

STT5100 - Automne 2018

Arthur Charpentier

Exemples Numériques

X_i : entrance test score

Y_i : grade point average of freshmen year

i :	1	2	3	4	5	6	7	8	9	10
X_i :	5.5	4.8	4.7	3.9	4.5	6.2	6.0	5.2	4.7	4.3
Y_i :	3.1	2.3	3.0	1.9	2.5	3.7	3.4	2.6	2.8	1.6

i :	11	12	13	14	15	16	17	18	19	20
X_i :	4.9	5.4	5.0	6.3	4.6	4.3	5.0	5.9	4.1	4.7
Y_i :	2.0	2.9	2.3	3.2	1.8	1.4	2.0	3.8	2.2	1.5

Source: John Neter (1974). *Applied Linear Regression Models*. McGraw-Hill, Exercice 2.15.

City i	Increase in Ridership (thousands) Y_i	Maps Distributed (thousands) X_i
1	.60	80
2	6.70	220
3	5.30	140
4	4.00	120
5	6.55	180
6	2.15	100
7	6.60	200
8	5.75	160

Source: John Neter (1974). *Applied Linear Regression Models*. McGraw-Hill, Table 4.1, repris dans *Applied Linear Statistical Models* [pdf](#), Table 3.1 page 105.

<i>Observation</i> <i>i</i>	<i>Size of</i> <i>Minimum</i> <i>Deposit</i> <i>(dollars)</i> <i>X_i</i>	<i>Number</i> <i>of New</i> <i>Accounts</i> <i>Y_i</i>	<i>Observation</i> <i>i</i>	<i>Size of</i> <i>Minimum</i> <i>Deposit</i> <i>(dollars)</i> <i>X_i</i>	<i>Number</i> <i>of New</i> <i>Accounts</i> <i>Y_i</i>
1	125	160	7	75	42
2	100	112	8	175	124
3	200	124	9	125	150
4	75	28	10	200	104
5	150	152	11	100	136
6	175	156			

Source: John Neter (1974). *Applied Linear Regression Models*. McGraw-Hill, Table 4.3, repris dans *Applied Linear Statistical Models* [pdf](#), Table 3.4 page 120.

<i>District</i> <i>i</i>	<i>Sales</i> <i>(gross of jars;</i> <i>1 gross = 12 dozen)</i> <i>Y_i</i>	<i>Target Population</i> <i>(thousands of persons)</i> <i>X_{i1}</i>	<i>Per Capita</i> <i>Discretionary</i> <i>Income (dollars)</i> <i>X_{i2}</i>
1	162	274	2,450
2	120	180	3,254
3	223	375	3,802
4	131	205	2,838
5	67	86	2,347
6	169	265	3,782
7	81	98	3,008
8	192	330	2,450
9	116	195	2,137
10	55	53	2,560
11	252	430	4,020
12	232	372	4,427
13	144	236	2,660
14	103	157	2,088
15	212	370	2,605

Source: John Neter (1974). *Applied Linear Regression Models*. McGraw-Hill, Table 7.2.

Respondent	Education (in years) X	Income (in dollars) Y
1	4	\$ 6281
2	4	10516
3	6	6898
4	6	8212
5	6	11744
6	8	8618
7	8	10011
8	8	12405
9	8	14664
10	10	7472
11	10	11598
12	10	15336
13	11	10186
14	12	9771
15	12	12444
16	12	14213
17	12	16908
18	12	18347
19	13	19546
20	14	12660
21	14	16326
22	15	12772
23	15	17218
24	16	12599
25	16	14852
26	16	19138
27	16	21779
28	17	16428
29	17	20018
30	18	16526
31	18	19414
32	20	18822

Source: Michael Lewis-Beck (1980). *Applied Regression*. Sage. [html](#), Table 2 page 16.

**THE RELATIONSHIP BETWEEN THE BIRTH RATE
AND CONSUMPTION OF PROTEIN**

No	Country	Birth rate per thousand	Daily consumption of animal protein in grammes per person
1	Formosa	45·6	4·7
2	Malaya	39·7	7·5
3	India	33·0	8·7
4	Japan	27·0	9·7
5	Yugoslavia	25·9	11·2
6	Greece	23·5	15·2
7	Italy	23·4	15·2
8	Bulgaria	22·2	16·8
9	Germany	20·0	37·3
10	Ireland	19·1	46·7
11	Denmark	18·3	59·1
12	Australia	18·0	59·9
13	USA	17·9	61·4
14	Sweden	15·0	61·6

Source: Zdzislaw Hellwig (1963). *Linear regression and its application to economics*. Pergamon Press. pdf, Table 1 page 6.

TABLE 2
BEER PRODUCTION AND LABOUR COSTS IN A WROCLAW
BREWERY

No	x	y	No	x	y
1	1,225	2,712,505	12	8,488	3,418,286
2	5,584	2,528,475	13	13,103	4,127,280
3	6,520	3,121,262	14	14,472	4,136,483
4	11,429	3,393,046	15	19,506	4,722,553
5	13,707	3,754,896	16	20,017	4,662,901
6	11,033	3,922,740	17	19,328	5,740,375
7	12,891	4,171,386	18	19,713	5,301,217
8	14,136	4,523,888	19	13,563	4,801,669
9	13,303	4,475,384	20	10,408	4,554,512
10	9,465	3,851,908	21	8,805	4,090,115
11	7,277	3,400,815	22	10,683	4,093,417

Source: Zdzislaw Hellwig (1963). *Linear regression and its application to economics*. Pergamon Press. pdf, Table 2 page 162.

	(1)	(2)	(3)
Firm	Number of	Size of Firm	Type of
i	Months Elapsed Y_i	(million dollars) X_{i1}	Firm
1	17	151	Mutual
2	26	92	Mutual
3	21	175	Mutual
4	30	31	Mutual
5	22	104	Mutual
6	0	277	Mutual
7	12	210	Mutual
8	19	120	Mutual
9	4	290	Mutual
10	16	238	Mutual
11	28	164	Stock
12	15	272	Stock
13	11	295	Stock
14	38	68	Stock
15	31	85	Stock
16	21	224	Stock
17	20	166	Stock
18	13	305	Stock
19	30	124	Stock
20	14	246	Stock

Source: John Neter (1974). *Applied Linear Regression Models*. McGraw-Hill, repris dans *Applied Linear Statistical Models* [pdf](#), Table 8.2 page 317.

<i>Manager</i> <i>i</i>	<i>Average Annual</i> <i>Income</i> (<i>thousand dollars</i>) X_{i1}	<i>Risk Aversion</i> <i>Score</i> X_{i2}	<i>Amount of Life</i> <i>Insurance Carried</i> (<i>thousand dollars</i>) Y_i
1	66.290	7	196
2	40.964	5	63
3	72.996	10	252
4	45.010	6	84
5	57.204	4	126
6	26.852	5	14
7	38.122	4	49
8	35.840	6	49
9	75.796	9	266
10	37.408	5	49
11	54.376	2	105
12	46.186	7	98
13	46.130	4	77
14	30.366	3	14
15	39.060	5	56
16	79.380	1	245
17	52.766	8	133
18	55.916	6	133

Source: John Neter (1974). *Applied Linear Regression Models*. McGraw-Hill, Table 9.4, repris dans *Applied Linear Statistical Models* [pdf](#), Table 10.1 page 387.