

Cp model selection

The REG Procedure  
 Model: MODEL1  
 Dependent Variable: sat

C(p) Selection Method

Number of Observations Read 49  
 Number of Observations Used 49

Number in Model	C(p)	R-Square	AIC	SBC	Variables in Model
4	4.0312	0.9107	309.0681	318.52719	ltakers years expend rank
5	5.0393	0.9127	309.9253	321.27619	ltakers income years expend rank
5	5.6681	0.9114	310.6528	322.00368	ltakers years public expend rank
6	7.0000	0.9128	311.8795	325.12224	ltakers income years public expend rank
3	7.2831	0.8998	312.7106	320.27792	ltakers years expend rank
3	7.6650	0.8990	313.0967	320.66402	ltakers expend rank
2	7.7331	0.8947	313.1361	318.81154	ltakers expend rank
4	8.0480	0.9023	313.4409	322.89999	income years expend rank
4	8.1239	0.9022	313.5199	322.97897	ltakers public expend rank
4	8.7181	0.9009	314.1339	323.59300	ltakers years public expend

Stepwise model selection  
 The REG Procedure  
 Model: MODEL1  
 Dependent Variable: sat

Number of Observations Read 49  
 Number of Observations Used 49

Stepwise Selection: Step 1

Variable ltakers Entered: R-Square = 0.8110 and C(p) = 46.0190

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	199007	199007	201.71	<.0001
Error	47	46369	986.58007		
Corrected Total	48	245376			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	1112.40781	12.38567	7958323	8066.58	<.0001
ltakers	-59.17547	4.16652	199007	201.71	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable expend Entered: R-Square = 0.8947 and C(p) = 7.7331

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	219530	109765	195.36	<.0001
Error	46	25846	561.86525		
Corrected Total	48	245376			

Variable	Estimate	Error	Parameter Type II SS	Standard F Value	Pr > F
Intercept	1028.58182	16.72531	2125013	3782.07	<.0001
ltakers	-66.16954	3.35049	219145	390.03	<.0001
expend	4.60492	0.76193	20523	36.53	<.0001

Bounds on condition number: 1.1355, 4.5418

Stepwise Selection: Step 3

Variable years Entered: R-Square = 0.8998 and C(p) = 7.2831

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	220779	73593	134.63	<.0001
Error	45	24598	546.61368		
Corrected Total	48	245376			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	904.94777	83.46267	64260	117.56	<.0001
ltakers	-64.63097	3.45800	190947	349.33	<.0001
years	7.89235	5.22284	1248.18561	2.28	0.1377
expend	4.21669	0.79421	15408	28.19	<.0001

Bounds on condition number: 1.2682, 11.008

---

Stepwise Selection: Step 4

Variable rank Entered: R-Square = 0.9107 and C(p) = 4.0312

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	223454	55864	112.12	<.0001
Error	44	21922	498.22959		
Corrected Total	48	245376			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	399.11452	232.37163	1469.80031	2.95	0.0929
ltakers	-38.10049	11.91520	5094.33925	10.22	0.0026
years	13.14731	5.47776	2870.09990	5.76	0.0207
expend	3.99566	0.76422	13620	27.34	<.0001
rank	4.40028	1.89885	2675.51388	5.37	0.0252

Bounds on condition number: 16.194, 135.87

---

PAGE4

All variables left in the model are significant at the 0.2500 level.

No other variable met the 0.2500 significance level for entry into the model.

Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	ltakers		1	0.8110	0.8110	46.0190	201.71	<.0001
2	expend		2	0.0836	0.8947	7.7331	36.53	<.0001
3	years		3	0.0051	0.8998	7.2831	2.28	0.1377
4	rank		4	0.0109	0.9107	4.0312	5.37	0.0252