

A busy city street scene with traffic, pedestrians, and various signs. The street is filled with cars, a bus, and a van. Pedestrians are walking on the sidewalks. Signs for 'SPEED LIMIT 30', 'NO STOPPING', 'PARKING FOR', 'CAPLAN GLASS', 'MTA', and 'HANOVER' are visible. The background shows buildings and trees.

Perceptions of the Environment & Physical Activity: Gender Differences Among African American Adolescents

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Objectives

1. To create a conceptual map depicting urban African American adolescents' perceptions of how the environment influences their physical activity
2. To identify physical activity promotion strategies

Why Ask African American Adolescents?

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- High rates of obesity and low levels of physical activity
- Research on this population is limited
- Experience their environment differently

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Why Ask African American Adolescents?

- High rates of obesity and low levels of physical activity
- Research on this population is limited
- Experience their environment differently

Asking adolescents helps us to...

- Identify environmental factors that are relevant to this population

Participants

- 9th through 12th graders from two magnet high schools in Baltimore, Maryland
- Enrolled in the Baltimore Active Living Teens Study
- Eligibility criteria: African American



Methods

Concept Mapping →

- Participatory research methodology
- Uses qualitative and non-parametric statistical methods
- Identifies how different ideas cluster together

Methods

Concept Mapping

Generation



- Brainstormed on a focal question: *What things in the environment, both good and bad, might influence physical activity among adolescents?*
- Defined the environment
- 3 activities, 23 participants
- Generated 253 items
- Condensed to 71 items, 6 items added

Methods

Concept Mapping

Generation



Structuring



- Sorted the 77 items into piles that are similar to each other
- Rated their relative importance to physical activity using a 5 point scale
- 50 participants; 23 young men, 27 young women

Methods

Concept Mapping

Generation



Structuring

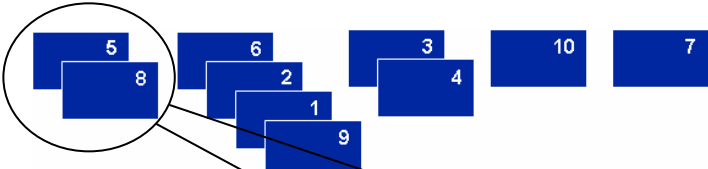


Data Analysis



- Multidimensional scaling
- Hierarchical cluster analysis
- Computation of average importance ratings

Multidimensional Scaling



Sort for one participant

	1	2	3	4	5	6	7	8	9	10
1	1	1	0	0	0	1	0	0	1	0
2	1	1	0	0	0	1	0	0	1	0
3	0	0	1	1	0	0	0	0	0	0
4	0	0	1	1	0	0	0	0	0	0
5	0	0	0	0	1	0	0	1	0	0
6	1	1	0	0	0	1	0	0	1	0
7	0	0	0	0	0	0	1	0	0	0
8	0	0	0	0	1	0	0	1	0	0
9	1	1	0	0	0	1	0	0	1	0
10	0	0	0	0	0	0	0	0	0	1

Individual
similarity matrix

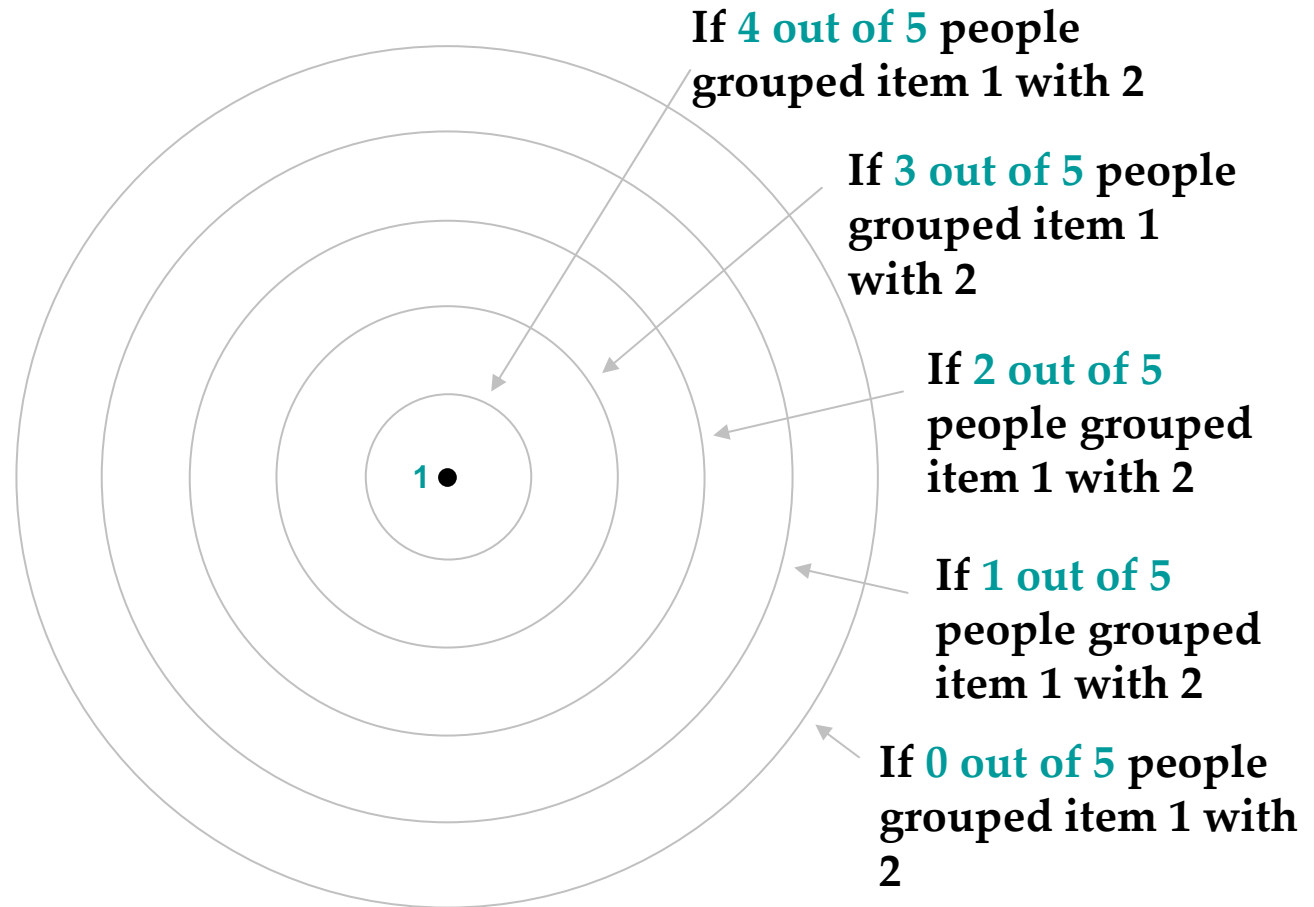
Aggregate similarity
matrix

			1	0	0	1	1	0	0	0	0	0	0	0	0
		1	0	0	0	1	0	0	0	0	0	0	1	0	0
	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0
1	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0
1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0
5	1	2	4	0	1	1	3	1	0	0	0	0	0	0	0
1	5	0	0	0	1	0	0	2	0	0	0	0	0	0	0
2	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	3	5	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	5	0	0	2	0	0	0	0	0	0	1
1	1	0	0	0	5	0	0	4	0	0	0	0	0	0	1
1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	1
3	0	0	0	2	0	0	5	0	0	0	0	0	0	0	1
1	2	0	0	0	4	0	0	5	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	1

Multidimensional Scaling

Similarity Matrix

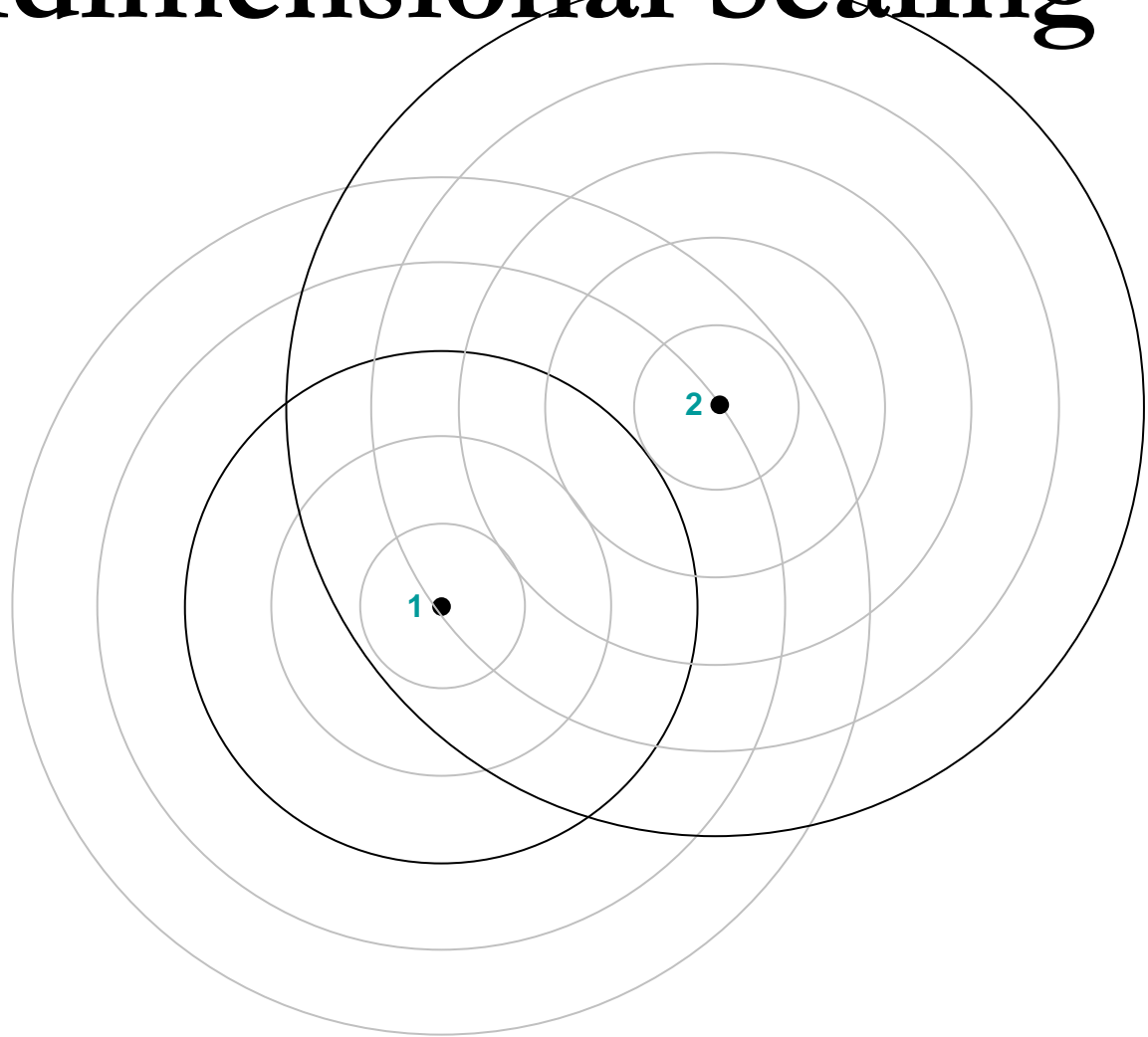
	1	2	3
1	5	1	2
2	1	5	0
3	2	0	5



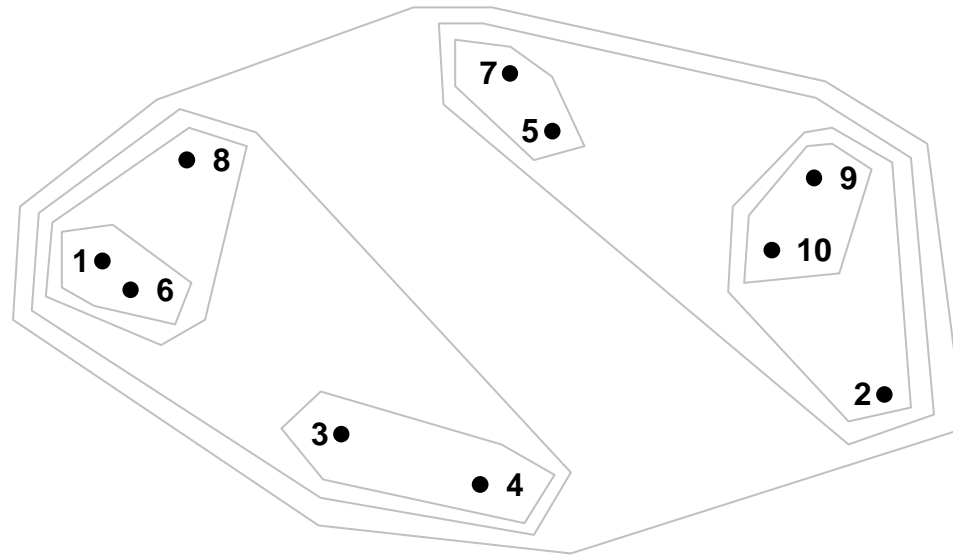
Multidimensional Scaling

Similarity Matrix

	1	2	3
1	5	1	2
2	1	5	0
3	2	0	5

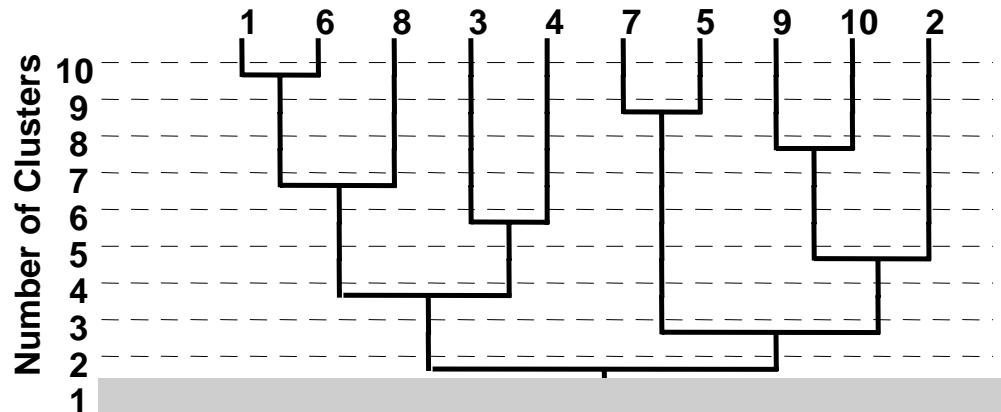


Hierarchical Cluster Analysis



Merge Points Merged

- 1 1 + 6
- 2 5 + 7
- 3 9 + 10
- 4 (1 + 6) + 8
- 5 3 + 4
- 6 2 + (9 + 10)
- 7 (((1 + 6) + 8)) + (3 + 4)
- 8 (5 + 7) + ((2 + (9 + 10)))
- 9 (((((1 + 6) + 8)) + (3 + 4))) +
(5 + 7) + ((2 + (9 + 10)))



Methods

Concept Mapping

Generation



Structuring



Data Analysis



Interpretation



- Identified the appropriate number of clusters
- Named the clusters
- 3 activities, 16 participants
- 1 final map created

Methods

Concept Mapping

Generation



Structuring



Data Analysis



Interpretation



Utilization



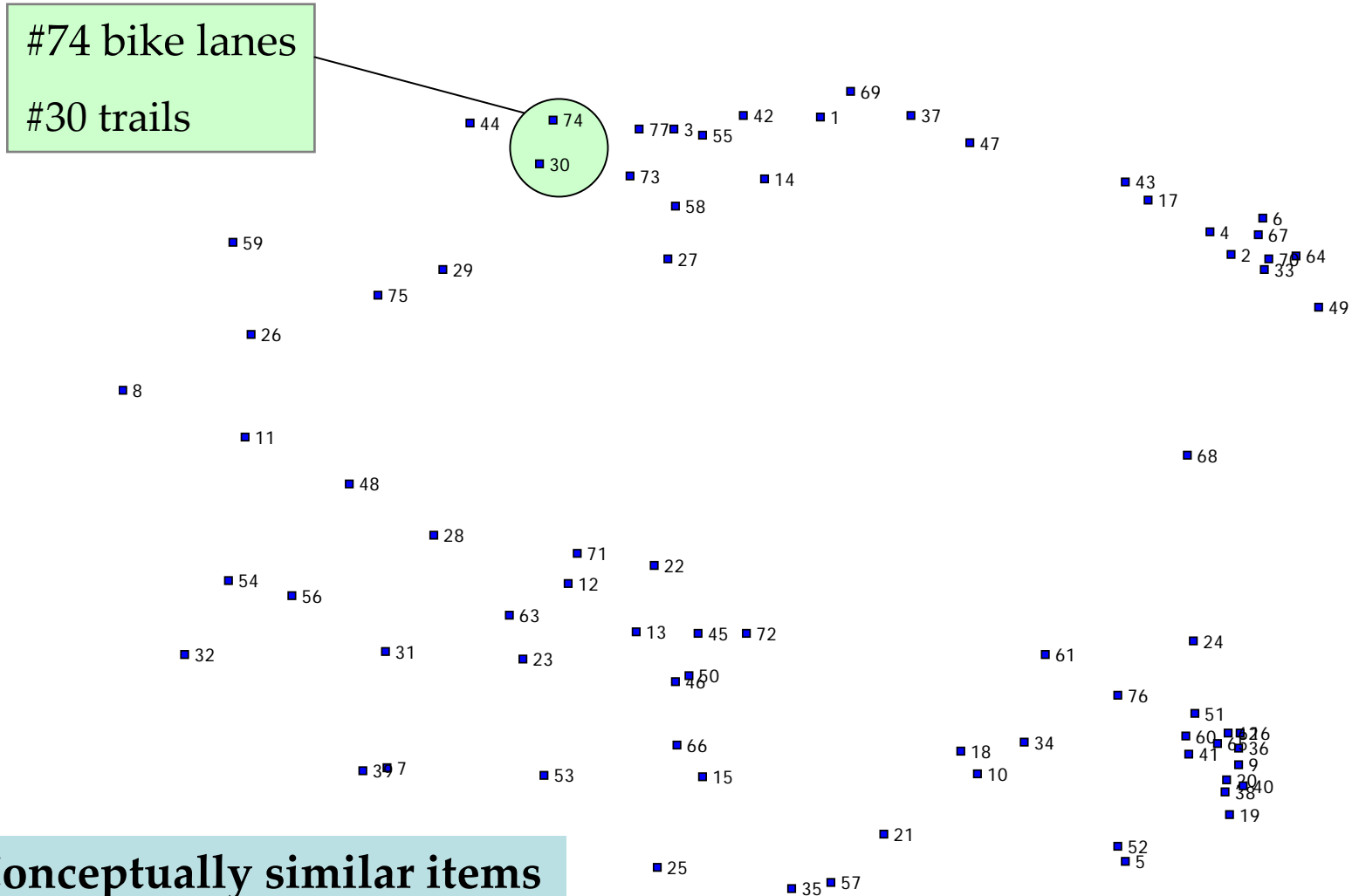
- Discussed findings to determine how they can be applied: *Based on these maps, what do you think should be done to increase physical activity in adolescents?*
- 3 activities, 16 participants
- Generated 65 ideas

RESULTS: Point Map



Conceptually similar items
are more proximal to each
other

RESULTS: Point Map



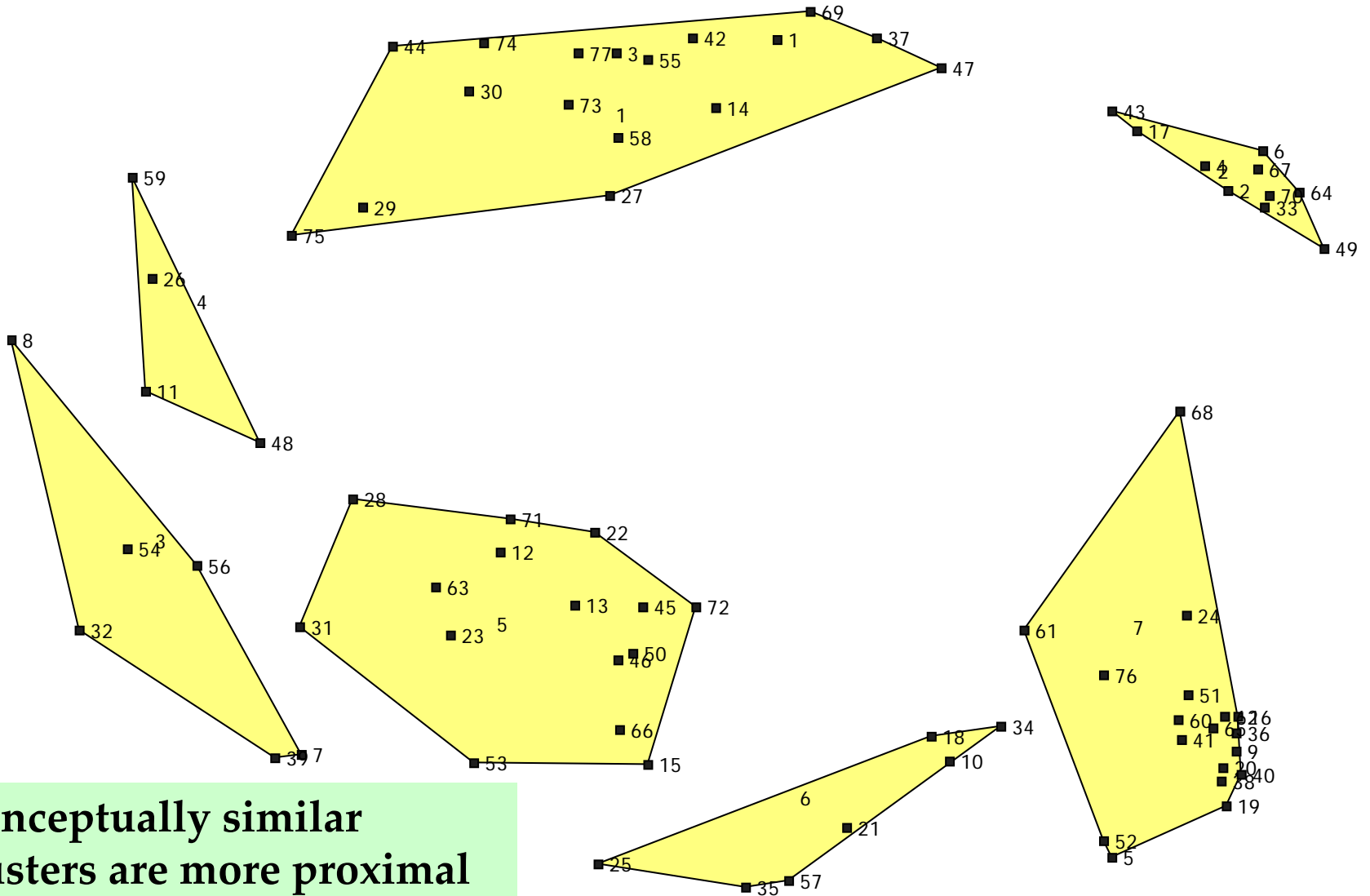
RESULTS: Point Map



Conceptually similar items are more proximal to each other

#52 safety
#5 crime

RESULTS: Cluster Map

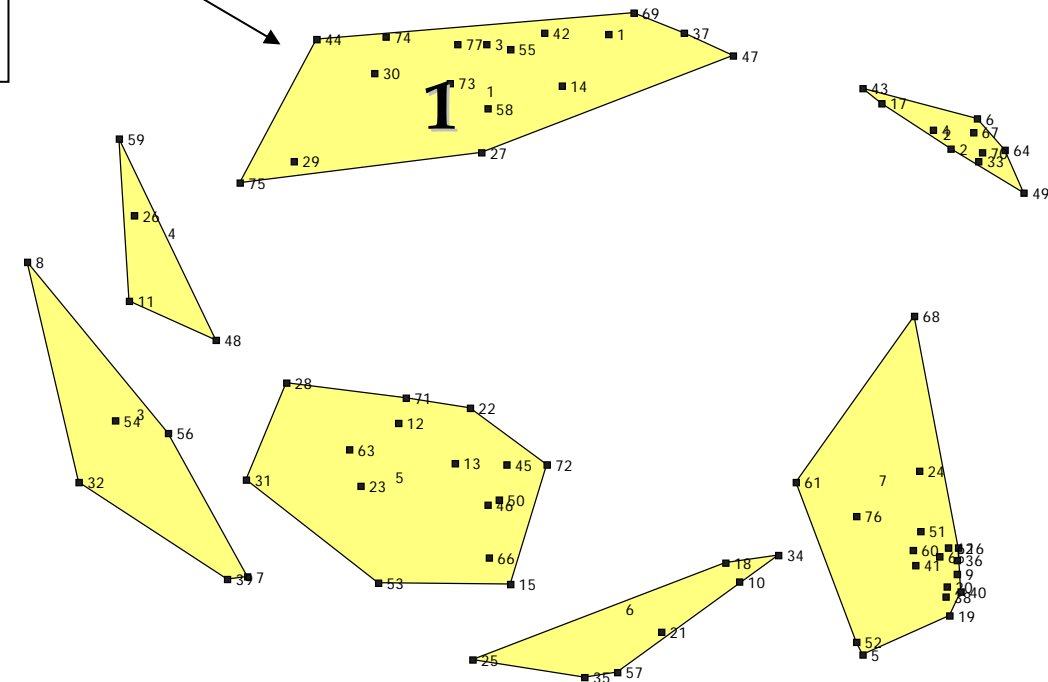


Conceptually similar clusters are more proximal to each other

RESULTS: Cluster Map

“Places for Physical Activity”

1. Places for physical activity (e.g. recreation centers, basketball courts)
 2. Physical activity or sports programs outside of school
 3. Fields in the neighborhood
- Etc...

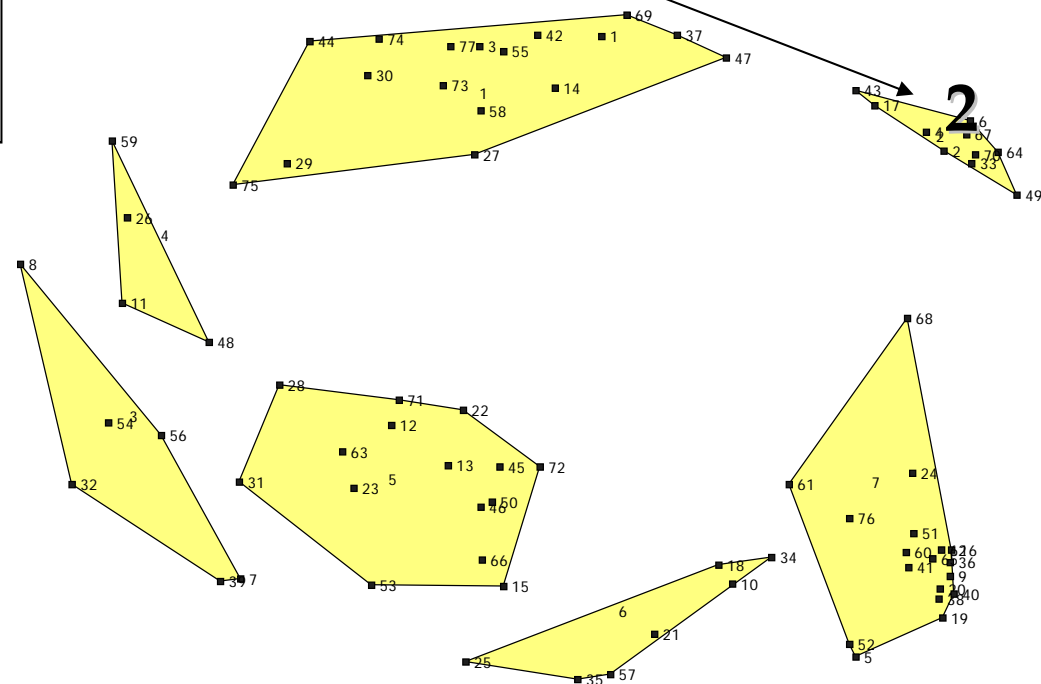


RESULTS: Cluster Map

“Encouraging & Supportive People”

1. Friends you can be physically active with
2. Neighborhood teams
3. Good supervision at facilities
4. Siblings encouraging you to be active

Etc...

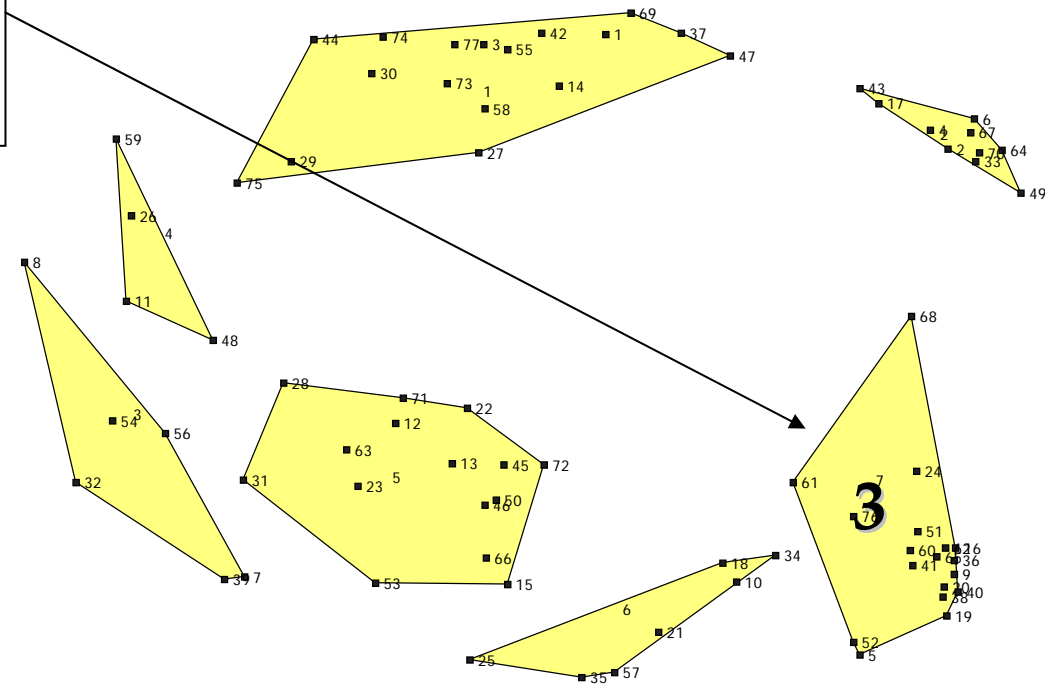


RESULTS: Cluster Map

“Negative Social Influences”

1. Crime
2. Violence
3. Drugs and drug dealers
4. Sexual offenders
5. Gangs
6. Police/adults harassing groups of teenagers

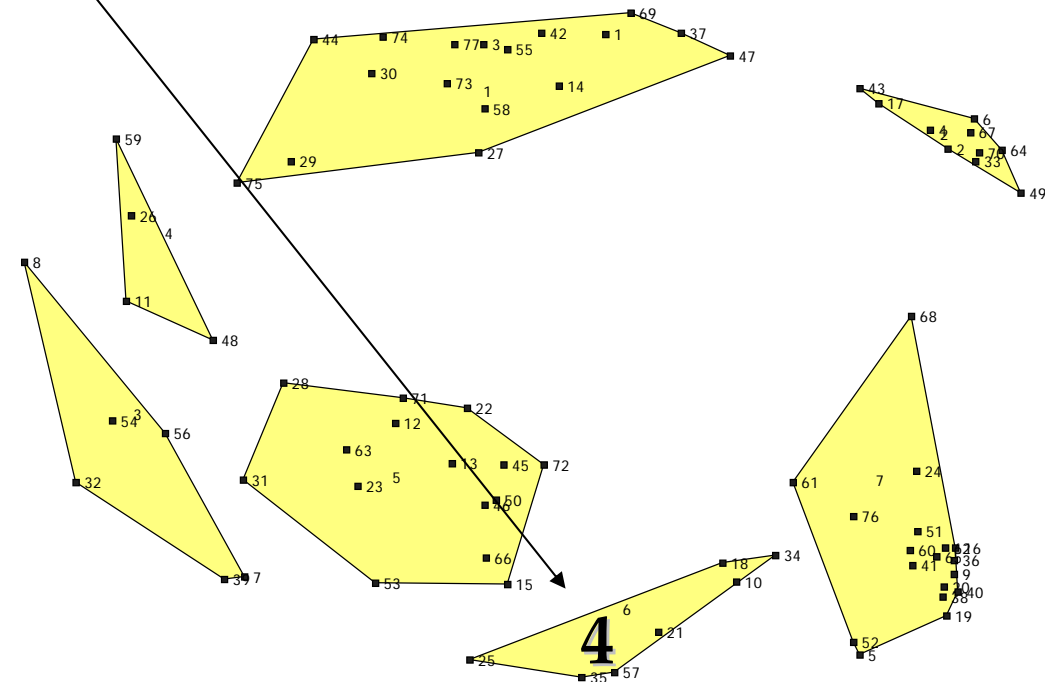
Etc...



RESULTS: Cluster Map

“Parental Control”

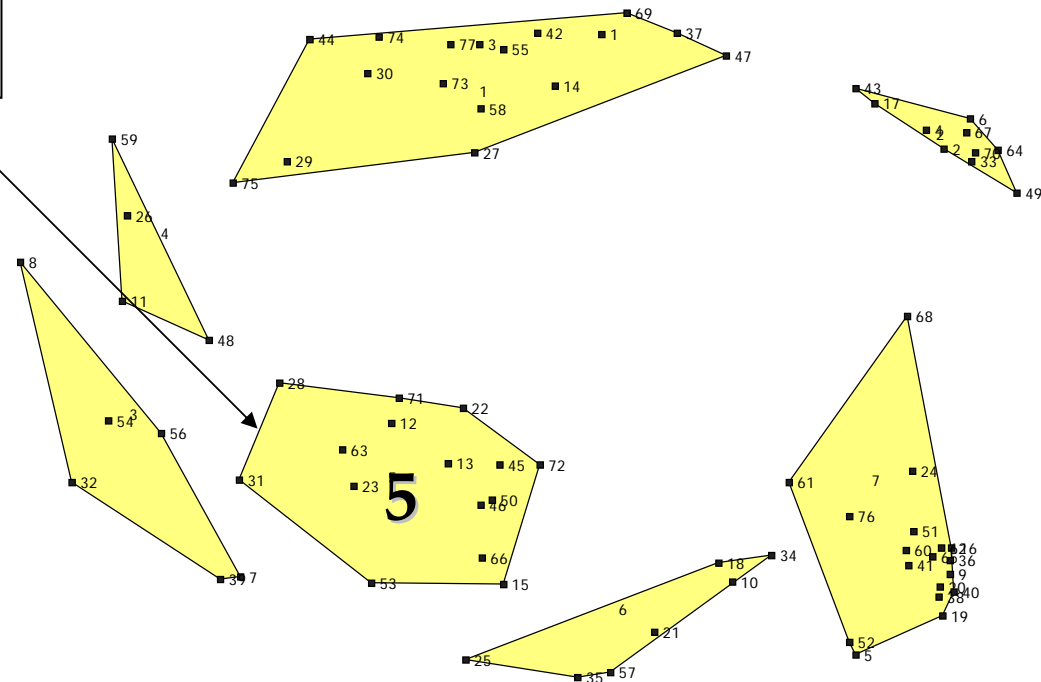
1. Siblings (taking care of them)
 2. Curfew
 3. Parents that won't let you go outside if it's unsafe
- Etc.



RESULTS: Cluster Map

“Negative Environmental Influences”

1. Weather
 2. Unsafe facilities for physical activity
 3. Dark outside when you get home from school
- Etc...

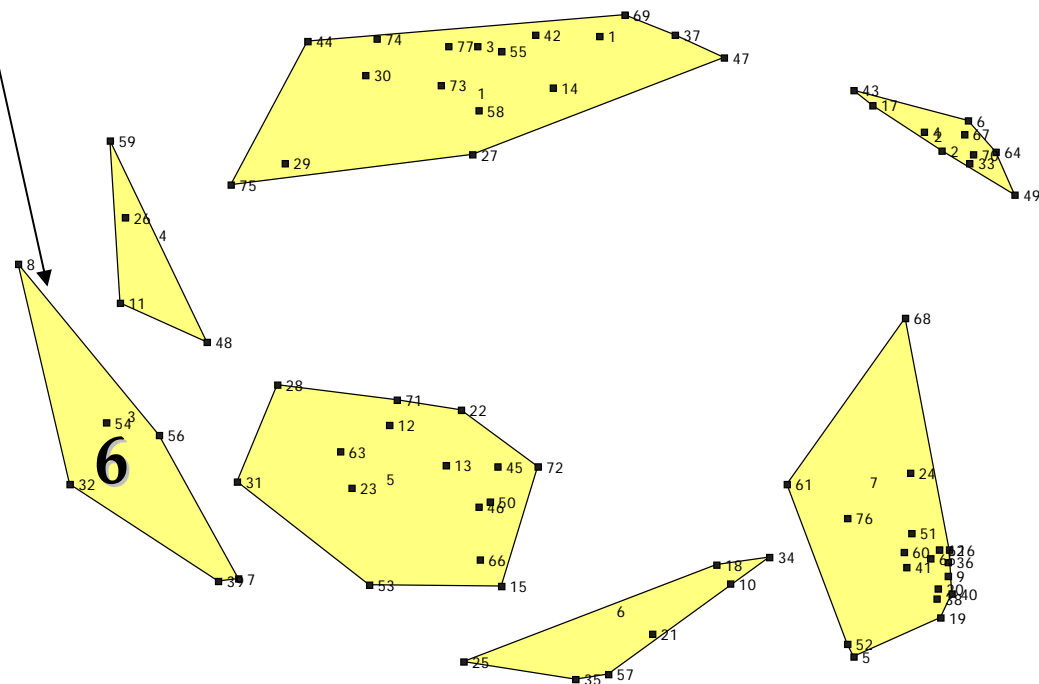


RESULTS: Cluster Map

“Transportation & Technology Issues”

1. Traffic/busy streets
2. Inefficient transportation (e.g. bus)
3. Access to transportation (e.g. car, bus)

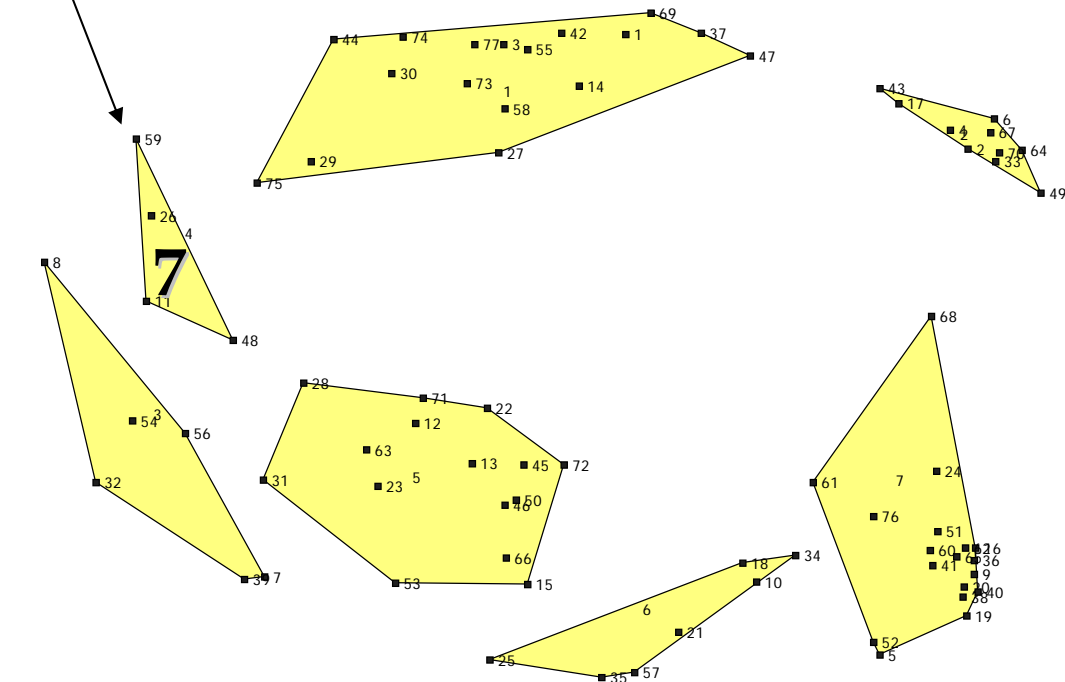
Etc...



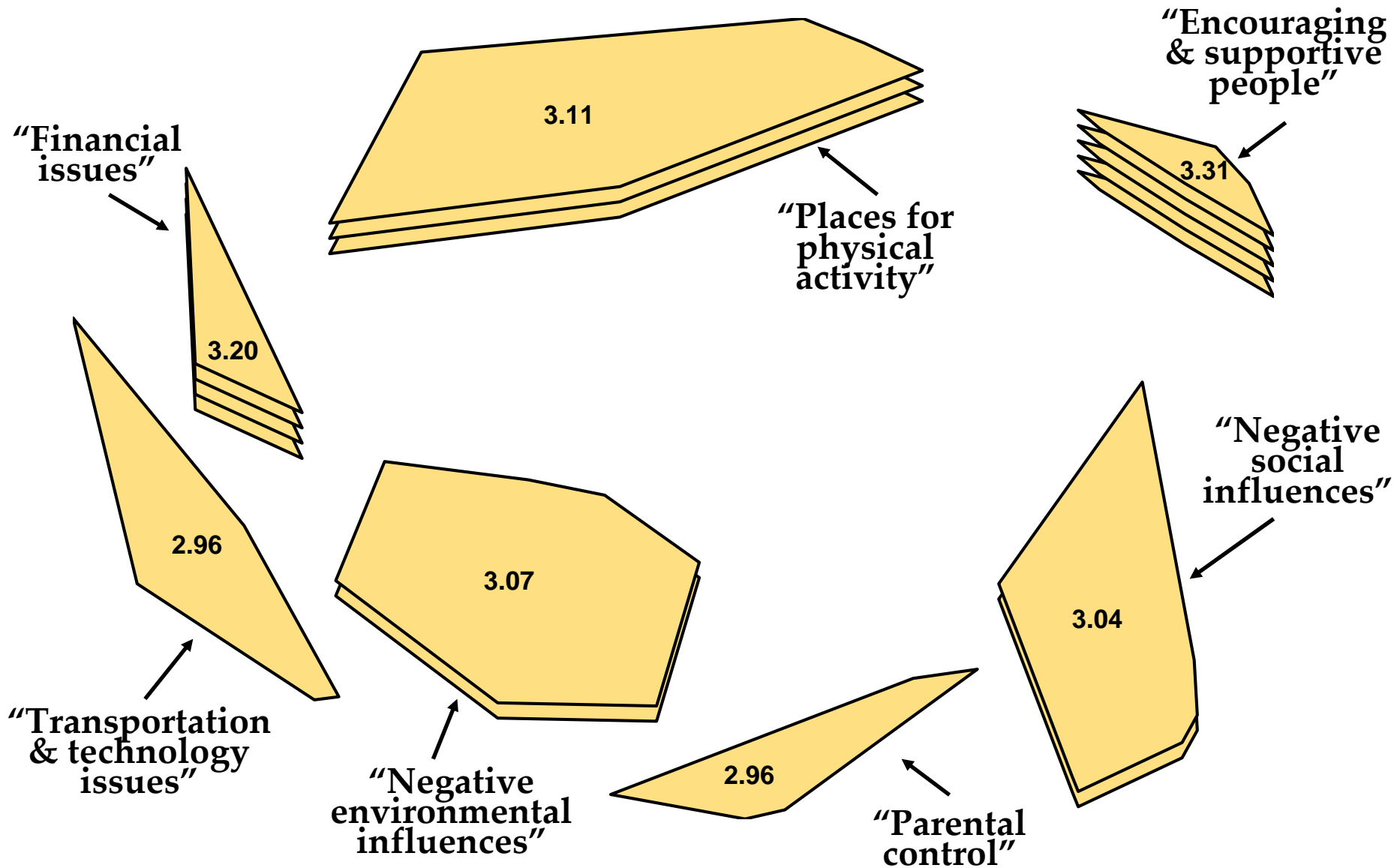
RESULTS: Cluster Map

“Financial Issues”

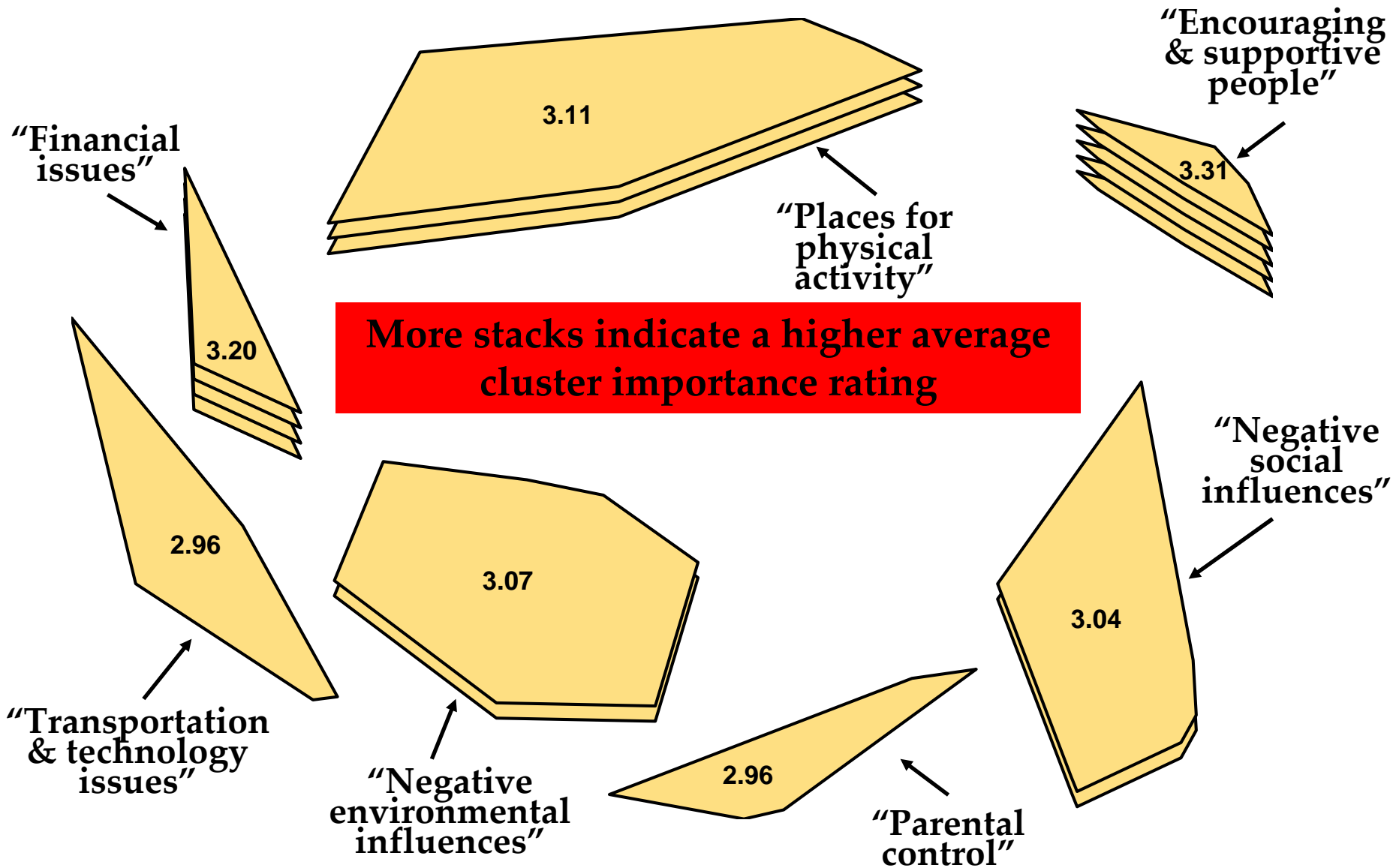
1. Money to go places
 2. Cost of physical activity/sports programs
- Etc...



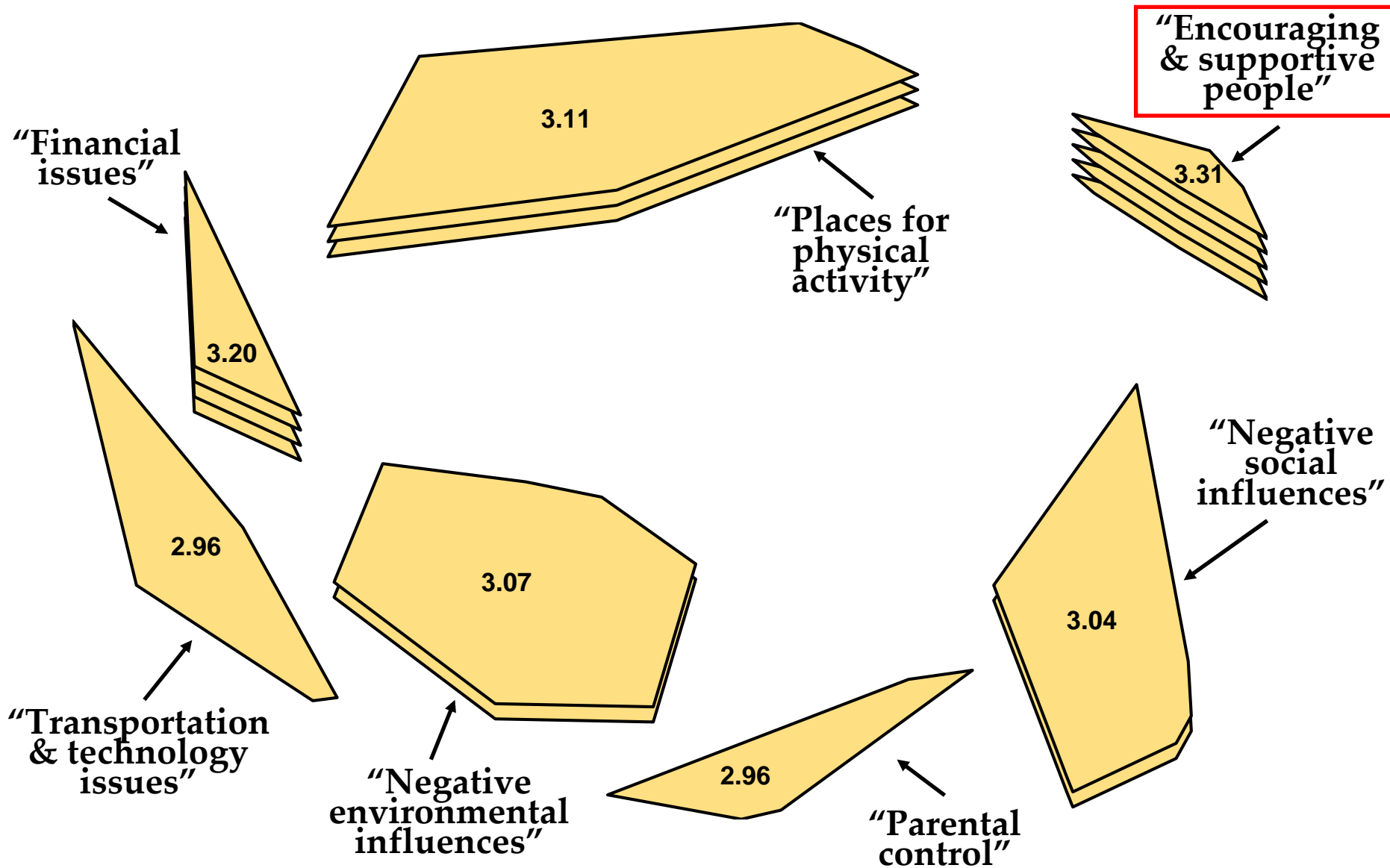
RESULTS: Cluster Rating Map



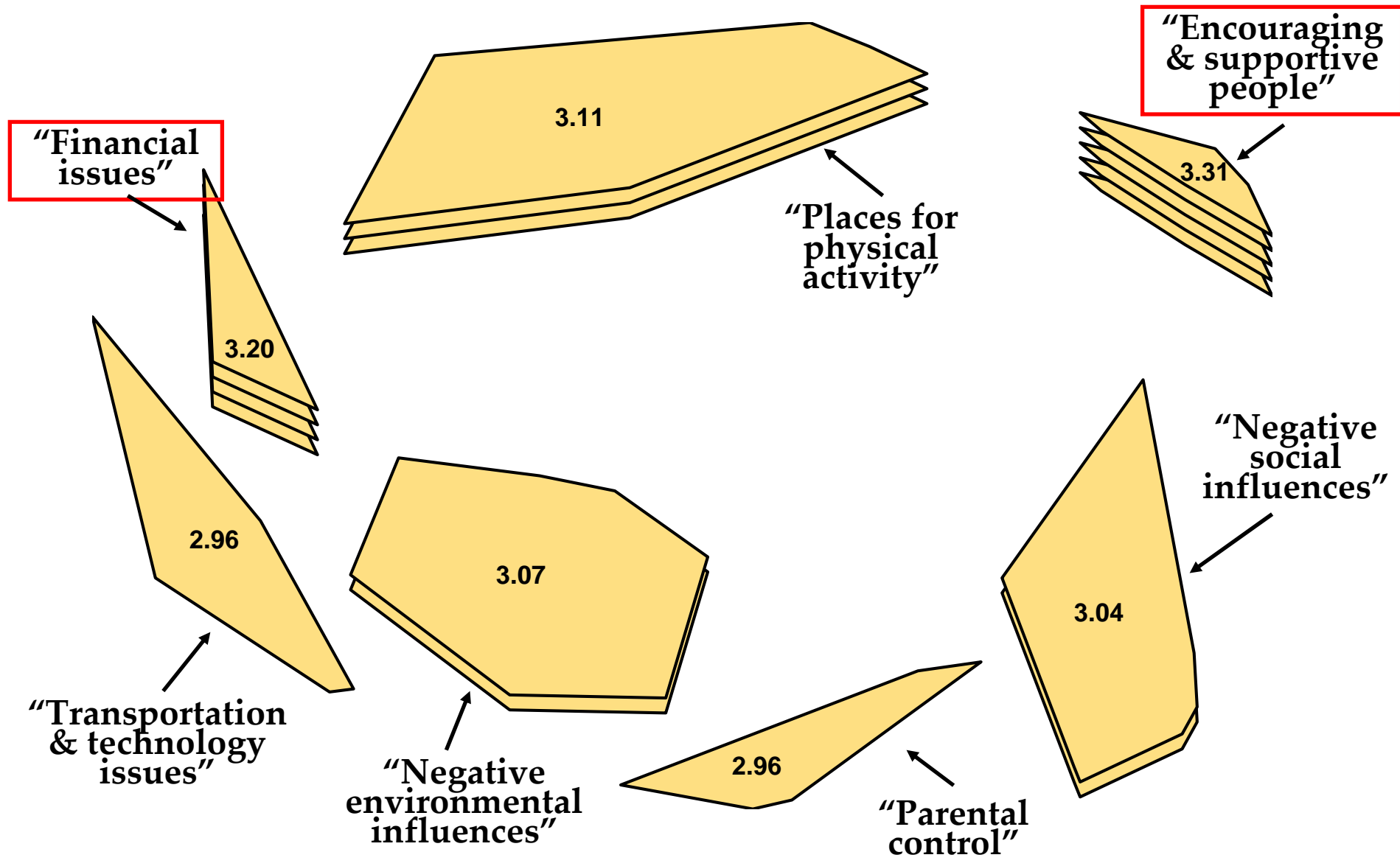
RESULTS: Cluster Rating Map



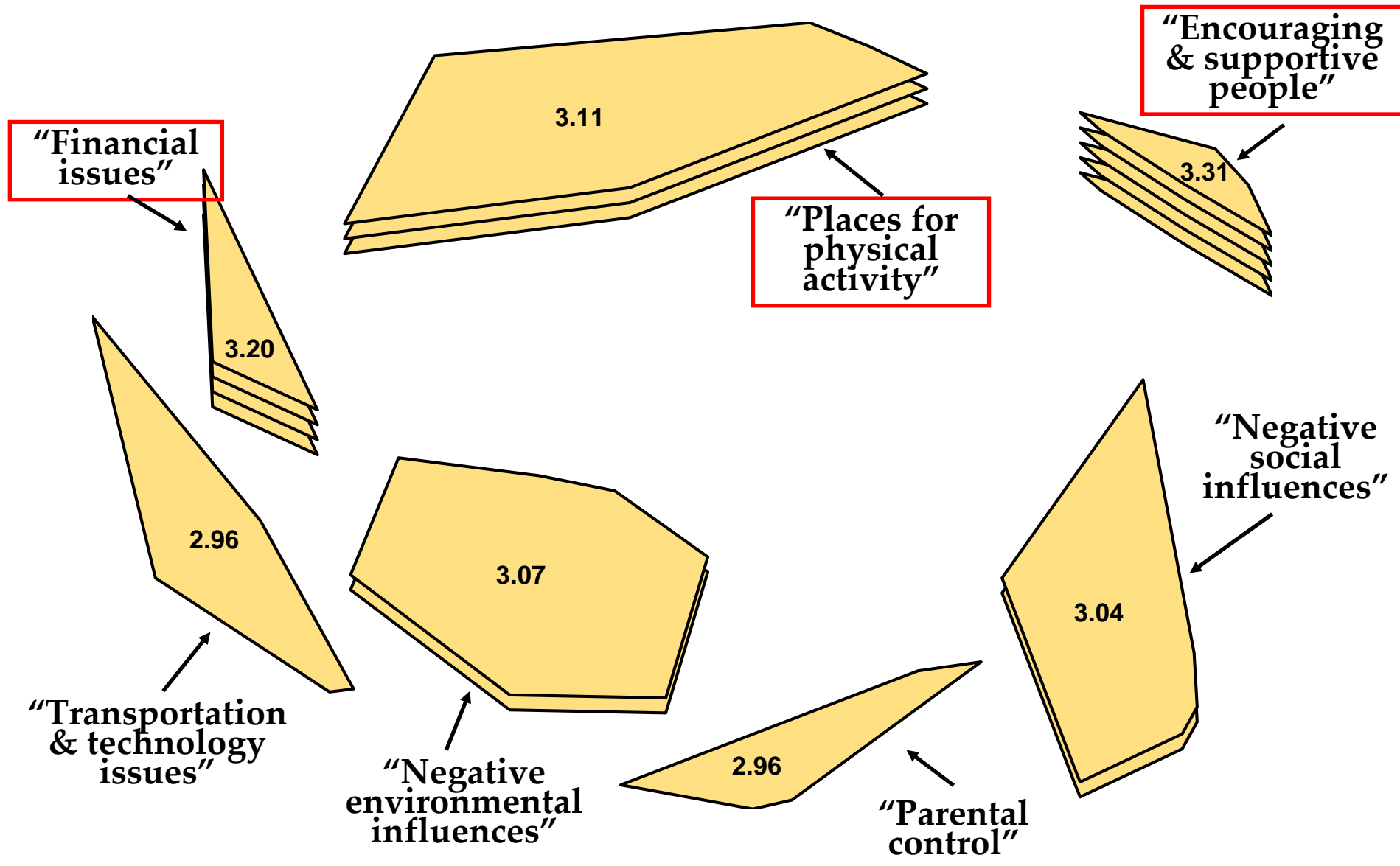
RESULTS: Cluster Rating Map



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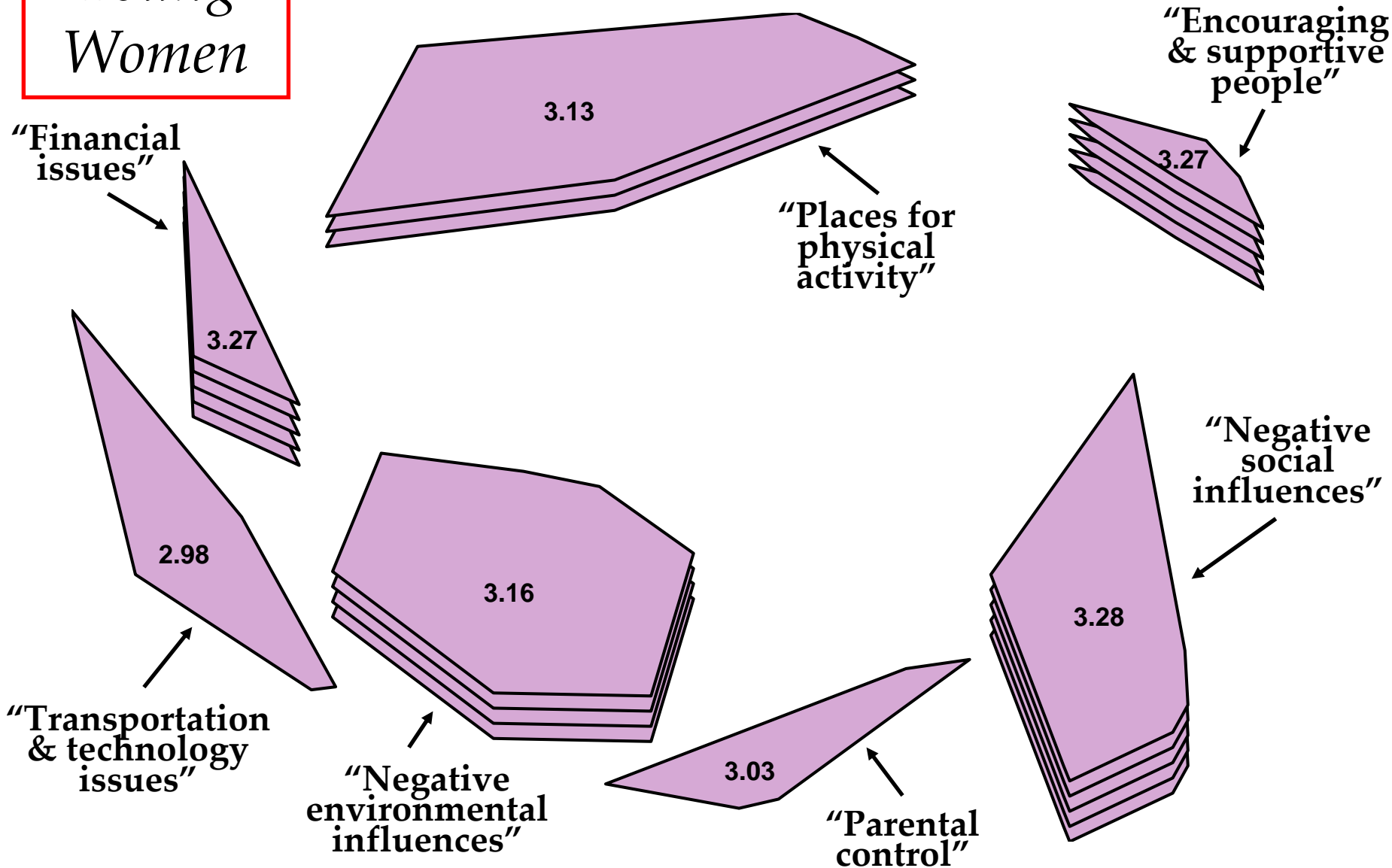


RESULTS: Cluster Rating Map



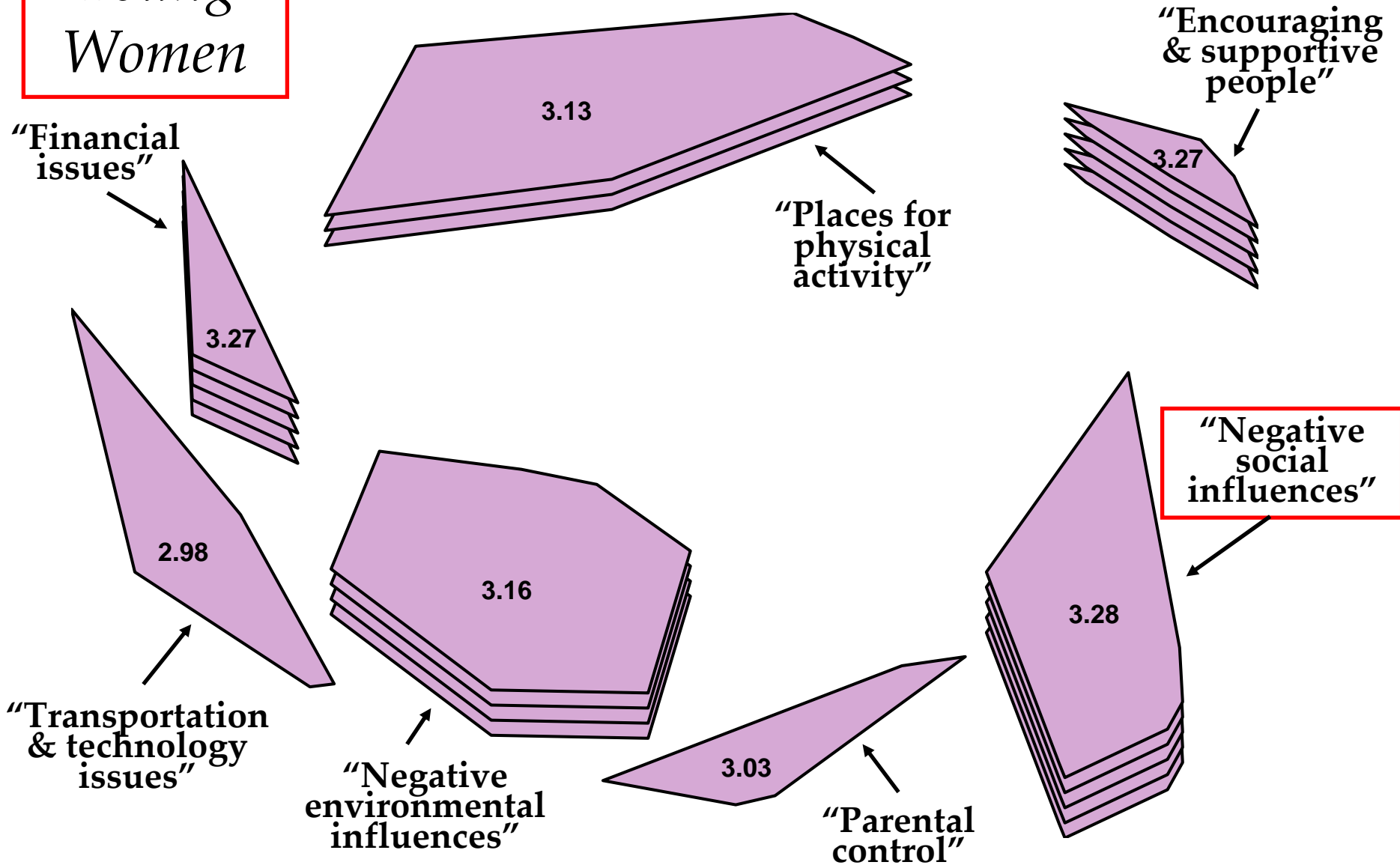
RESULTS: Cluster Rating Map

Young Women



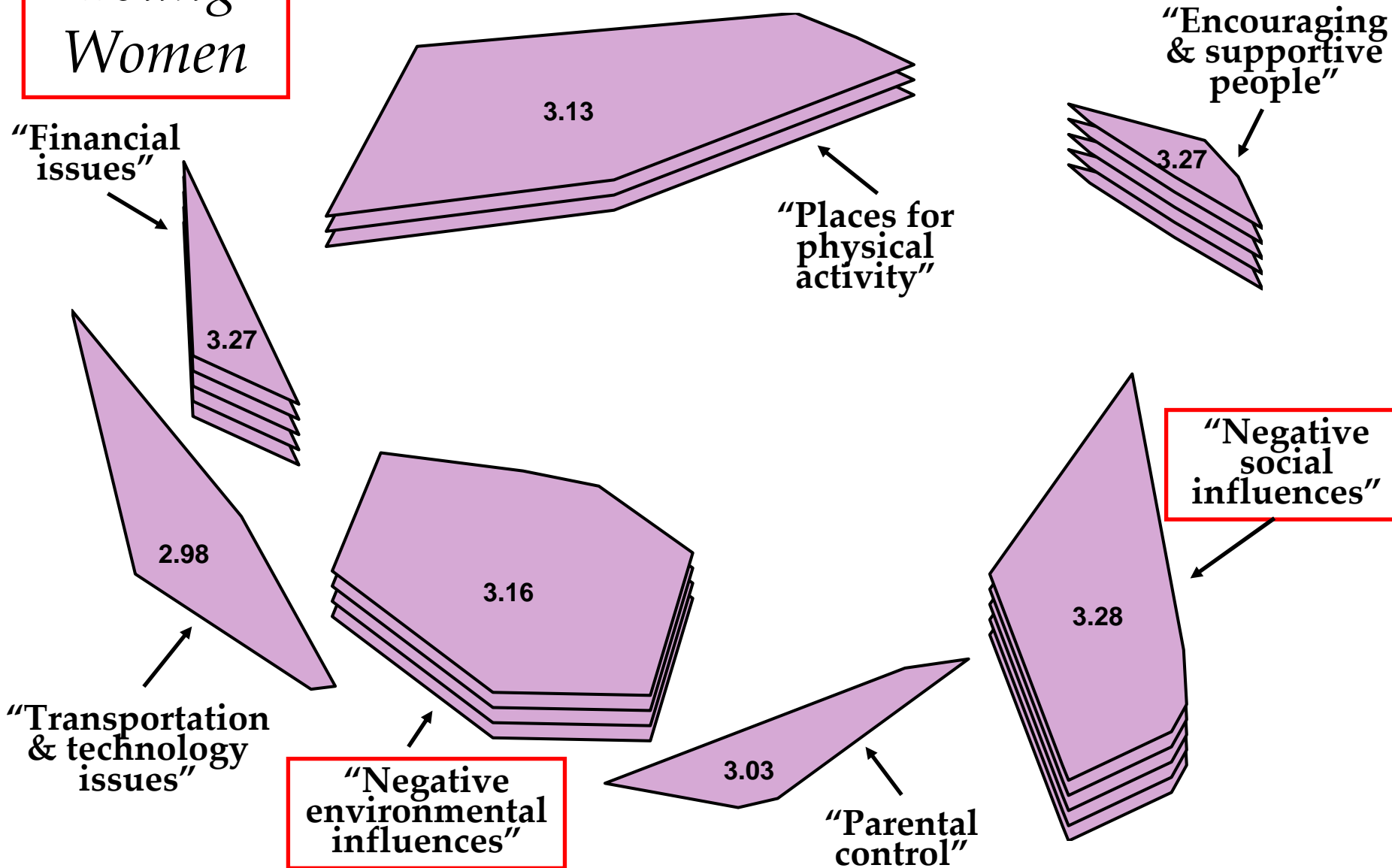
RESULTS: Cluster Rating Map

Young Women



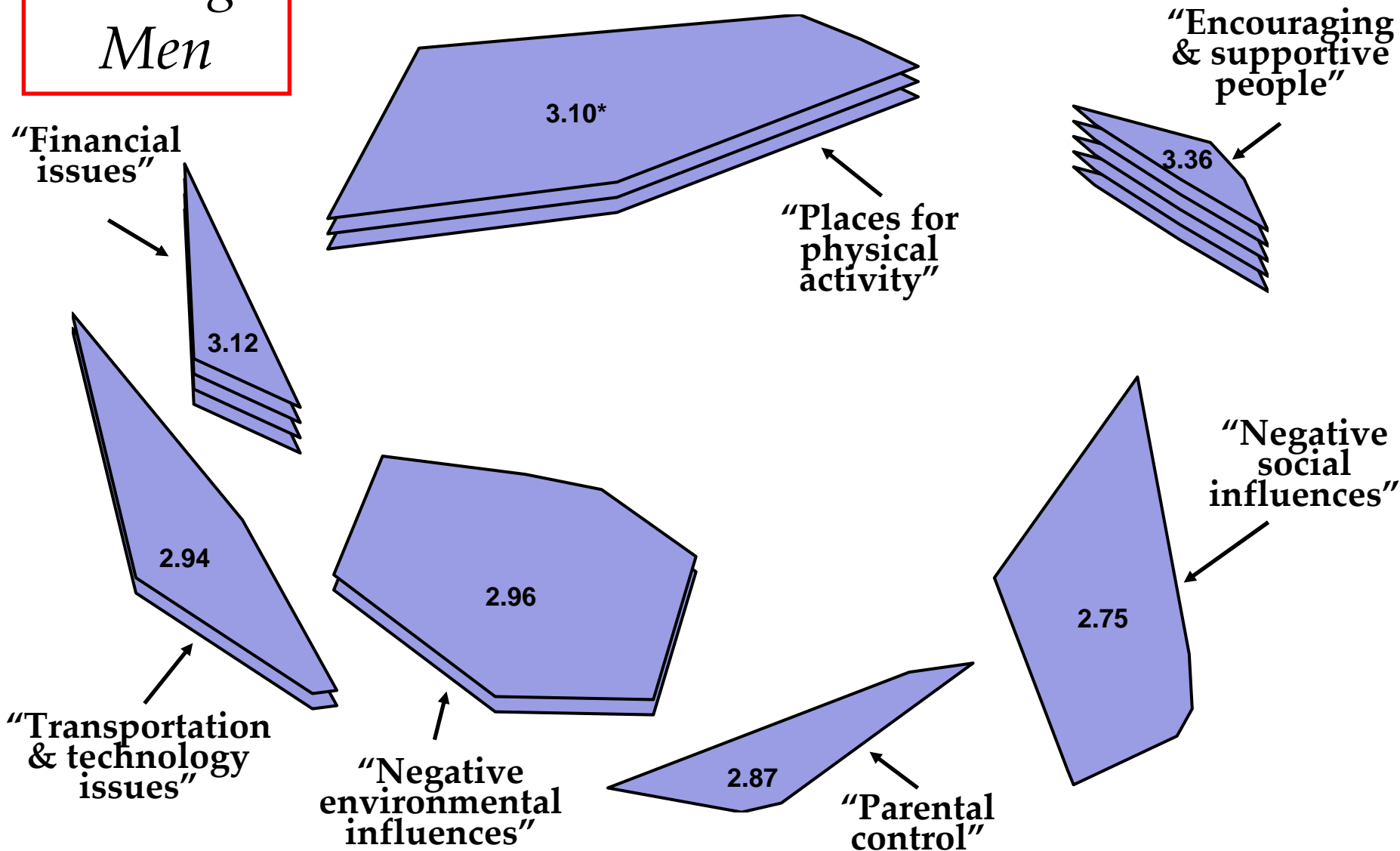
RESULTS: Cluster Rating Map

Young Women



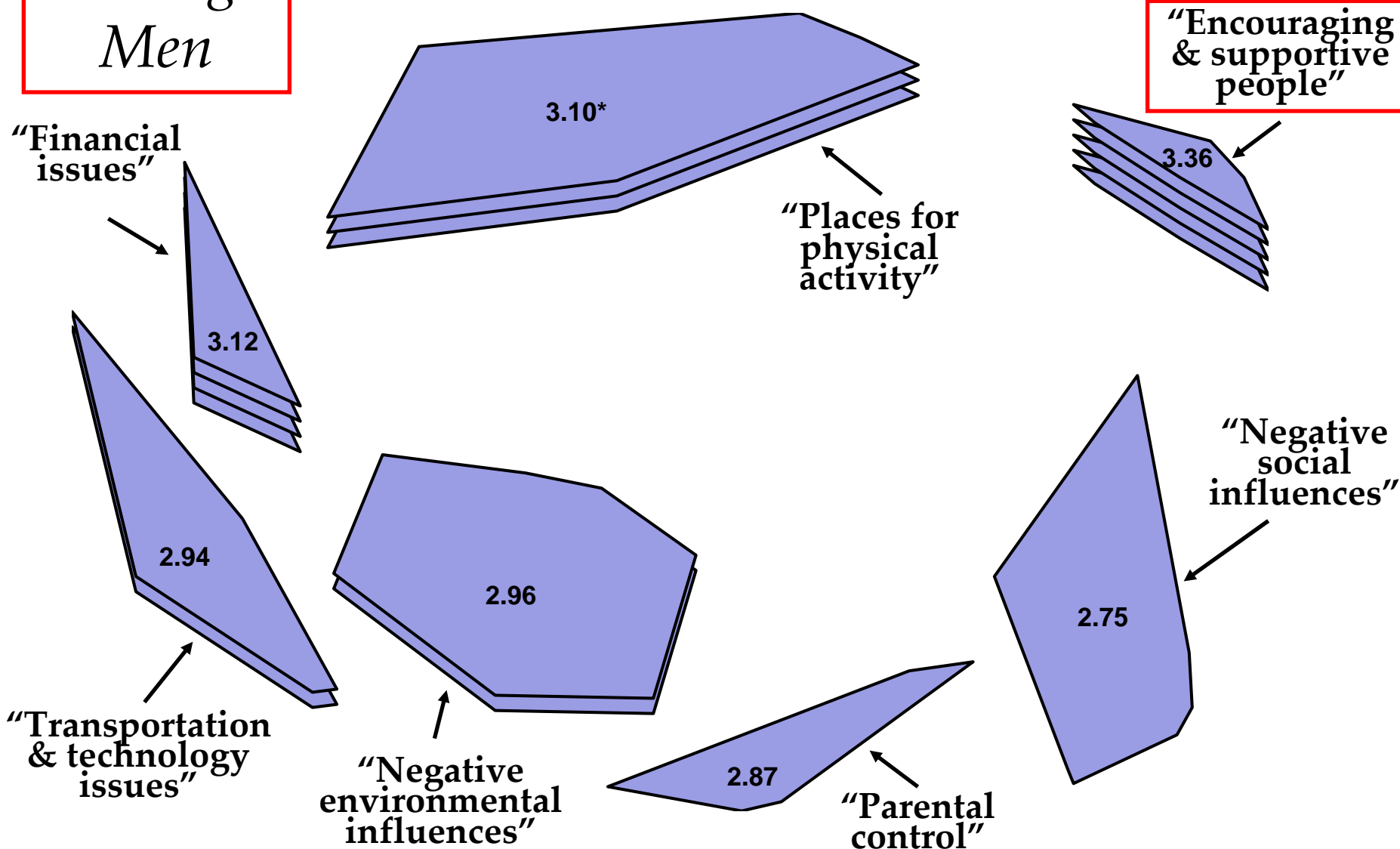
RESULTS: Cluster Rating Map

Young Men



RESULTS: Cluster Rating Map

Young Men



RESULTS: Cluster Rating Map

Young Men

"Financial issues"

"Encouraging & supportive people"

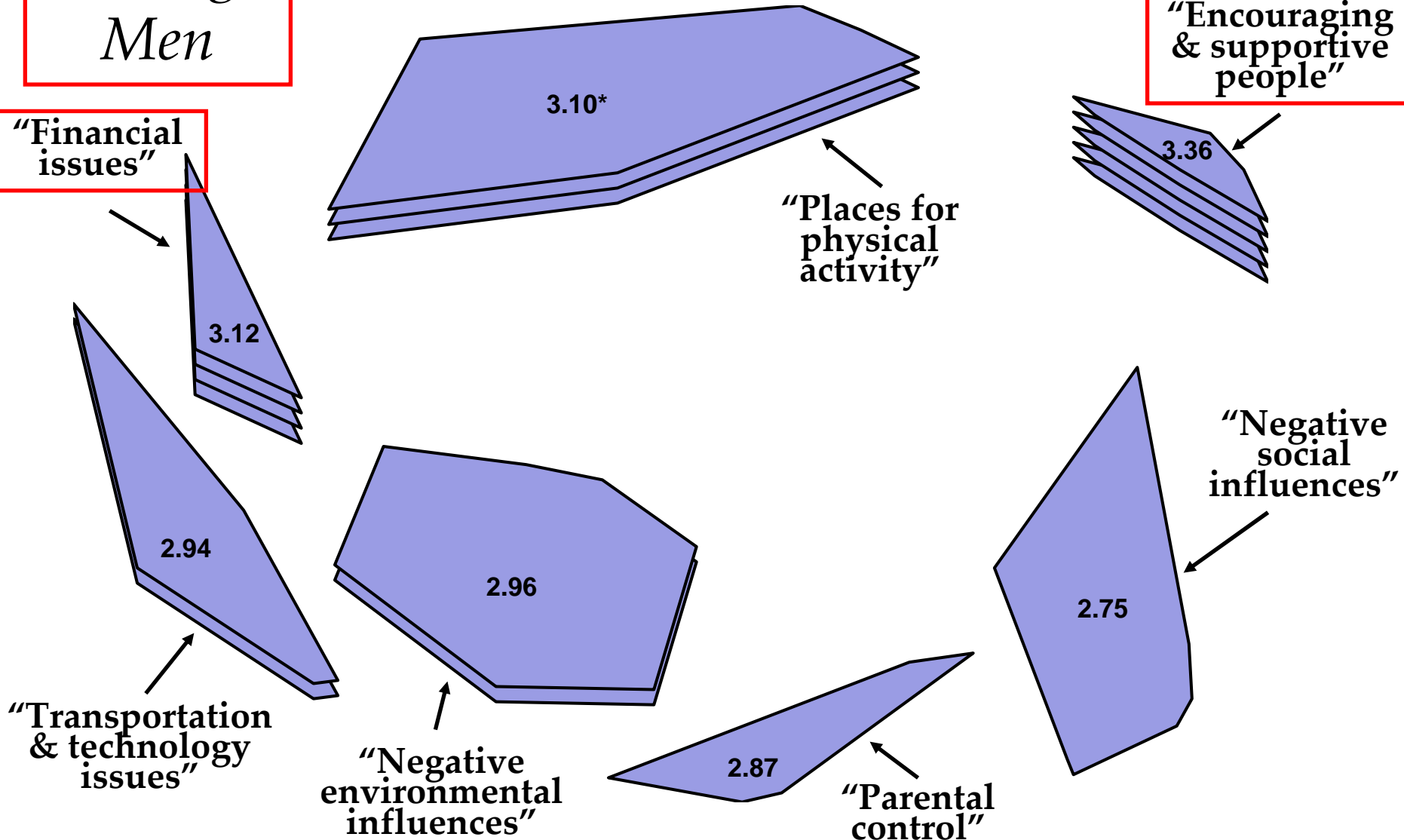
"Places for physical activity"

"Negative social influences"

"Transportation & technology issues"

"Negative environmental influences"

"Parental control"



RESULTS: Cluster Rating Map

Young Men

"Financial issues"

3.12

2.94

"Transportation & technology issues"

3.10*

"Places for physical activity"

"Encouraging & supportive people"

3.36

"Negative social influences"

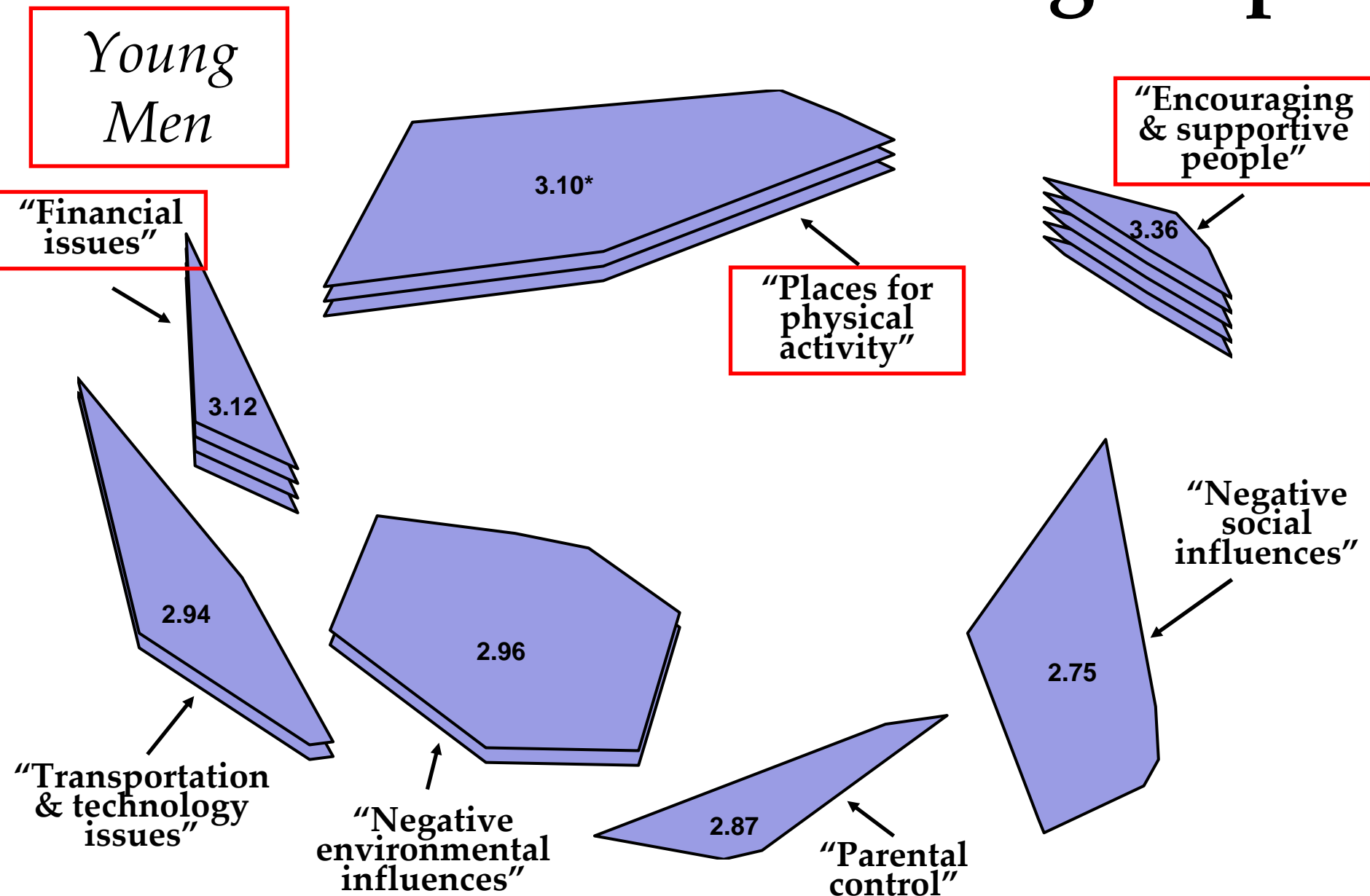
2.75

"Negative environmental influences"

2.96

2.87

"Parental control"



Item Importance Ratings

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Young women

- Safety-related items
(crime, violence, sexual offenders, drugs, gangs)
- Physical activity settings
- Friends you can be physically active with

Item Importance Ratings

Young women

- Safety-related items (crime, violence, sexual offenders, drugs, gangs)
- Physical activity settings
- Friends you can be physically active with

Young men

- Physical activity settings
- Social influences (friends you can be physically active with, friends and siblings encouraging you to be active, athletic competition)

- Adolescents' perceptions of environmental factors that influence their physical activity vary by gender

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- For young women only, negative characteristics of their environment, especially their social environment, are very important

- Adolescents' perceptions of environmental factors that influence their physical activity vary by gender
- For young women only, negative characteristics of their environment, especially their social environment, are very important
- For both young women and men, social support, financial issues, and physical activity settings are important

RESULTS: Utilization

Participant generated suggestions for
increasing physical activity

RESULTS: Utilization

Participant generated suggestions for increasing physical activity

- Build new and fix existing recreational facilities

RESULTS: Utilization

Participant generated suggestions for increasing physical activity

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- Reduce cost of admission to facilities

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Participant generated suggestions for increasing physical activity

- Build new and fix existing recreational facilities
- Reduce cost of admission to facilities
- Increase encouragement for physical activity from friends and family

RESULTS: Utilization

Participant generated suggestions for increasing physical activity

- Build new and fix existing recreational facilities
- Reduce cost of admission to facilities
- Increase encouragement for physical activity from friends and family
- Address concerns about neighborhood safety

Research Implications

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- Identified unique characteristics of the environment that are salient to African American youth
 - Develop and test age- and culturally-appropriate quantitative measures

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- Identified unique characteristics of the environment that are salient to African American youth
 - Develop and test age- and culturally-appropriate quantitative measures
- Revealed gender differences in adolescents' perceptions of how the environment impacts their physical activity
 - Test interactions by gender when examining safety and physical activity

Program and Policy Implications

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Physical activity promotion efforts targeting urban African American youth should...

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- Consider the physical activity promotion strategies identified by participants in this study

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- Address multidimensional, complex environmental factors impacting physical activity by incorporating change to multiple aspects of the environment

Physical

Social

Economic

Program and Policy Implications

Physical activity promotion efforts targeting urban African American youth should...

- Consider the physical activity promotion strategies identified by participants in this study
- Address multidimensional, complex environmental factors impacting physical activity by incorporating change to multiple aspects of the environment
 - Physical**
 - Social**
 - Economic**
- Address gender differences by focusing on similarities, such as social support and physical activity settings, and tailoring program components to address differences, such as safety concerns

Acknowledgements

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