Equal Variances	45	•	-2397	-8245	2863	3450
47	Companies	Type	Profits (SM) Equal Variances	46	•	-72.1	-4153	1681	2712

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## FIT AND VALIDATE PROBABILIT DISTRIBUTIONS

Distributions-choose the required probability distribution from continuous fit

The screenshot shows the JMP Pro interface. On the left, the 'Variables' list includes 'Profit (SM)', 'Assets', 'Employees', 'Profit/emp', and 'Profit/sales'. The main window displays a histogram for 'Profit (SM)' with a normal distribution curve overlaid. The histogram shows a right-skewed distribution with a peak around 1000. The 'Fit Y by X' menu is open, showing options for 'Fit Y by X', 'Tabulate', 'Text Explorer', 'Fit Model', 'Predictive Modeling', 'Specialized Modeling', 'Screening', 'Multivariate Methods (updated)', 'Clustering', 'Quality and Process (updated)', 'Reliability and Survival', and 'Consumer Research'. The 'Fit Y by X' option is selected, and the 'Fit Y by X' dialog box is open, showing 'Profit (SM)' as the Y variable and 'Assets', 'Employees', 'Profit/emp', and 'Profit/sales' as X variables.





