



数学建模培训课程论文

聚类判别分析作业

班级：21电子科学与技术2班

姓名：田博松

学号：202111040246

序号：143

组别：A

2023年 7 月

**题1**

QUICK CLUSTER M100 M200 M400 M800 M1500 M3000 MARATHON

/MISSING=LISTWISE

/CRITERIA=CLUSTER(4) MXITER(10) CONVERGE(0)

/METHOD=KMEANS(NOUPDATE)

/PRINT ID(地区) INITIAL CLUSTER DISTAN.

快速聚类

|  |  |  |
| --- | --- | --- |
| **备注** | | |
| 已创建输出 | | 16-JUL-2023 18:47:21 |
| 注释 | |  |
| 输入 | 活动数据集 | 数据集1 |
| 过滤器 | <无> |
| 权重 | <无> |
| 拆分文件 | <无> |
| 工作数据文件中的行数 | 55 |
| 缺失值处理 | 对缺失的定义 | 将用户定义的缺失值视为缺失。 |
| 使用的个案数 | 统计基于那些对任何所用聚类变量都没有缺失值的个案。 |
| 语法 | | QUICK CLUSTER M100 M200 M400 M800 M1500 M3000 MARATHON  /MISSING=LISTWISE  /CRITERIA=CLUSTER(4) MXITER(10) CONVERGE(0)  /METHOD=KMEANS(NOUPDATE)  /PRINT ID(地区) INITIAL CLUSTER DISTAN. |
| 资源 | 处理程序时间 | 00:00:00.02 |
| 耗用时间 | 00:00:00.02 |
| 所需工作空间 | 1632 字节 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **初始聚类中心** | | | | |
|  | 聚类 | | | |
| 1 | 2 | 3 | 4 |
| M100 | 12.30 | 10.79 | 12.74 | 12.25 |
| M200 | 25.00 | 21.83 | 25.85 | 25.07 |
| M400 | 55.08 | 50.62 | 58.73 | 56.96 |
| M800 | 2.12 | 1.96 | 2.33 | 2.24 |
| M1500 | 4.52 | 3.95 | 5.81 | 4.84 |
| M3000 | 9.94 | 8.50 | 130.04 | 10.69 |
| MARATHON | 182.77 | 142.72 | 306.00 | 233.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **迭代历史记录a** | | | | |
| 迭代 | 聚类中心中的变动 | | | |
| 1 | 2 | 3 | 4 |
| 1 | 3.076 | 10.809 | .000 | 2.797 |
| 2 | 2.222 | 1.196 | .000 | .000 |
| 3 | .000 | .000 | .000 | .000 |
| a. 由于聚类中心中不存在变动或者仅有小幅变动，因此实现了收敛。任何中心的最大绝对坐标变动为 .000。当前迭代为 3。初始中心之间的最小距离为 40.480。 | | | | |

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| **聚类成员** | | | |
| 个案号 | 地区 | 聚类 | 距离 |
| 1 | 阿根廷 | 1 | 3.830 |
| 2 | 澳大利亚 | 2 | 2.427 |
| 3 | 奥地利 | 2 | 4.947 |
| 4 | 比利时 | 2 | 3.272 |
| 5 | 百慕大 | 1 | 12.297 |
| 6 | 巴西 | 1 | 13.570 |
| 7 | 缅甸 | 1 | 8.896 |
| 8 | 加拿大 | 2 | 5.485 |
| 9 | 智利 | 1 | 10.788 |
| 10 | 中国 | 1 | 13.682 |
| 11 | 哥伦比亚 | 2 | 10.998 |
| 12 | 库克岛 | 4 | 3.916 |
| 13 | 哥斯达黎 | 1 | 10.984 |
| 14 | 捷克 | 2 | 5.815 |
| 15 | 丹麦 | 2 | 3.409 |
| 16 | 多米尼加 | 1 | 21.781 |
| 17 | 芬兰 | 2 | 1.813 |
| 18 | 法国 | 2 | .827 |
| 19 | 东德 | 2 | 4.980 |
| 20 | 西德 | 2 | 6.439 |
| 21 | 英国 | 2 | 5.141 |
| 22 | 希腊 | 1 | .326 |
| 23 | 危地马拉 | 4 | 20.631 |
| 24 | 匈牙利 | 2 | 1.814 |
| 25 | 印度 | 1 | 5.985 |
| 26 | 印度尼西 | 1 | 19.148 |
| 27 | 爱尔兰 | 2 | 5.427 |
| 28 | 以色列 | 2 | 6.704 |
| 29 | 意大利 | 2 | 2.793 |
| 30 | 日本 | 2 | 4.661 |
| 31 | 肯尼亚 | 1 | 2.362 |
| 32 | 韩国 | 2 | 10.942 |
| 33 | 朝鲜 | 1 | 4.893 |
| 34 | 卢森堡 | 1 | 7.653 |
| 35 | 马来西亚 | 1 | .916 |
| 36 | 毛里求斯 | 4 | 25.530 |
| 37 | 墨西哥 | 2 | 4.535 |
| 38 | 荷兰 | 2 | 2.198 |
| 39 | 新西兰 | 2 | 9.113 |
| 40 | 挪威 | 2 | 9.218 |
| 41 | 巴布亚新 | 4 | 2.797 |
| 42 | 菲律宾 | 1 | 18.238 |
| 43 | 波兰 | 2 | 6.770 |
| 44 | 葡萄牙 | 2 | 4.411 |
| 45 | 罗马尼亚 | 2 | 10.899 |
| 46 | 新加坡 | 1 | 1.241 |
| 47 | 西班牙 | 2 | 8.284 |
| 48 | 瑞典 | 2 | .292 |
| 49 | 瑞士 | 2 | 1.794 |
| 50 | 中国台北 | 1 | 5.067 |
| 51 | 泰国 | 1 | 13.760 |
| 52 | 土耳其 | 1 | 19.026 |
| 53 | 美国 | 2 | 12.002 |
| 54 | 苏联 | 2 | 4.376 |
| 55 | 西沙摩亚 | 3 | .000 |

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| --- | --- | --- | --- | --- |
| **最终聚类中心** | | | | |
|  | 聚类 | | | |
| 1 | 2 | 3 | 4 |
| M100 | 11.85 | 11.35 | 12.74 | 12.19 |
| M200 | 24.14 | 23.00 | 25.85 | 25.45 |
| M400 | 54.66 | 51.80 | 58.73 | 57.89 |
| M800 | 2.13 | 2.01 | 2.33 | 2.27 |
| M1500 | 4.46 | 4.12 | 5.81 | 4.83 |
| M3000 | 9.79 | 8.92 | 130.04 | 10.81 |
| MARATHON | 182.15 | 154.59 | 306.00 | 235.61 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **最终聚类中心之间的距离** | | | | |
| 聚类 | 1 | 2 | 3 | 4 |
| 1 |  | 27.753 | 172.691 | 53.587 |
| 2 | 27.753 |  | 194.056 | 81.317 |
| 3 | 172.691 | 194.056 |  | 138.469 |
| 4 | 53.587 | 81.317 | 138.469 |  |

|  |  |  |
| --- | --- | --- |
| **每个聚类中的个案数目** | | |
| 聚类 | 1 | 20.000 |
| 2 | 30.000 |
| 3 | 1.000 |
| 4 | 4.000 |
| 有效 | | 55.000 |
| 缺失 | | .000 |

**题2**

（1）

QUICK CLUSTER 花萼长 花萼宽 花瓣长 花瓣宽

/MISSING=LISTWISE

/CRITERIA=CLUSTER(6) MXITER(10) CONVERGE(0)

/METHOD=KMEANS(NOUPDATE)

/PRINT ID(类别) INITIAL CLUSTER DISTAN.

快速聚类

|  |  |  |
| --- | --- | --- |
| **备注** | | |
| 已创建输出 | | 16-JUL-2023 22:00:45 |
| 注释 | |  |
| 输入 | 数据 | D:\桌面\数模培训\7.16\iris1.txt |
| 活动数据集 | 数据集1 |
| 过滤器 | <无> |
| 权重 | <无> |
| 拆分文件 | <无> |
| 工作数据文件中的行数 | 150 |
| 缺失值处理 | 对缺失的定义 | 将用户定义的缺失值视为缺失。 |
| 使用的个案数 | 统计基于那些对任何所用聚类变量都没有缺失值的个案。 |
| 语法 | | QUICK CLUSTER 花萼长 花萼宽 花瓣长 花瓣宽  /MISSING=LISTWISE  /CRITERIA=CLUSTER(6) MXITER(10) CONVERGE(0)  /METHOD=KMEANS(NOUPDATE)  /PRINT ID(类别) INITIAL CLUSTER DISTAN. |
| 资源 | 处理程序时间 | 00:00:00.02 |
| 耗用时间 | 00:00:00.04 |
| 所需工作空间 | 1408 字节 |

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| **初始聚类中心** | | | | | | |
|  | 聚类 | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 花萼长 | 57 | 54 | 45 | 51 | 67 | 77 |
| 花萼宽 | 44 | 30 | 23 | 25 | 25 | 38 |
| 花瓣长 | 15 | 45 | 13 | 30 | 58 | 67 |
| 花瓣宽 | 4 | 15 | 3 | 11 | 18 | 22 |

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| **迭代历史记录a** | | | | | | |
| 迭代 | 聚类中心中的变动 | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | 8.436 | 5.536 | 8.872 | 5.044 | 6.325 | 6.081 |
| 2 | .193 | 1.000 | .244 | 1.865 | .906 | 2.024 |
| 3 | .137 | .913 | .180 | 1.431 | .435 | .614 |
| 4 | .000 | 1.129 | .000 | 1.367 | .643 | .670 |
| 5 | .000 | .533 | .000 | .517 | .347 | .000 |
| 6 | .000 | .320 | .000 | .281 | .268 | .000 |
| 7 | .000 | .351 | .000 | .325 | .397 | .000 |
| 8 | .000 | .000 | .000 | .000 | .000 | .000 |
| a. 由于聚类中心中不存在变动或者仅有小幅变动，因此实现了收敛。任何中心的最大绝对坐标变动为 .000。当前迭代为 8。初始中心之间的最小距离为 16.583。 | | | | | | |

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| **聚类成员** | | | |
| 个案号 | 类别 | 聚类 | 距离 |
| 1 | 1 | 3 | 3.448 |
| 2 | 3 | 2 | 3.751 |
| 3 | 2 | 2 | 5.225 |
| 4 | 3 | 5 | 3.546 |
| 5 | 3 | 5 | 5.155 |
| 6 | 3 | 6 | 8.299 |
| 7 | 3 | 4 | 9.880 |
| 8 | 2 | 2 | 4.706 |
| 9 | 2 | 4 | 2.501 |
| 10 | 1 | 1 | 4.066 |
| 11 | 3 | 5 | 3.581 |
| 12 | 3 | 6 | 5.646 |
| 13 | 2 | 4 | 8.714 |
| 14 | 3 | 2 | 3.351 |
| 15 | 3 | 2 | 9.122 |
| 16 | 1 | 1 | 4.602 |
| 17 | 1 | 1 | 2.556 |
| 18 | 1 | 3 | 1.307 |
| 19 | 1 | 1 | 2.834 |
| 20 | 2 | 4 | 4.705 |
| 21 | 3 | 6 | 5.646 |
| 22 | 2 | 4 | 9.061 |
| 23 | 1 | 3 | 2.149 |
| 24 | 2 | 2 | 4.971 |
| 25 | 1 | 3 | 3.775 |
| 26 | 1 | 3 | 1.375 |
| 27 | 3 | 6 | 4.168 |
| 28 | 3 | 2 | 7.654 |
| 29 | 1 | 3 | 2.370 |
| 30 | 2 | 4 | 4.632 |
| 31 | 2 | 4 | 10.059 |
| 32 | 1 | 1 | 3.640 |
| 33 | 2 | 2 | 2.069 |
| 34 | 3 | 5 | 2.841 |
| 35 | 1 | 3 | 8.612 |
| 36 | 2 | 4 | 3.282 |
| 37 | 1 | 1 | 1.880 |
| 38 | 3 | 5 | 6.831 |
| 39 | 3 | 5 | 3.053 |
| 40 | 1 | 3 | 3.130 |
| 41 | 1 | 3 | 6.402 |
| 42 | 2 | 4 | 1.713 |
| 43 | 1 | 1 | 4.931 |
| 44 | 2 | 2 | 4.593 |
| 45 | 1 | 1 | 3.756 |
| 46 | 2 | 4 | 6.389 |
| 47 | 3 | 2 | 5.577 |
| 48 | 2 | 4 | 7.809 |
| 49 | 1 | 1 | 4.452 |
| 50 | 3 | 2 | 3.339 |
| 51 | 3 | 6 | 4.835 |
| 52 | 1 | 3 | 5.679 |
| 53 | 3 | 5 | 3.094 |
| 54 | 2 | 2 | 6.706 |
| 55 | 2 | 2 | 6.748 |
| 56 | 2 | 2 | 3.316 |
| 57 | 3 | 6 | 4.108 |
| 58 | 3 | 6 | 7.374 |
| 59 | 3 | 5 | 3.872 |
| 60 | 2 | 4 | 3.361 |
| 61 | 3 | 6 | 8.653 |
| 62 | 2 | 4 | 3.786 |
| 63 | 2 | 4 | 9.089 |
| 64 | 1 | 3 | 1.375 |
| 65 | 2 | 2 | 6.469 |
| 66 | 2 | 4 | 6.724 |
| 67 | 2 | 2 | 5.561 |
| 68 | 2 | 2 | 4.019 |
| 69 | 2 | 4 | 3.506 |
| 70 | 1 | 1 | 2.427 |
| 71 | 2 | 4 | 4.500 |
| 72 | 2 | 4 | 1.666 |
| 73 | 3 | 2 | 7.984 |
| 74 | 2 | 2 | 5.675 |
| 75 | 1 | 1 | 1.917 |
| 76 | 1 | 1 | 1.051 |
| 77 | 2 | 2 | 3.374 |
| 78 | 3 | 5 | 5.700 |
| 79 | 2 | 2 | 2.850 |
| 80 | 3 | 5 | 3.684 |
| 81 | 2 | 2 | 6.253 |
| 82 | 3 | 5 | 4.881 |
| 83 | 3 | 5 | 3.828 |
| 84 | 1 | 3 | 2.106 |
| 85 | 3 | 5 | 3.147 |
| 86 | 3 | 6 | 8.055 |
| 87 | 2 | 4 | 3.062 |
| 88 | 1 | 3 | 2.018 |
| 89 | 1 | 3 | 1.854 |
| 90 | 1 | 3 | 3.703 |
| 91 | 1 | 3 | 5.358 |
| 92 | 3 | 2 | 2.480 |
| 93 | 2 | 4 | 4.168 |
| 94 | 2 | 4 | 4.949 |
| 95 | 3 | 5 | 4.838 |
| 96 | 1 | 1 | 3.322 |
| 97 | 3 | 2 | 3.508 |
| 98 | 2 | 4 | 5.312 |
| 99 | 3 | 2 | 7.343 |
| 100 | 2 | 2 | 6.351 |
| 101 | 2 | 4 | 3.535 |
| 102 | 3 | 5 | 4.618 |
| 103 | 1 | 1 | 3.145 |
| 104 | 3 | 6 | 3.791 |
| 105 | 2 | 2 | 7.105 |
| 106 | 2 | 2 | 3.863 |
| 107 | 3 | 5 | 3.012 |
| 108 | 3 | 6 | 7.374 |
| 109 | 2 | 2 | 7.534 |
| 110 | 1 | 3 | 3.475 |
| 111 | 1 | 1 | 5.165 |
| 112 | 2 | 2 | 6.193 |
| 113 | 3 | 5 | 9.064 |
| 114 | 3 | 5 | 3.094 |
| 115 | 2 | 2 | 7.016 |
| 116 | 2 | 2 | 4.397 |
| 117 | 3 | 2 | 6.542 |
| 118 | 3 | 5 | 5.057 |
| 119 | 3 | 6 | 3.518 |
| 120 | 2 | 2 | 8.813 |
| 121 | 3 | 2 | 5.449 |
| 122 | 1 | 1 | 3.006 |
| 123 | 1 | 3 | 3.341 |
| 124 | 1 | 3 | 3.475 |
| 125 | 2 | 4 | 4.921 |
| 126 | 1 | 1 | 2.337 |
| 127 | 1 | 3 | 3.727 |
| 128 | 1 | 1 | 7.194 |
| 129 | 1 | 3 | 2.312 |
| 130 | 1 | 1 | 3.932 |
| 131 | 1 | 1 | 8.712 |
| 132 | 3 | 2 | 6.542 |
| 133 | 1 | 1 | 4.709 |
| 134 | 3 | 5 | 4.663 |
| 135 | 1 | 1 | 6.050 |
| 136 | 1 | 1 | 3.640 |
| 137 | 1 | 1 | 3.708 |
| 138 | 2 | 4 | 3.088 |
| 139 | 2 | 2 | 5.206 |
| 140 | 1 | 1 | 3.570 |
| 141 | 3 | 5 | 7.466 |
| 142 | 1 | 1 | 1.802 |
| 143 | 2 | 2 | 5.549 |
| 144 | 3 | 5 | 3.936 |
| 145 | 3 | 5 | 4.627 |
| 146 | 3 | 5 | 5.073 |
| 147 | 1 | 3 | 1.854 |
| 148 | 1 | 1 | 1.954 |
| 149 | 1 | 1 | 3.784 |
| 150 | 2 | 2 | 5.888 |

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| **最终聚类中心** | | | | | | |
|  | 聚类 | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 花萼长 | 52 | 62 | 47 | 55 | 65 | 75 |
| 花萼宽 | 37 | 29 | 31 | 26 | 31 | 31 |
| 花瓣长 | 15 | 47 | 14 | 39 | 55 | 63 |
| 花瓣宽 | 3 | 16 | 2 | 12 | 22 | 21 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **最终聚类中心之间的距离** | | | | | | |
| 聚类 | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 |  | 37.114 | 7.753 | 28.034 | 46.507 | 56.074 |
| 2 | 37.114 |  | 39.113 | 11.774 | 10.412 | 20.809 |
| 3 | 7.753 | 39.113 |  | 28.546 | 48.940 | 59.139 |
| 4 | 28.034 | 11.774 | 28.546 |  | 21.755 | 32.530 |
| 5 | 46.507 | 10.412 | 48.940 | 21.755 |  | 12.403 |
| 6 | 56.074 | 20.809 | 59.139 | 32.530 | 12.403 |  |

|  |  |  |
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| **每个聚类中的个案数目** | | |
| 聚类 | 1 | 28.000 |
| 2 | 39.000 |
| 3 | 22.000 |
| 4 | 25.000 |
| 5 | 24.000 |
| 6 | 12.000 |
| 有效 | | 150.000 |
| 缺失 | | .000 |

（2）

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **初始聚类中心** | | | | | | |
|  | 聚类 | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 花萼长 | 57 | 54 | 45 | 51 | 67 | 77 |
| 花萼宽 | 44 | 30 | 23 | 25 | 25 | 38 |
| 花瓣长 | 15 | 45 | 13 | 30 | 58 | 67 |
| 花瓣宽 | 4 | 15 | 3 | 11 | 18 | 22 |

以初始聚类中心，计算个案的欧式距离值，在单一类别中进行分类后汇总，其中K值为6

# 题3

判别

|  |  |  |
| --- | --- | --- |
| **备注** | | |
| 已创建输出 | | 16-JUL-2023 22:35:50 |
| 注释 | |  |
| 输入 | 数据 | D:\桌面\数模培训\7.16\stomach.txt |
| 活动数据集 | 数据集1 |
| 过滤器 | <无> |
| 权重 | <无> |
| 拆分文件 | <无> |
| 工作数据文件中的行数 | 140 |
| 缺失值处理 | 对缺失的定义 | 在分析阶段，将用户定义的缺失值视为缺失。 |
| 使用的个案数 | 在分析阶段，将使用对于任何预测变量都不具有用户缺失值或系统缺失值的个案。始终排除对于分组变量具有用户缺失值、系统缺失值或超出范围值的个案。 |
| 语法 | | DISCRIMINANT  /GROUPS=stomach\_B(1 2)  /VARIABLES=water\_B purple\_B copper\_B indole\_B sulfo\_B  /ANALYSIS ALL  /OUTFILE=MODEL('D:\桌面\数模培训\7.16\1111.xml')  /SAVE=CLASS PROBS  /PRIORS EQUAL  /STATISTICS=MEAN STDDEV RAW TABLE  /PLOT=COMBINED MAP  /CLASSIFY=NONMISSING POOLED MEANSUB. |
| 资源 | 处理程序时间 | 00:00:00.00 |
| 耗用时间 | 00:00:00.02 |
| 创建或修改的变量 | Dis\_1 | 用于分析 1 的预测组 |
| Dis1\_1 | 用于分析 1 的 1 组中的成员信息概率 |
| Dis2\_1 | 用于分析 1 的 2 组中的成员信息概率 |
| 保存的文件 | 模型信息 | D:\桌面\数模培训\7.16\1111.xml |
| 分类后写入工作文件的未加权个案数 | | 140 |

[数据集1]

|  |
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| **警告** |
| 无法针对单个判别函数生成 COMBINED 图。 |

|  |  |  |  |
| --- | --- | --- | --- |
| **分析个案处理摘要** | | | |
| 未加权个案数 | | 个案数 | 百分比 |
| 有效 | | 140 | 100.0 |
| 排除 | 缺失或超出范围组代码 | 0 | .0 |
| 至少一个缺失判别变量 | 0 | .0 |
| 既包括缺失或超出范围组代码，也包括至少一个缺失判别变量 | 0 | .0 |
| 总计 | 0 | .0 |
| 总计 | | 140 | 100.0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **组统计** | | | | | |
| stomach\_B | | 平均值 | 标准 偏差 | 有效个案数（成列） | |
| 未加权 | 加权 |
| 1 | water\_B | .27660 | .857030 | 94 | 94.000 |
| purple\_B | 119.20213 | 27.807936 | 94 | 94.000 |
| copper\_B | 189.73404 | 51.207815 | 94 | 94.000 |
| indole\_B | .24239 | .145991 | 94 | 94.000 |
| sulfo\_B | .26484 | .203205 | 94 | 94.000 |
| 2 | water\_B | 2.96739 | 1.092409 | 46 | 46.000 |
| purple\_B | 160.69565 | 37.956624 | 46 | 46.000 |
| copper\_B | 231.97826 | 68.265980 | 46 | 46.000 |
| indole\_B | .41554 | .180721 | 46 | 46.000 |
| sulfo\_B | .42804 | .255250 | 46 | 46.000 |
| 总计 | water\_B | 1.16071 | 1.576888 | 140 | 140.000 |
| purple\_B | 132.83571 | 36.964227 | 140 | 140.000 |
| copper\_B | 203.61429 | 60.495387 | 140 | 140.000 |
| indole\_B | .29929 | .177469 | 140 | 140.000 |
| sulfo\_B | .31846 | .233748 | 140 | 140.000 |

分析 1

典则判别函数摘要

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **特征值** | | | | |
| 函数 | 特征值 | 方差百分比 | 累积百分比 | 典型相关性 |
| 1 | 1.960a | 100.0 | 100.0 | .814 |
| a. 在分析中使用了前 1 个典则判别函数。 | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **威尔克 Lambda** | | | | |
| 函数检验 | 威尔克 Lambda | 卡方 | 自由度 | 显著性 |
| 1 | .338 | 147.025 | 5 | .000 |

|  |  |
| --- | --- |
| **标准化典则判别函数系数** | |
|  | 函数 |
| 1 |
| water\_B | .899 |
| purple\_B | .118 |
| copper\_B | -.028 |
| indole\_B | .186 |
| sulfo\_B | .066 |

|  |  |
| --- | --- |
| **结构矩阵** | |
|  | 函数 |
| 1 |
| water\_B | .967 |
| purple\_B | .445 |
| indole\_B | .370 |
| copper\_B | .249 |
| sulfo\_B | .249 |
| 判别变量与标准化典则判别函数之间的汇聚组内相关性  变量按函数内相关性的绝对大小排序。 | |

|  |  |
| --- | --- |
| **典则判别函数系数** | |
|  | 函数 |
| 1 |
| water\_B | .956 |
| purple\_B | .004 |
| copper\_B | .000 |
| indole\_B | 1.175 |
| sulfo\_B | .297 |
| (常量) | -1.954 |
| 未标准化系数 | |

|  |  |
| --- | --- |
| **组质心处的函数** | |
| stomach\_B | 函数 |
| 1 |
| 1 | -.972 |
| 2 | 1.987 |
| 按组平均值进行求值的未标准化典则判别函数 | |

分类统计

|  |  |  |
| --- | --- | --- |
| **分类处理摘要** | | |
| 已处理 | | 140 |
| 排除 | 缺失或超出范围组代码 | 0 |
| 至少一个缺失判别变量 | 0 |
| 已在输出中使用 | | 140 |

|  |  |  |  |
| --- | --- | --- | --- |
| **组的先验概率** | | | |
| stomach\_B | 先验 | 在分析中使用的个案 | |
| 未加权 | 加权 |
| 1 | .500 | 94 | 94.000 |
| 2 | .500 | 46 | 46.000 |
| 总计 | 1.000 | 140 | 140.000 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **分类结果a** | | | | | |
|  |  | stomach\_B | 预测组成员信息 | | 总计 |
|  |  | 1 | 2 |
| 原始 | 计数 | 1 | 88 | 6 | 94 |
| 2 | 5 | 41 | 46 |
| % | 1 | 93.6 | 6.4 | 100.0 |
| 2 | 10.9 | 89.1 | 100.0 |
| a. 正确地对 92.1% 个原始已分组个案进行了分类。 | | | | | |

# 题4

water purple copper indole sulfo 依据题3分类标准判断结果

0.0 100 205 0.370 0.380 1

4.0 150 260 0.240 0.175 2

0.0 160 250 0.150 0.090 1

3.0 150 220 0.260 0.330 2

0.0 130 180 0.250 0.600 1

0.4 135 175 0.220 0.140 1

0.0 135 200 0.290 0.155 1

3.0 240 320 0.600 0.430 2