第十一章 偏最小二乘回归

一、康复部俱乐部20名成员测试数据的典型相关分析

1、康复俱乐部20名尘成员的测试数据

| **Obs** | **x1** | **x2** | **x3** | **y1** | **y2** | **y3** |
| --- | --- | --- | --- | --- | --- | --- |
| **1** | 191 | 36 | 50 | 5 | 162 | 60 |
| **2** | 193 | 38 | 58 | 12 | 101 | 101 |
| **3** | 189 | 35 | 46 | 13 | 155 | 58 |
| **4** | 211 | 38 | 56 | 8 | 101 | 38 |
| **5** | 176 | 31 | 74 | 15 | 200 | 40 |
| **6** | 169 | 34 | 50 | 17 | 120 | 38 |
| **7** | 154 | 34 | 64 | 14 | 215 | 105 |
| **8** | 193 | 36 | 46 | 6 | 70 | 31 |
| **9** | 176 | 37 | 54 | 4 | 60 | 25 |
| **10** | 156 | 33 | 54 | 15 | 255 | 73 |
| **11** | 189 | 37 | 52 | 2 | 110 | 60 |
| **12** | 162 | 35 | 62 | 12 | 105 | 37 |
| **13** | 182 | 36 | 56 | 4 | 101 | 42 |
| **14** | 167 | 34 | 60 | 6 | 125 | 40 |
| **15** | 154 | 33 | 56 | 17 | 251 | 250 |
| **16** | 166 | 33 | 52 | 13 | 210 | 115 |
| **17** | 247 | 46 | 50 | 1 | 50 | 50 |
| **18** | 202 | 32 | 52 | 11 | 230 | 80 |
| **19** | 138 | 33 | 68 | 2 | 110 | 43 |

2、SAS程序

data chapter11;

input x1 x2 x3 y1 y2 y3;

cards;

191 36 50 5 162 60

193 38 58 12 101 101

189 35 46 13 155 58

211 38 56 8 101 38

176 31 74 15 200 40

169 34 50 17 120 38

154 34 64 14 215 105

193 36 46 6 70 31

176 37 54 4 60 25

156 33 54 15 255 73

189 37 52 2 110 60

162 35 62 12 105 37

182 36 56 4 101 42

167 34 60 6 125 40

154 33 56 17 251 250

166 33 52 13 210 115

247 46 50 1 50 50

202 32 52 11 230 80

138 33 68 2 110 43

;

proc pls all;

model y1 y2 y3=x1 x2 x3；

run;

3、结果分析

| **以下原因引起的偏差百分比: 偏最小二乘因子** | | | | |
| --- | --- | --- | --- | --- |
| **提取因子数** | **模型效应** | | **因变量** | |
| **当前** | **合计** | **当前** | **合计** |
| **1** | 68.1170 | 68.1170 | 22.9727 | 22.9727 |
| **2** | 22.9330 | 91.0499 | 5.1429 | 28.1156 |
| **3** | 8.9501 | 100.0000 | 3.0652 | 31.1808 |