R商业应用两例

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MANGOSOLUTIONS
data analysis that delivers

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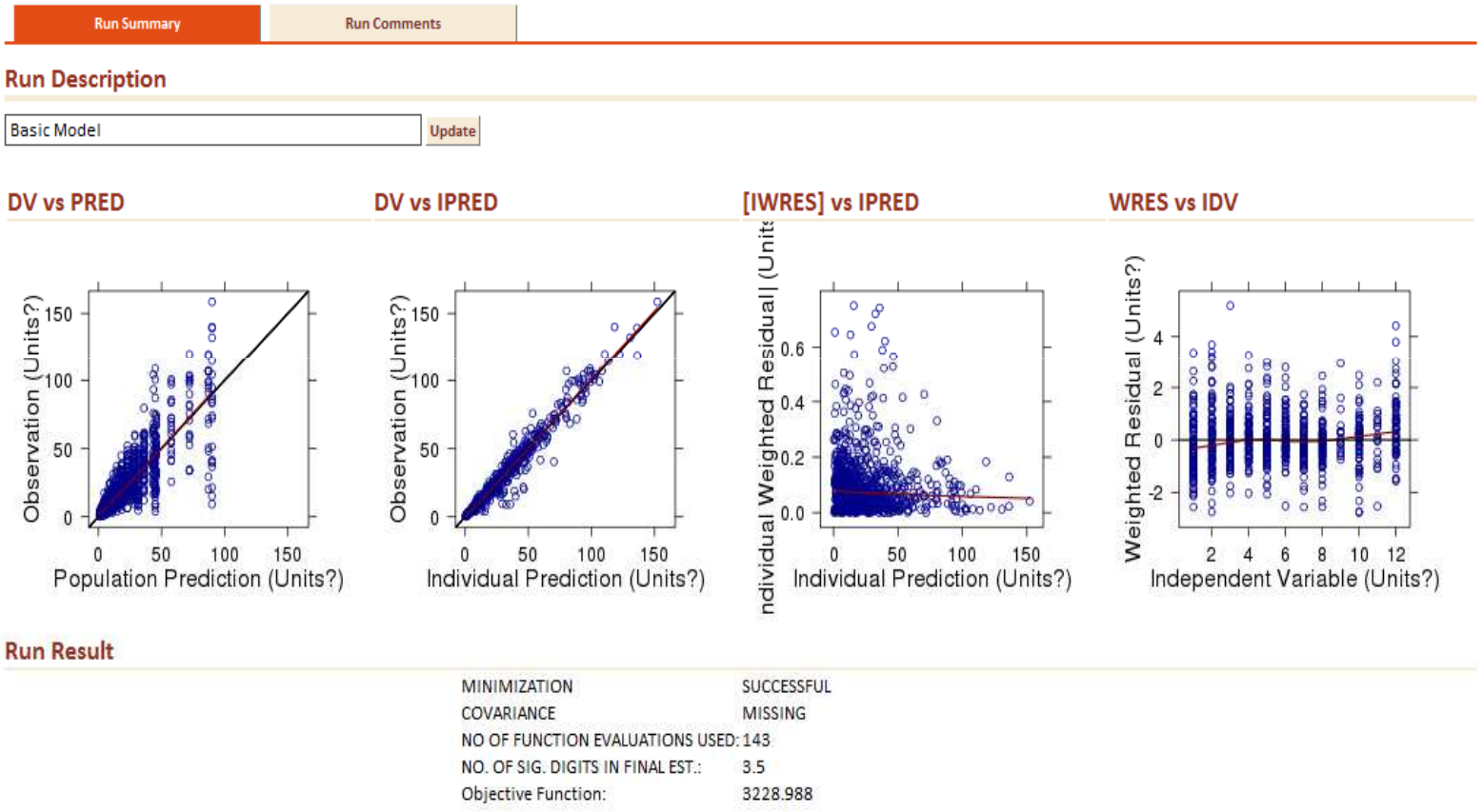
Mango Solutions

- 专业的R语言咨询公司
  - 基于R的解决方案
  - R语言培训
  - R语言的技术支持
  - 数据分析外包
- 行业经验
  - 制药、金融、保险、能源
  - 医学图像分析、农业、食品

Navigator

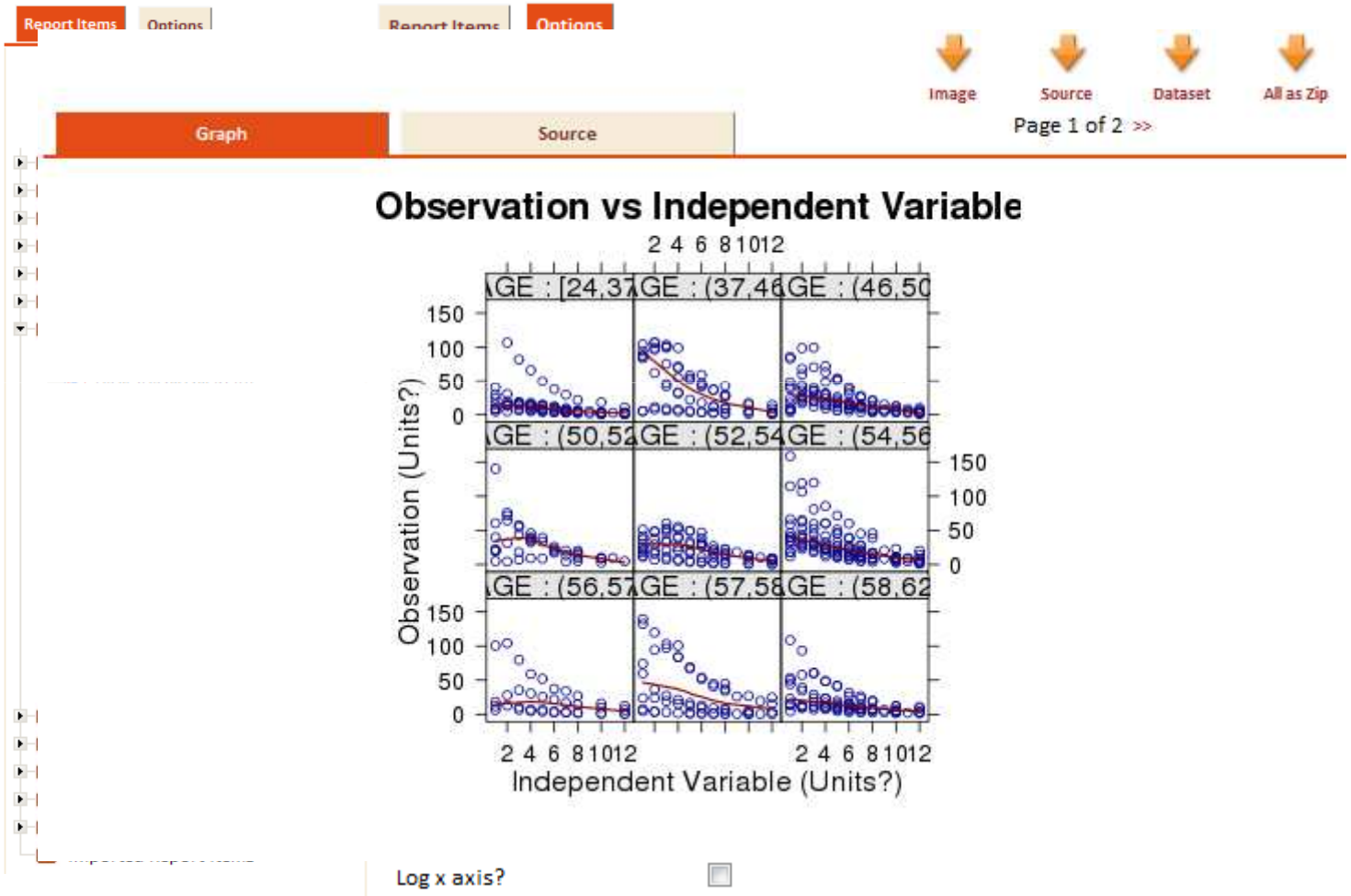
- 基于R语言的定量药理学研究平台
- 使用NONMEM建模
- R语言进行分析
- 生成Word/PDF/RTF报告

Navigator – 主要功能（一）



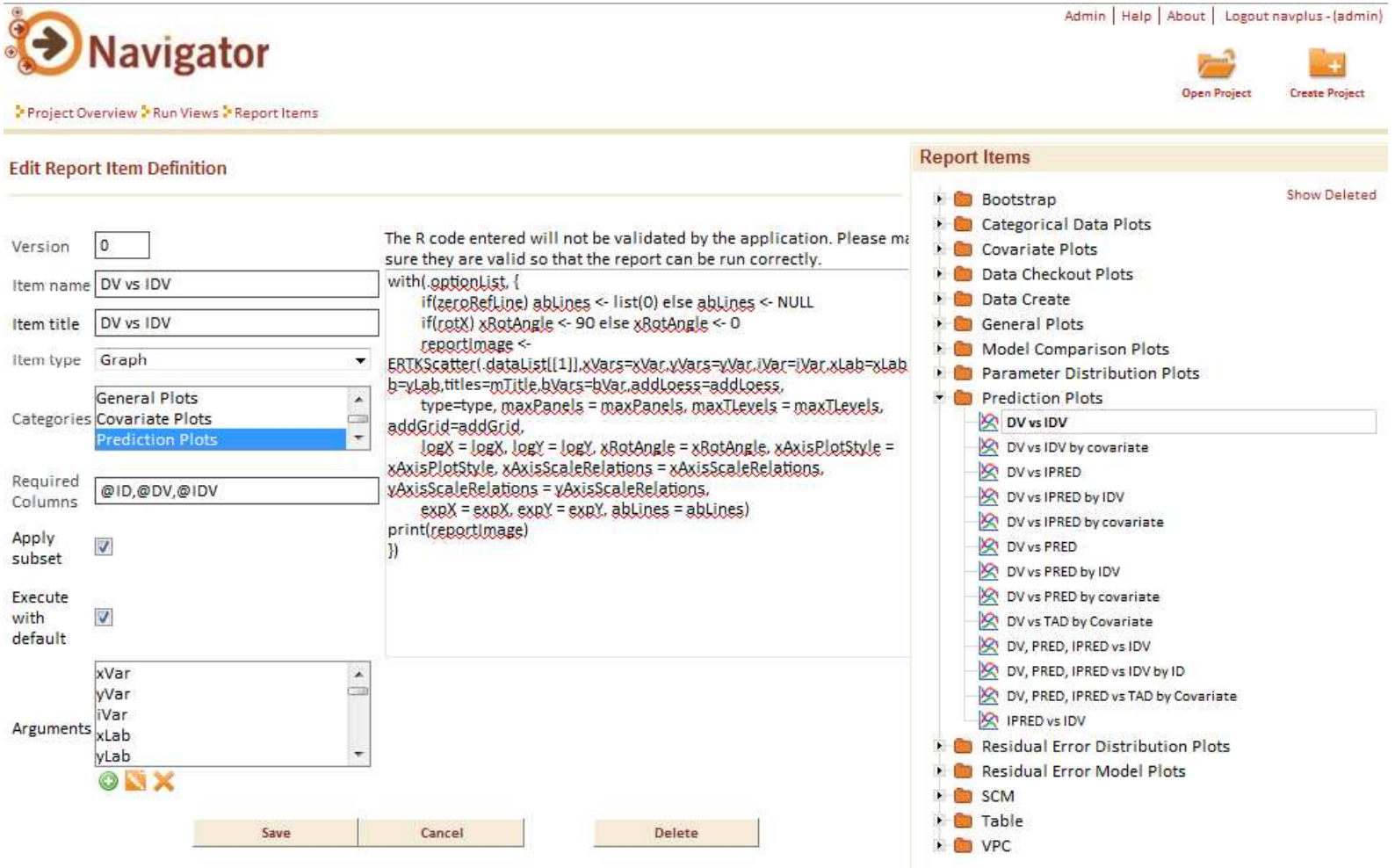
自动生成数据的概览

Navigator – 主要功能（二）



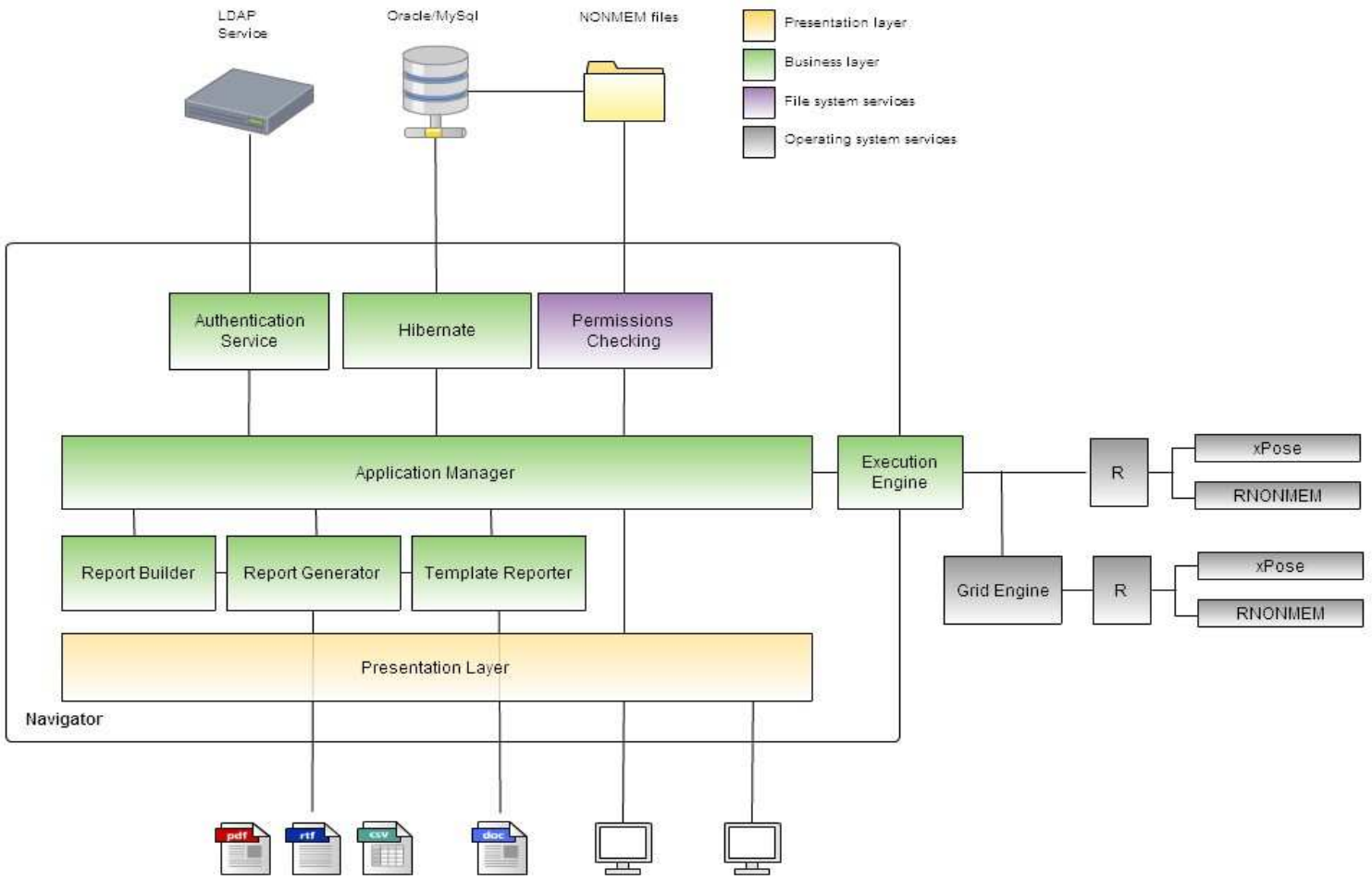
选择并生成分析图形

Navigator – 主要功能（三）



定制分析图形与报告

Navigator – 系统架构



Navigator – R的调用

- 使用Rterm与Rscript进行调用
- 结果通过XML回传
- 文件系统作为中介

Java调用R的其他选择

- JRI
  - 需要配置，调用简单，高度灵活，密集计算需要考虑性能问题
- Rserve
  - 配置简单，高度灵活，缺乏Windows支持，以HTTP方式调用
- Rapache
- 其它自制方案
  - 提供更强的高吞吐量、高性能计算

What is Mango Sensory

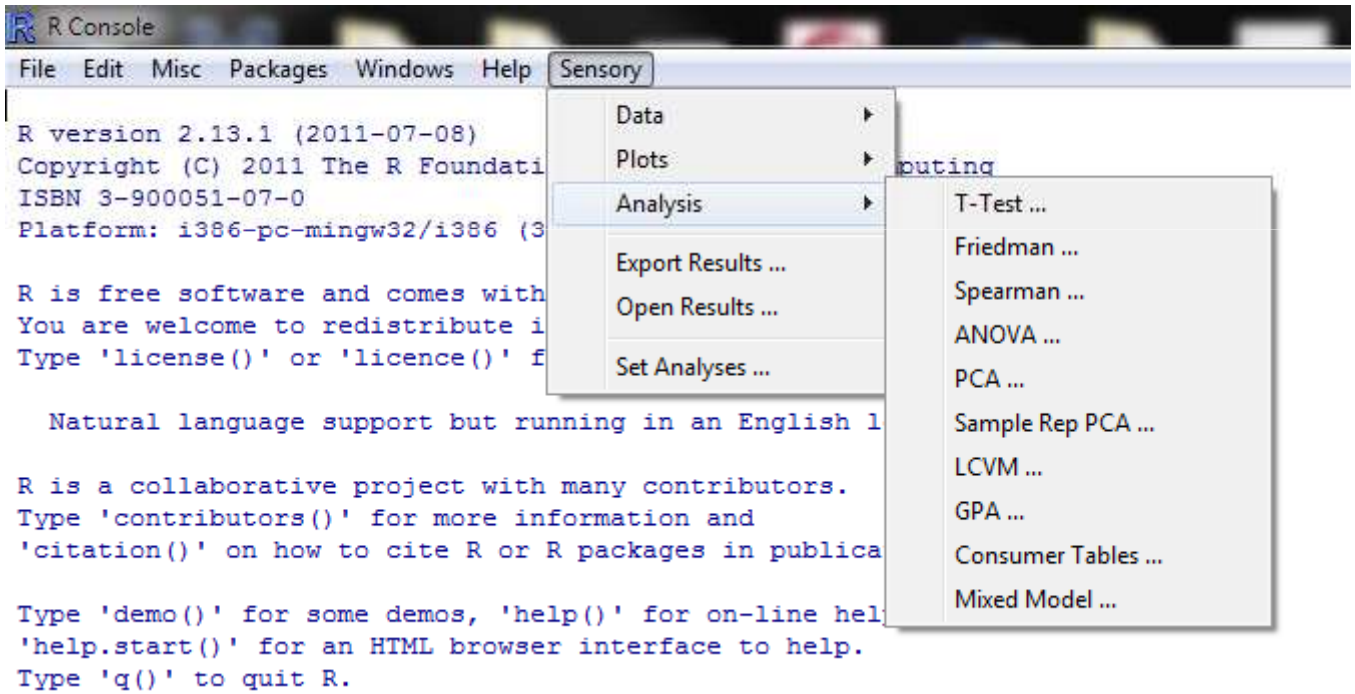
- Sensory – 感官分析
- 感官分析由应用统计分析方法与实验设计组成。消费品经过测试，测试的结果会被逐条记录，随后据此找出有意义的数据，并 做出推论。
- 当前，世界上大多数的食品公司都在感官分析上做出了投资

Components of Mango Sensory

- 数据导入
- 描述统计
- 各种图形: 线图，直方图，雷达图等等
- 分析功能:T检验，Friedman检验，Spearman检验，方差分析，主成分分析，GPA分析
- 结果导出

GUI of Sensory

- 友好的用户界面可以提高分析师的效率

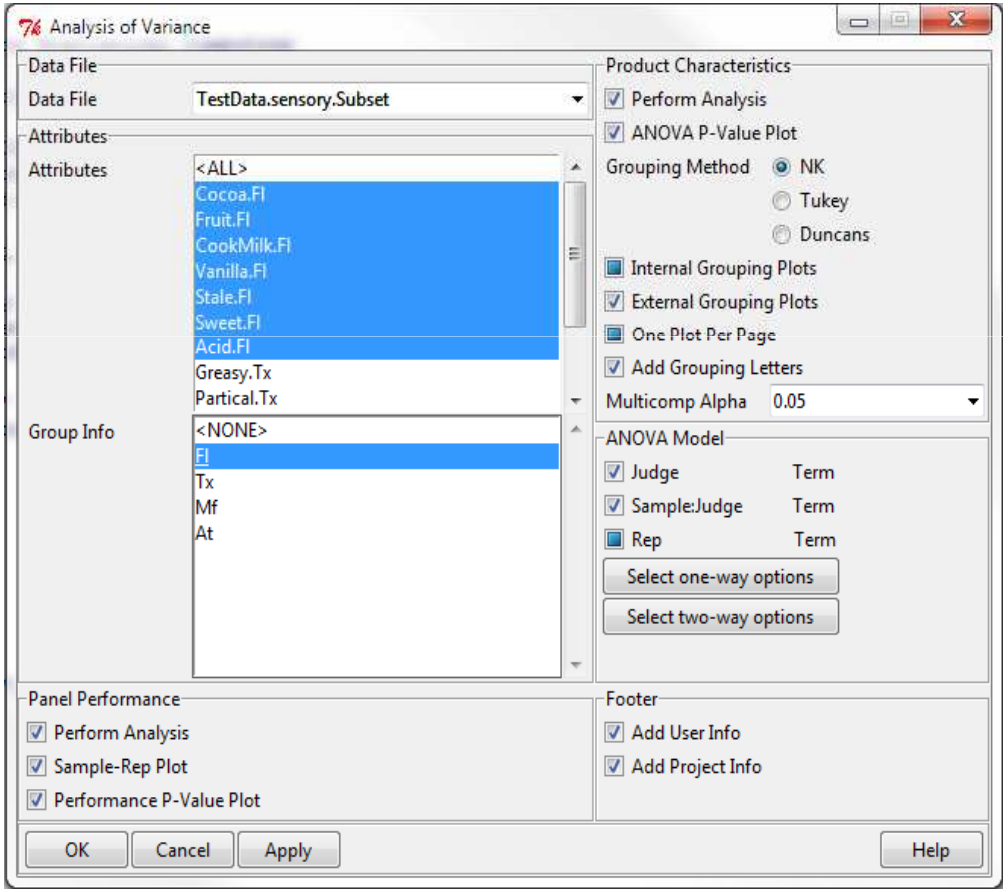


感官数据的形状

TestData.sensory

	row.names	Sample	Judge	Rep	Cocoa.Fl	Fruit.Fl	CookMilk.Fl	Vanilla.Fl	Stale.Fl	Sweet.Fl	Acid.Fl	Greasy.Tx	Partical.Tx	Dense.Tx	Astringent.Mf	Throatburn.At	Bitter.At
1	1	Sample A	1	1	61.000	45.000	0.000	0.000	25.000	22.000	63.000	0.000	0.000	44.000	44.000	64.000	15.000
2	2	Sample A	1	2	49.000	44.000	7.000	0.000	47.000	11.000	62.000	0.000	0.000	49.000	25.000	56.000	37.000
3	3	Sample B	1	1	47.000	10.000	11.000	0.000	0.000	9.000	84.000	0.000	5.000	32.000	63.000	5.000	44.000
4	4	Sample B	1	2	26.000	0.000	0.000	0.000	0.000	4.000	85.000	0.000	66.000	16.000	24.000	4.000	46.000
5	5	Sample C	1	1	65.000	58.000	40.000	1.000	51.000	19.000	49.000	0.000	0.000	52.000	26.000	73.000	38.000
6	6	Sample C	1	2	69.000	54.000	29.000	0.000	60.000	25.000	50.000	0.000	0.000	70.000	35.000	55.000	23.000
7	7	Sample D	1	1	67.000	48.000	30.000	0.000	50.000	18.000	78.000	0.000	0.000	50.000	50.000	44.000	34.000
8	8	Sample D	1	2	71.000	57.000	35.000	0.000	76.000	29.000	43.000	0.000	0.000	56.000	29.000	66.000	20.000
9	9	Sample E	1	1	57.000	35.000	3.000	0.000	26.000	22.000	62.000	0.000	0.000	50.000	26.000	63.000	35.000
10	10	Sample E	1	2	48.000	2.000	2.000	0.000	0.000	7.000	90.000	0.000	15.000	15.000	12.000	48.000	44.000
11	11	Sample F	1	1	64.000	52.000	22.000	0.000	66.000	21.000	49.000	0.000	0.000	67.000	45.000	50.000	27.000
12	12	Sample F	1	2	55.000	51.000	28.000	0.000	73.000	18.000	47.000	0.000	0.000	74.000	50.000	61.000	13.000
13	13	Sample A	2	1	68.000	63.000	17.000	0.000	63.000	26.000	46.000	2.000	0.000	47.000	35.000	43.000	26.000
14	14	Sample A	2	2	63.000	57.000	37.000	33.000	43.000	22.000	33.000	11.000	0.000	42.000	49.000	46.000	41.000
15	15	Sample B	2	1	68.000	67.000	0.000	37.000	4.000	24.000	61.000	4.000	44.000	42.000	76.000	42.000	40.000
16	16	Sample B	2	2	67.000	64.000	9.000	0.000	7.000	59.000	46.000	9.000	0.000	50.000	70.000	42.000	19.000
17	17	Sample C	2	1	71.000	58.000	61.000	23.000	13.000	29.000	35.000	22.000	0.000	52.000	58.000	56.000	53.000
18	18	Sample C	2	2	62.000	59.000	46.000	0.000	41.000	11.000	23.000	0.000	2.000	43.000	44.000	38.000	30.000
19	19	Sample D	2	1	66.000	66.000	26.000	0.000	45.000	25.000	46.000	5.000	0.000	49.000	43.000	47.000	10.000
20	20	Sample D	2	2	72.000	58.000	32.000	21.000	48.000	4.000	57.000	6.000	0.000	54.000	75.000	57.000	56.000
21	21	Sample E	2	1	73.000	74.000	28.000	31.000	46.000	67.000	59.000	10.000	0.000	58.000	72.000	53.000	79.000
22	22	Sample E	2	2	72.000	57.000	46.000	2.000	46.000	30.000	59.000	55.000	0.000	54.000	57.000	48.000	55.000
23	23	Sample F	2	1	82.000	73.000	41.000	45.000	44.000	37.000	45.000	4.000	0.000	74.000	57.000	59.000	79.000
24	24	Sample F	2	2	76.000	55.000	55.000	0.000	71.000	47.000	39.000	63.000	0.000	57.000	46.000	65.000	41.000
25	25	Sample A	3	1	69.000	35.000	29.000	0.000	42.000	18.000	63.000	31.000	1.000	46.000	71.000	34.000	40.000
26	26	Sample A	3	2	73.000	71.000	12.000	17.000	53.000	52.000	34.000	22.000	0.000	65.000	32.000	65.000	15.000
27	27	Sample B	3	1	54.000	47.000	26.000	0.000	28.000	48.000	26.000	48.000	3.000	70.000	52.000	44.000	29.000

方差分析


Analysis of Variance
Data File
Data File
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Attributes
Attributes
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Fruit.FI
CookMilk.FI
Vanilla.FI
Stale.FI
Sweet.FI
Acid.FI
Greasy.Tx
Partical.Tx
Group Info
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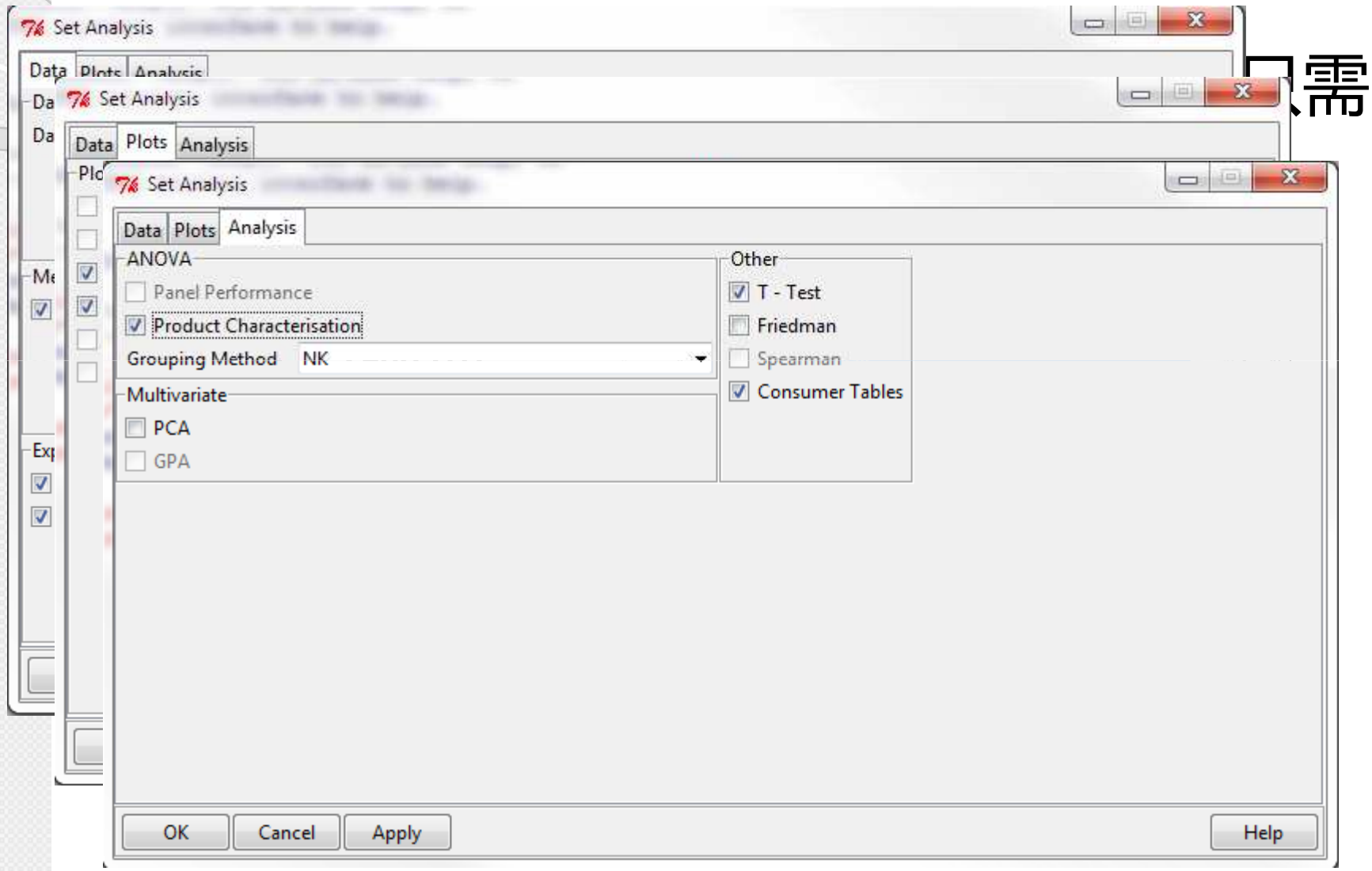
FI
Tx
Mf
At
Product Characteristics
Perform Analysis
ANOVA P-Value Plot
Grouping Method
NK
Tukey
Duncans
Internal Grouping Plots
External Grouping Plots
One Plot Per Page
Add Grouping Letters
Multicomp Alpha
0.05
ANOVA Model
Judge
Term
Sample:Judge
Term
Rep
Term
Select one-way options
Select two-way options
Panel Performance
Perform Analysis
Sample-Rep Plot
Performance P-Value Plot
Footer
Add User Info
Add Project Info
OK
Cancel
Apply
Help

批量分析


Set Analysis
Data
Plots
Analysis
ANOVA
Panel Performance
Product Characterisation
Grouping Method
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Multivariate
PCA
GPA
Other
T - Test
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Spearman
Consumer Tables
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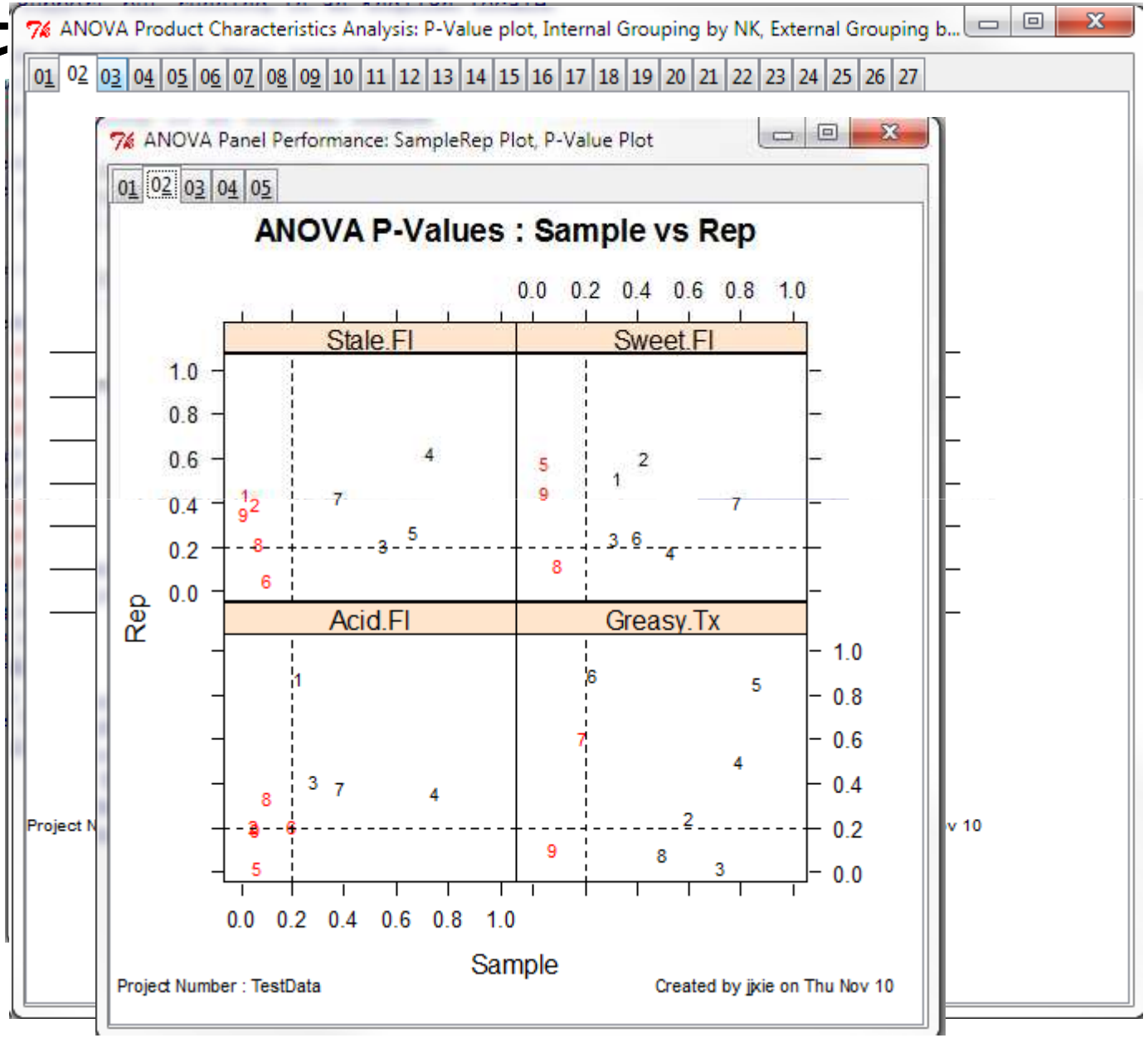
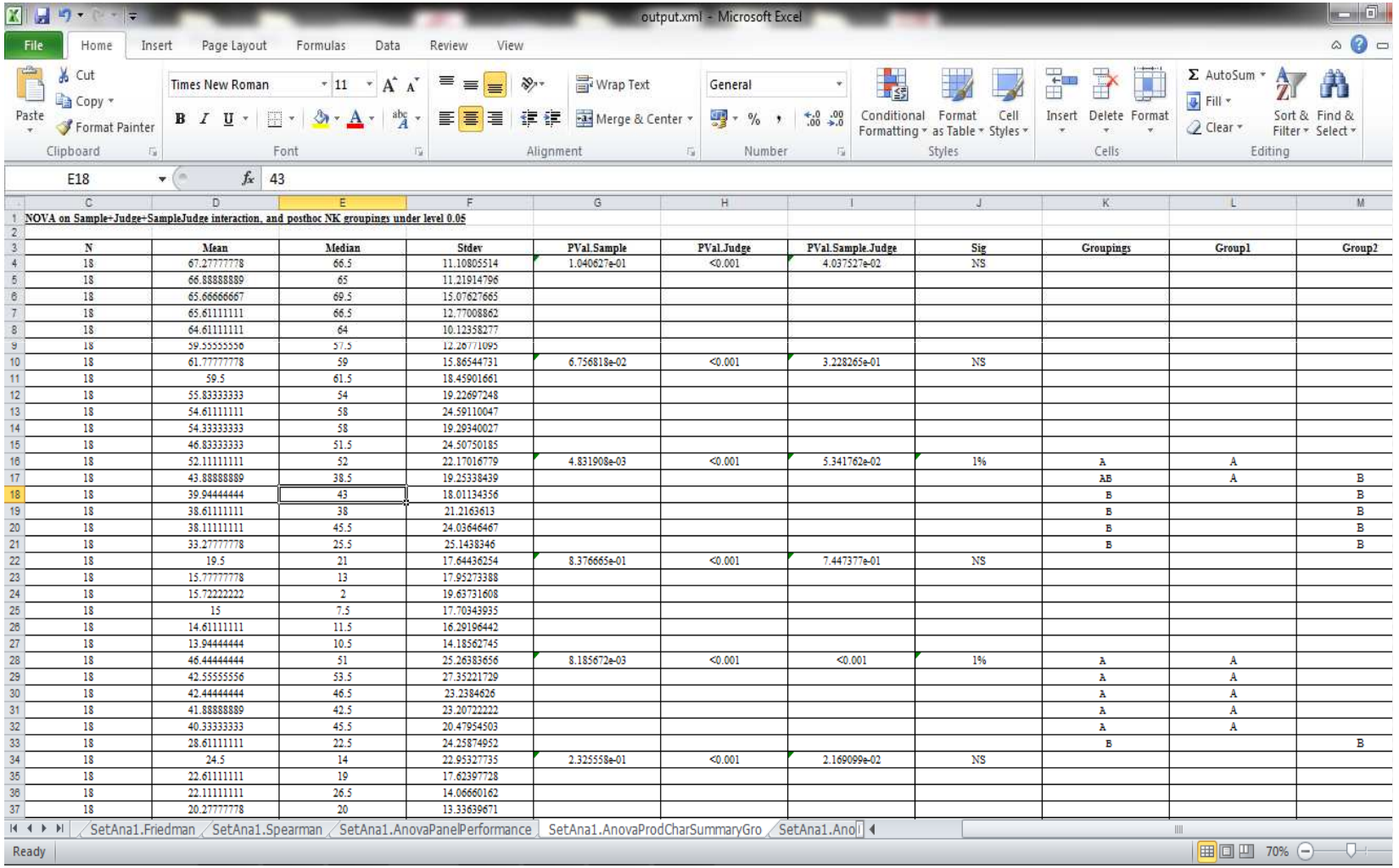
Cancel
Apply
Help


ANOVA Product Characteristics Analysis: P-Value plot, Internal Grouping by NK, External Grouping b...
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ANOVA Panel Performance: SampleRep Plot, P-Value Plot
01 02 03 04 05
ANOVA P-Values : Sample vs Rep
Stale.Fl
Sweet.Fl
Acid.Fl
Greasy.Tx
Rep
Sample
0.0 0.2 0.4 0.6 0.8 1.0
Project Number : TestData
Created by jjkie on Thu Nov 10

导出到Excel的结果



谢谢！

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