Clustering Example #2

The analysis involved data from 63 undergraduates who completed the Rape Myth Questionnaire. Clustering was used to examine whether there were different "subsets" of persons, with respect to endorsements of these myths.

The analysis used the raw scores, because all scores were responses on a 7-point scale.

Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	33	52	1.000	0	0	2
2	30	33	1.500	0	1	3
3	9	30	2.333	0	2	5
55	1	27	68.370	53	0	56
56	1	29	69.830	55	45	59
57	13	14	71.750	0	54	58
58	12	13	75.800	52	57	59
59	1	12	83.558	56	58	61
60	17	63	92.000	0	0	62
61	1	11	107.633	59	0	62
62	1	17	168.885	61	60	0

Large "Jumps" begin to show up around Stage 57.

Frequency analyses for several of the stages show a combination of a large group, some possibly interesting smaller groups and some "strays"

Average Linkage (Between Groups)

		Frequency	Percent
Valid	1	47	74.6
	2	1	1.6
	3	6	9.5
	4	1	1.6
	5	4	6.3
	6	1	1.6
	7	2	3.2
	8	1	1.6
	Total	63	100.0

Average Linkage (Between Groups)

		Frequency	Percent
Valid	1	49	77.8
	2	1	1.6
	3	6	9.5
	4	1	1.6
	5	4	6.3
	6	1	1.6
	7	1	1.6
	Total	63	100.0

Average Linkage (Between Groups)

		Frequency	Percent
Valid	1	49	77.8
	2	1	1.6
	3	6	9.5
	4	5	7.9
	5	1	1.6
	6	1	1.6
	Total	63	100.0

Average Linkage (Between Groups)

		Frequency	Percent
Valid	1	49	77.8
	2	1	1.6
	3	11	17.5
	4	1	1.6
	5	1	1.6
	Total	63	100.0

Average Linkage (Between Groups)

		Frequency	Percent
Valid	1	60	95.2
	2	1	1.6
	3	1	1.6
	4	1	1.6
	Total	63	100.0

Average Linkage (Between Groups)

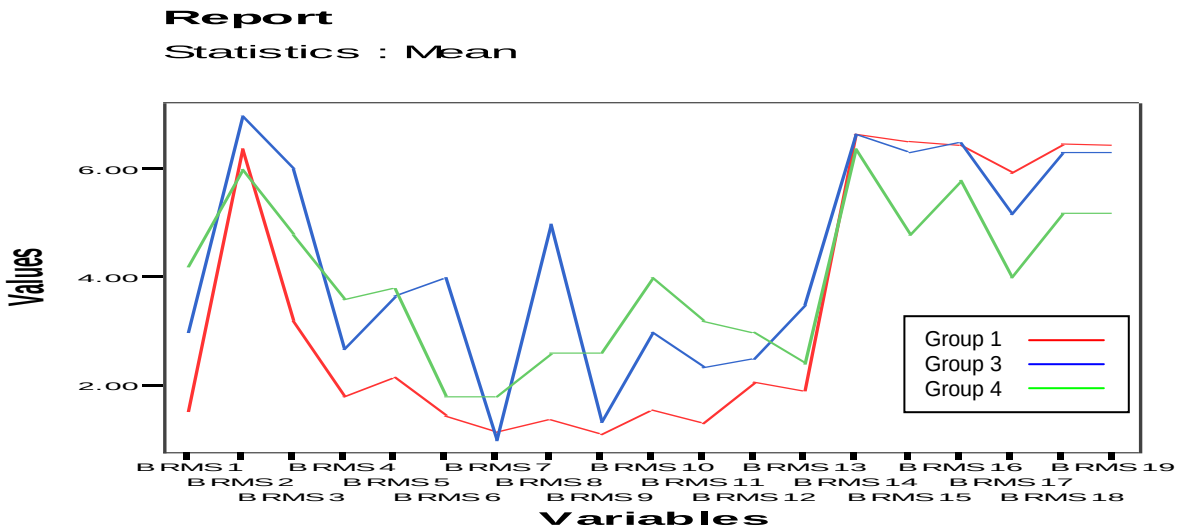
		Frequency	Percent
Valid	1	60	95.2
	2	1	1.6
	3	2	3.2
	Total	63	100.0

The decision seems to be between the 5- and the 6-cluster solutions.

- Both include the same large group of 49
- Both include the same three "strays"
- The question seems to be whether the single group of 11 or the two smaller groups of 5 & 6 are "more interesting"

True that groups of 5 & 6 may be a bit small to define a meaningful subpopulation, but they do represent nearly 8% & 10% of the sample, respectively??!

The more different the profiles of these two groups, the more likely we are to want to use the larger number of clusters.



The large group shows the response profile for 78% of the group. We might examine it carefully to describe that group's attitudes.

The two small groups seem to show interestingly different endorsement profiles – both generally endorse the negative myths more than the larger group, but with somewhat different response profiles.

An additional reason to keep these two smaller groups separate was revealed when we looked at the relationship between cluster membership and respondent gender.

gender of participant * Average Linkage (Between Groups) Crosstabulation

Count

		Average Linkage (Between Groups)						
		1	2	3	4	5	6	Total
gender of participant	Male	10	1		5		1	17
	Female	39		6		1		46
Total		49	1	6	5	1	1	63

Notice that Cluster 3 is all females and Cluster 4 is all males !!!

BMRS Items

1. A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex.
2. Any female can get raped.
3. One reason that women falsely report a rape is that they frequently have a need to call attention to themselves.
4. Any healthy woman can successfully resist a rapist if she really wants to.
5. When women go around braless or wearing short skirts or tight tops, they are just asking for trouble.
6. Women who get raped while hitchhiking get what they deserve.
7. A woman who is stuckup and thinks she is too good to talk to guys on the street deserves to be taught a lesson
8. Many women have an unconscious wish to be raped, and may then unconsciously set up a situation in which they are likely to be attacked.
9. If a woman gets drunk at a party and has intercourse with a man she's just met there, she should be considered "fair game" to other males at the party who want to have sex with her too, whether or not she wants to.
10. In the majority of rapes, the victim is promiscuous or has a bad reputation.
11. If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her.
12. What percentage of women who report a rape would you say are lying because they are angry and want to get back at the accused man?
13. What percentage of reported rapes would you guess were merely invented by women who discovered they were pregnant and wanted to protect their own reputation?
14. A person comes to you and claims they were raped. How likely would you be to believe their statement if the person were your best friend?
15. A person comes to you and claims they were raped. How likely would you be to believe their statement if the person were an Indian woman?
16. A person comes to you and claims they were raped. How likely would you be to believe the statement if they were a neighborhood woman?
17. A person comes to you and claims they were raped. How likely would you be to believe their statement if the person were a young boy?
18. A person comes to you and claims they were raped. How likely would you be to believe their statement if the person were a black woman?
19. A person comes to you and claims they were raped. How likely would you be to believe their statement if the person were a white woman?