

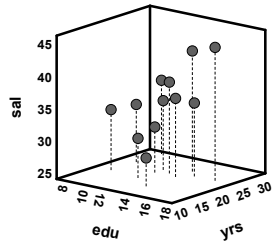
*Ch4 Ex2 12 Employees, Salary (\$1,000s),
* Education, Years Experience.

CORR sal edu yrs /STAT.

	Mean	Std. Deviation	N
sal	35.16	4.802	12
edu	12.50	2.541	12
yrs	21.75	4.115	12

	sal	edu
edu	.488	
	.107	
yrs	.549	-.178
	.064	.579

GRAPH /SCATTERPLOT(XYZ)=yrs WITH sal WITH edu.



REGRESS /DEP = sal /ENTER edu yrs /SAVE PRED(prd) RESI(res).

Model	R	R Square
1	.810	.656

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.493	2	83.246	8.599	.008
	Residual	87.125	9	9.681		
	Total	253.618	11			

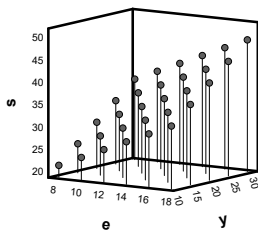
Model		Unstandardized Coefficients			t	Sig.
		B	Std. Error			
1	(Constant)	4.178	7.525	.555	.592	
	edu	1.144	.375	3.049	.014	
	yrs	.767	.232	3.310	.009	

	Mean	Std. Deviation	N
Predicted Value	35.16	3.890	12
Residual	.000	2.814	12

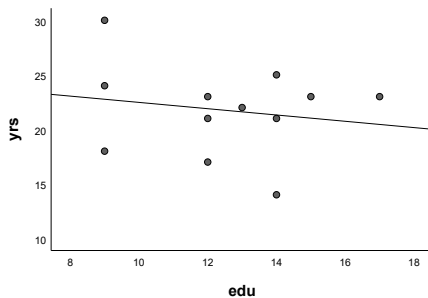
LIST.

	yrs	edu	sal	prd	res
1	14	14	28	30.931	-2.640
2	25	14	43	39.367	3.229
3	21	14	36	36.299	-.229
4	22	13	38	35.922	2.127
5	21	12	31	34.011	-3.049
6	17	12	30	30.944	-.913
7	30	9	35	37.481	-2.160
8	23	15	35	38.977	-3.695
9	23	12	35	35.545	-.913
10	18	9	33	28.279	4.989
11	23	17	45	41.265	3.312
12	24	9	33	32.880	-.056

*See later commands to generate best-fit plane.



GRAPH /SCATTERPLOT (BIVAR)=edu WITH yrs.



CORR sal edu yrs prd res /STAT /MISS = LIST.

	Mean	Std. Deviation
sal	35.15858	4.801681
edu	12.50	2.541
yrs	21.75	4.115
prd	35.15858	3.890466
res	.00000	2.814323

	sal	edu	yrs	prd
edu	.488			
yrs	.549	-.178		
prd	.810	.602	.678	
res	.586	.000	.000	.000

REGRESS /DEP = sal /ENTER yrs /ENTER edu.

Model	R	R Square
1	.549	.302
2	.810	.656

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.523	1	76.523	4.321	.064
	Residual	177.094	10	17.709		
	Total	253.618	11			
2	Regression	166.493	2	83.246	8.599	.008
	Residual	87.125	9	9.681		
	Total	253.618	11			

Model		Unstandardized Coefficients			Sig.
		B	Std. Error	t	
1	(Constant)	21.217	6.816	3.113	.011
	yrs	.641	.308	2.079	.064
2	(Constant)	4.178	7.525	.555	.592
	yrs	.767	.232	3.310	.009
	edu	1.144	.375	3.049	.014

*Commands to generate data.

```
set seed = 545237172.
input program.
loop o = 1 to 12.
end case.
end loop.
end file.
end input program.
```

```
compute #u = rv.norm(0,1).
compute #x = #u*.6 + rv.norm(0,1)*sqrt(1-.6**2).
compute #z = #u*.6 + rv.norm(0,1)*sqrt(1-.6**2).
compute #y = #z*.5 + #x*.5 + rv.norm(0,1)*.7071.
```

```
compute yrs = rnd(20 + #x*5).
compute edu = rnd(13 + #z*2.5).
compute sal = rnd(35000 + #y*5000)/1000.
```

```
format o yrs edu (f2.0) sal (f6.3).
LIST.
```

*Commands to generate best-fit plane.

```
INPUT PROGRAM.
LOOP y = 10 TO 30 BY 5.
LEAVE y.
LOOP e = 8 TO 18 BY 2.
END CASE.
END LOOP.
END LOOP.
END FILE.
END INPUT PROGRAM.
```

```
COMPUTE s = 4.178+.767*y+1.144*e.
GRAPH /SCATTERPLOT(XYZ)=y WITH s WITH e.
```