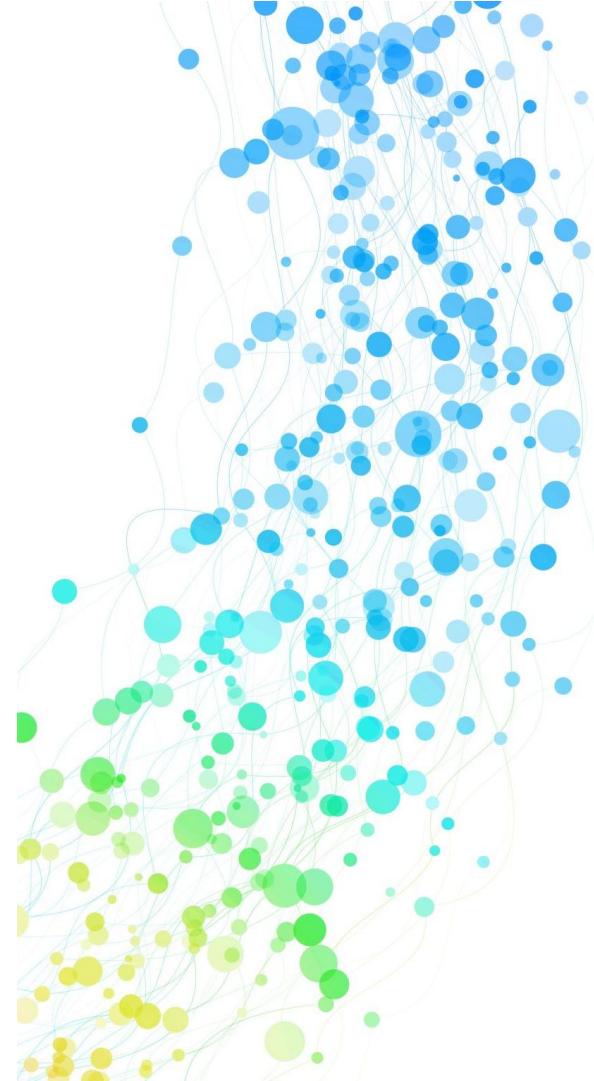
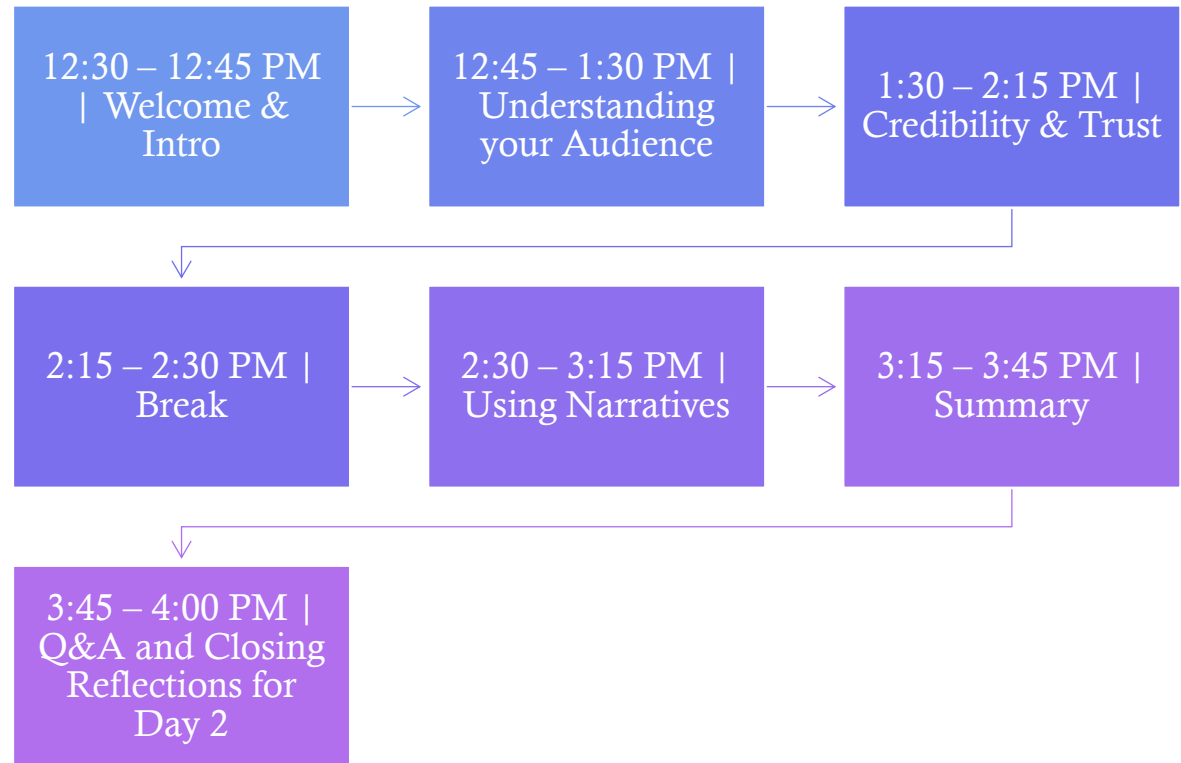

MALPH CJS LEADERSHIP TRAINING

Monique M. Turner, PhD

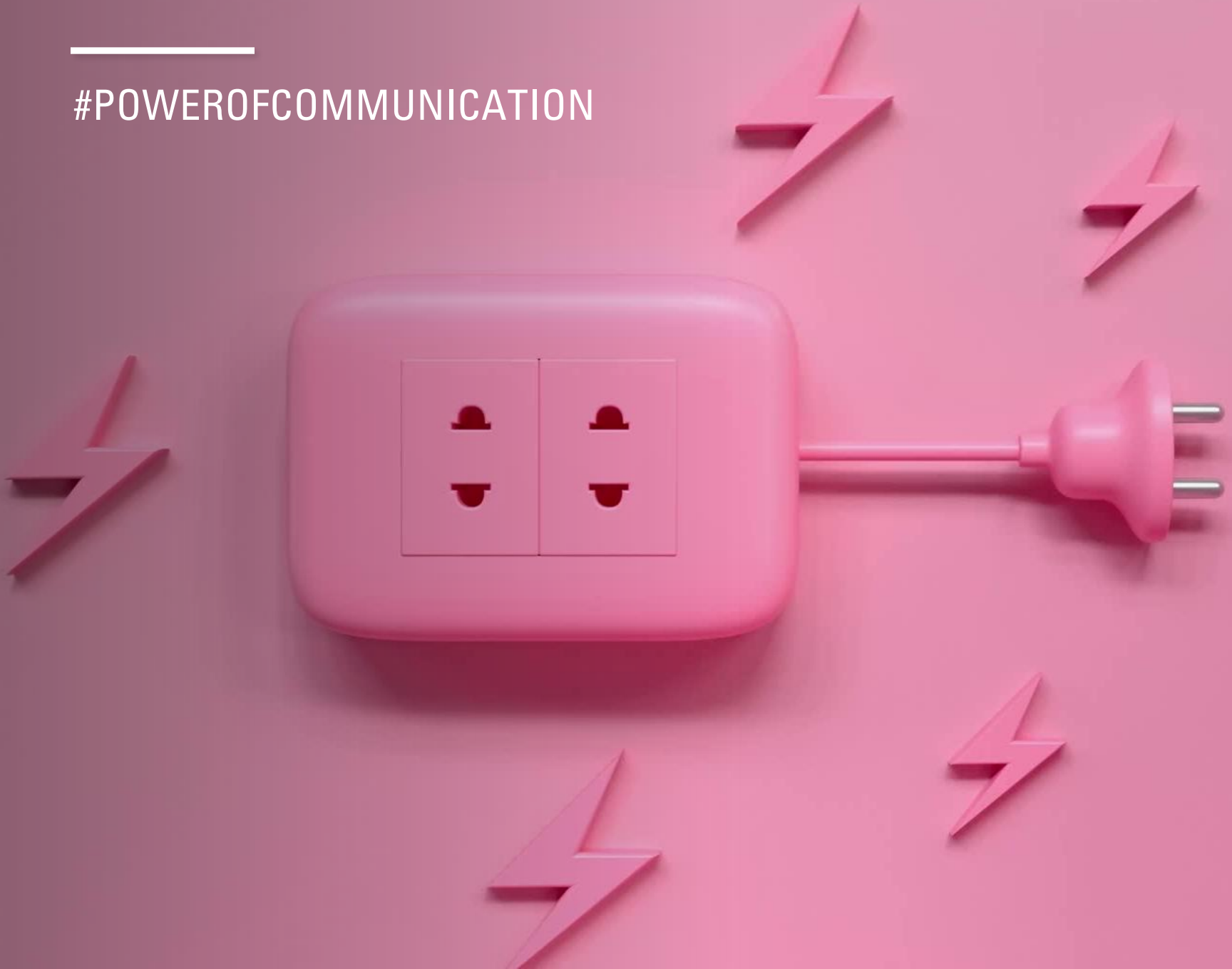
Michigan State University



AGENDA



#POWEROFCOMMUNICATION





BUILDING PARTNERSHIPS

WHAT ARE THE MOST IMPORTANT PARTNERSHIPS
FOR YOU TO FOCUS ON, DEVELOP AND/OR GROW?

I. S-M-C-R

S

Communication
Skills

Attitude

Knowledge

Social System

Culture

M

Content

Elements

Treatment

Structure

Codes

C

Hearing

Seeing

Touching

Tasting

Feeling

R

Communication
Skills

Attitude

Knowledge

Social System

Culture

WHICH OF THESE IS MOST IMPORTANT?

THE SCIENCE OF AUDIENCE ANALYSIS AND SEGMENTATION





AUDIENCE ANALYSIS &
SEGMENTATION: WHO
CARES?



AUDIENCE ANALYSIS

An **audience analysis** is a process used to identify and understand the priority and influencing audiences. A complete audience analysis looks at:

- Socio-demographic characteristics such as sex, age, language and religion.
 - **Geographic** characteristics like where the audience lives and how that might impact behavior.
 - Psychographic characteristics such as needs, hopes, concerns and aspirations.
 - Barriers and facilitators that prevent or encourage audience members to adopt the desired behavior change.
-





AUDIENCE SEGMENTATION

- **Segmentation** is the subdividing of a large audience (e.g., the primary audience) into distinct subsets.



Differentiating your
communication
strategy and
efforts to meet
the needs of
different
segments

Primary Characteristics of Segments

- *Demographics*: Describes basic characteristics (e.g., sex, gender id, age, locale, SES, etc)
- *Psychographics*: characteristics that tell us why segments differ (e.g., values, needs, preferences, decision processes).
- *Tactical descriptors*: characteristics that help us find and reach segments (e.g., social media habits, work habits, news habits).

Step 1: Identify Potential Audience(s)

To address the problem statement and achieve the vision decided upon during the situation analysis, brainstorm and list all potential audiences that are affected by or have control over the health or social problem.

Example 1: if the problem is *high unmet need for family planning*, potential audiences may be:

Example 2: if the external audience you want to partner with is local hospitals, your priority audience is.....

Step 2: Select the Priority Audience

The priority audience is not always the most affected audience, but *is the group of people whose behavior must change* in order to improve the health situation.

OR the audience that you are communicating with at any given time.

The number of priority audiences depends mainly on the number of audiences whose practice of the behavior will significantly impact the problem.

For example, priority audiences may be:

Step 2 continued

Keep in mind the vision. Then consider:

- How many people are in the audience
- How important it is that the audience change their attitudes, opinions or behavior
- How likely it is that the audience will change their attitudes, opinions or behavior
- Who controls the behavior or the resources required for a behavior change

Step 3: Identify Priority Audience Characteristics

Identify the socio-demographic, geographic and psychographic characteristics of each priority audience. Include their communication preferences and other opportunities to reach them.

Socio-Demographic	Geographic	Psychographic	Communication Channels	Other Opportunities
- Sex or gender - Age range - Education level - Job type - Language - Ethnicity - Religion - Household size or number of children - Level of income - Education - Occupation Sources: - DHS - Census Data	- Region - District - City - Urban - Rural Sources: - Census Data - Local Government Data	- Needs or concerns - Hopes and aspirations - Values - Interests - Activities - Attitudes and opinions - Lifestyle - Personality traits Sources: - Market research - Consumer surveys - Media reports - Project research	- Frequent vs. occasional use - Use for general information - Use for health information Examples: - Community media - Print - Radio - Television - Mobile phone - Social media Sources: - Media reports	- Where audiences spend time - Activities audiences already participate in Examples: - Community events - Health clinics - Religious institutions - Health fairs - Schools and school events

Step 4: Identify Knowledge, Attitudes and Practices



Understand what the priority audience knows, thinks, feels and does about the problem in order to determine the audiences' stage of behavior change. This allows the program to design messages and activities based on the audience's knowledge, beliefs, attitudes and behaviors.

Step 5: Identify Barriers and Facilitators

- **Habit:** People are comfortable doing things the same way they have always done them.
- **Fear:** People expect change to bring negative consequences.
- **Negative experience:** Some audiences may have had a bad experience, such as with the health care system, and thus may be cynical or resistant to change.

A CASE FOR YOU



**OF COURSE YOU'LL
NEVER GET HURT**

**BUT WHAT
ABOUT THEM?**

Not everyone who drives your tractor has as much experience as you do. Without roll-over protection, they're at risk.

If you won't do it for your safety, do it for theirs.

Call to schedule an appointment and save up to \$600 off installation depending on your tractor model.

**CALL
1-800-ROPSR4U**

MOST TRACTOR ROLLOVERS HAPPEN TO EXPERIENCED FARMERS



Sponsors:
James L. Seward
Catherine M. Young



**“We almost lost a brother,
our farm, our way of life...
We installed ROPS on all of our tractors to make sure
it doesn't happen again.” —Tobias Brothers, Hidden View Farm**



**New 2009 Rebate!
70% off
Save up to \$765 on costs to
retrofit your tractor**

More than half of rollover injuries require a trip to the hospital and result in 70 lost workdays due to the injury. 1 in 7 farmers involved in tractor overturns are permanently disabled.

Invest in rollover protection now and we'll pick up part of the bill. Call now and receive a rebate of 70% (up to \$765) for the entire cost of retrofitting your tractor. We will help you find the right model and dealer.

Now, getting rollover protection has never been easier or more affordable.

CALL 1-877-ROPS-R4U

80% OF DEATHS CAUSED BY ROLLOVERS HAPPEN TO EXPERIENCED FARMERS.



Source: Jason L. Starnes and Catherine M. Young

- Testimonial approach
- Feature the rebate more prominently
- Emphasize outreach through local suppliers, community channels, farm events

WRITE DOWN EVERYTHING YOU
KNOW ABOUT YOUR PRIORITY
AUDIENCE.

SOURCE FACTORS



CREDIBILITY



INTEGRITY



TRUST



RELIABLE



AUTHENTIC



COMMITMENT



REGARD



REPUTATION

SOURCE FACTORS

Source: The person involved in communicating a marketing message



Direct Source: A spokesperson who delivers a message and/or demonstrates a product or service

Indirect Source: Doesn't actually deliver a message but draws attention to and/or enhances the appearance of the message

- Three basic categories of source attributes: credibility, attractiveness and power

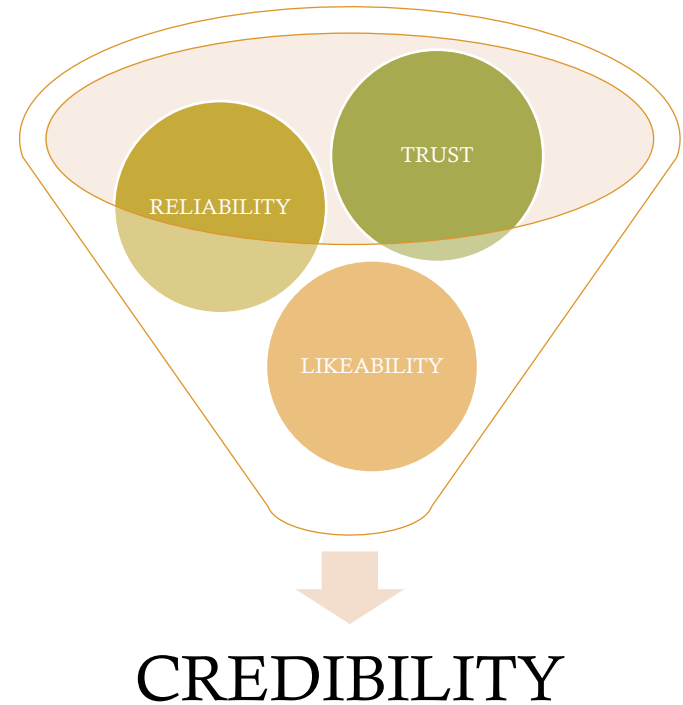
Credibility is the extent to which the recipient sees the source as having relevant knowledge, skill, or experience and trusts the source to give unbiased, objective information.

Expertise and trustworthiness are two important dimensions to credibility.

Information from a credible source influences beliefs, opinions, attitudes, and/or behavior through a process known as **internalization**, which occurs when the receiver adopts the opinion of the credible communicator since he or she believes information from this source is accurate

WHAT CULTIVATES TRUST?

- Trust is a major component of source credibility.



BUILDING TRUST THROUGH THE MESSAGE

- Positively impacting trust:
 - Objectivity
 - Clarity/Accuracy of Info
 - Recommendation by others
- Negatively impacting trust:
 - Bias
 - Complex/inappropriate Info
 - Unknown (low recommendation)

Sbaffi, L., & Rowley, J. (2017). Trust and Credibility in Web-Based Health Information: A Review and Agenda for Future Research. *Journal of Medical Internet Research*, 19(6), e218. <https://doi.org/10.2196/jmir.7579>

Lin, T.-C., Hwang, L.-L., & Lai, Y.-J. (n.d.). Effects of argument quality, source credibility and self-reported diabetes knowledge on message attitudes: an experiment using diabetes related messages. *Health Information & Libraries Journal*, 34(3), 225–235. <https://doi.org/10.1111/hir.12181>

SOURCE CREDIBILITY IS *SUBJECTIVE*

- Building trust using an **objective** and **accurate** message, and building a **following** will put you and your message in the best light for the audience.

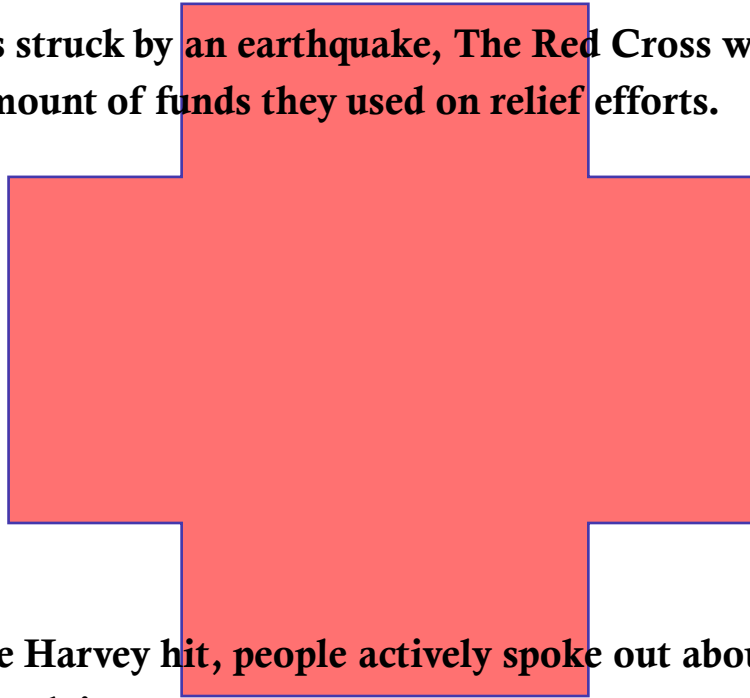
WATCH OUT FOR INACCURATE INFORMATION!!

- The higher the misinformation, the lower source credibility is rated.

FOR EXAMPLE...

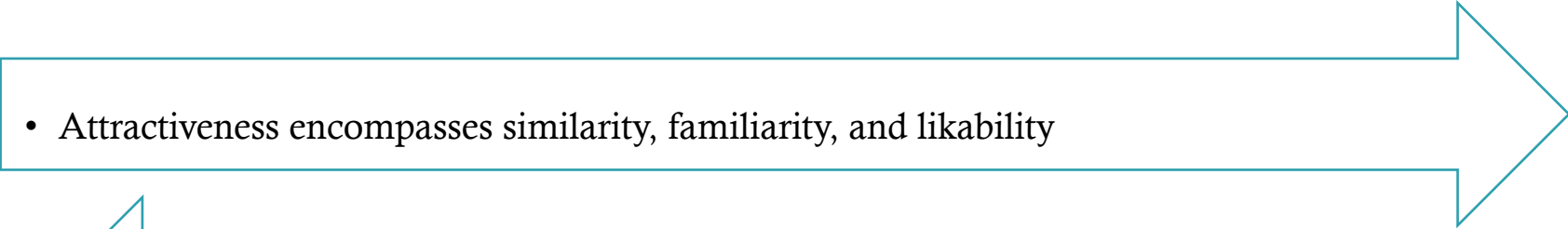
- In 2010 when Haiti was struck by an earthquake, The Red Cross was exposed for overexaggerating the amount of funds they used on relief efforts.

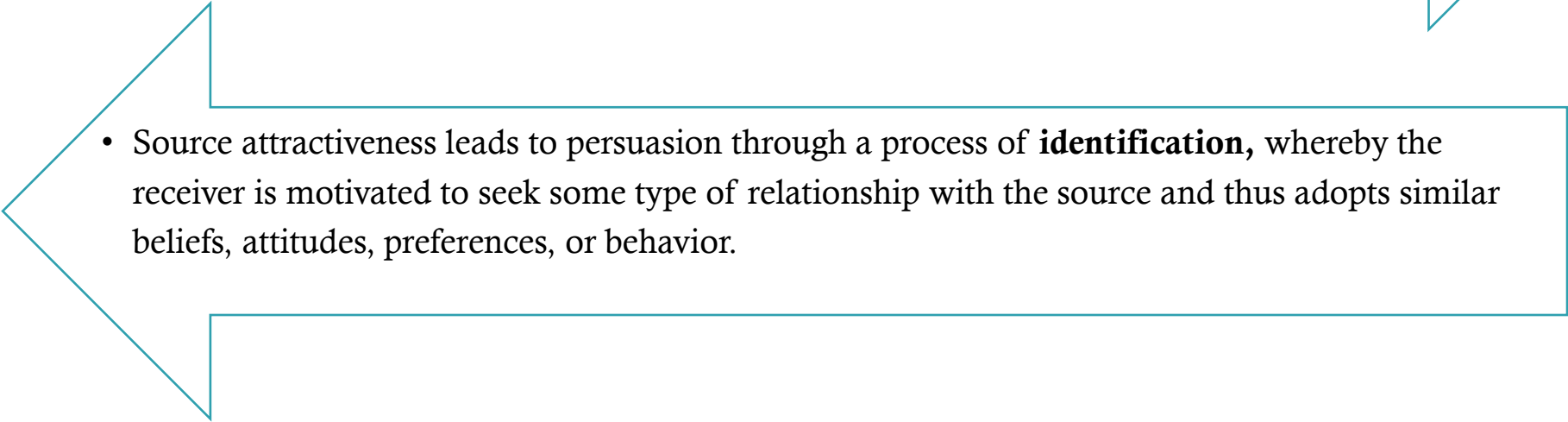
So....



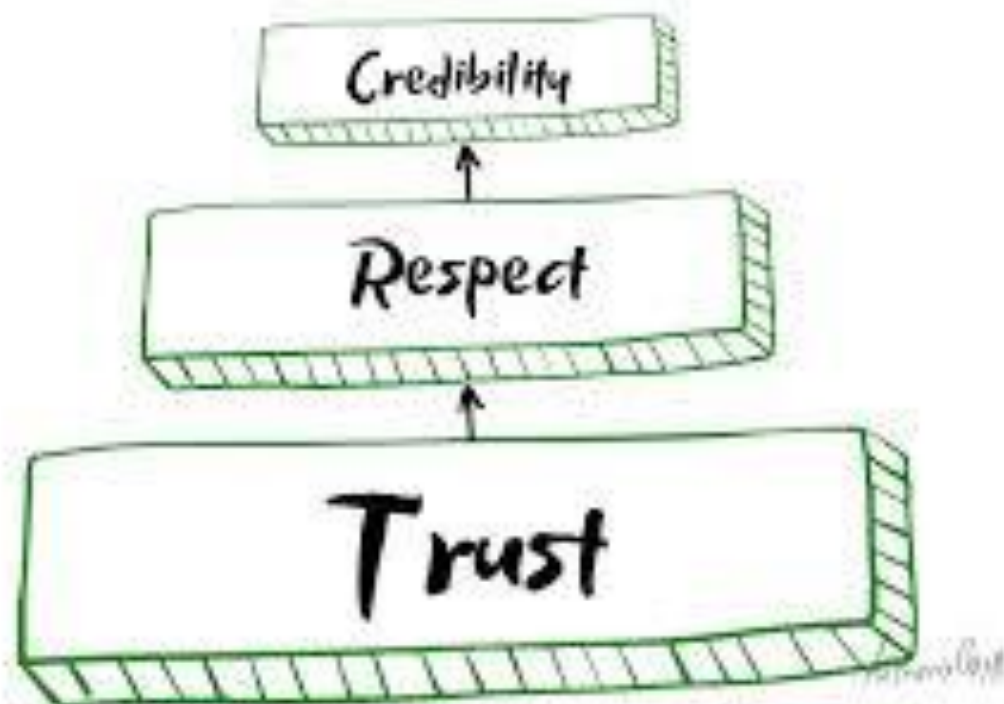
- In 2017 when Hurricane Harvey hit, people actively spoke out about *not* donating to TRC because of its fraudulent claims
-

SOURCE “ATTRACTIVENESS”

- 
- Attractiveness encompasses similarity, familiarity, and likability

- 
- Source attractiveness leads to persuasion through a process of **identification**, whereby the receiver is motivated to seek some type of relationship with the source and thus adopts similar beliefs, attitudes, preferences, or behavior.

Building Credibility



**WHAT ARE YOUR STRENGTHS WHEN IT COMES
TO CREDIBILITY?**

NEXT UP: MESSAGE STRATEGIES

TO STORY OR NOT TO STORY?

NARRATIVE EVIDENCE

TRANSPORTATION THEORY

“TRANSPORTATION THEORY: THE IDEA THAT STORIES CAN ‘TRANSPORT’ THE VIEWER TO THE SITUATION AND INFLUENCE BEHAVIOR.”

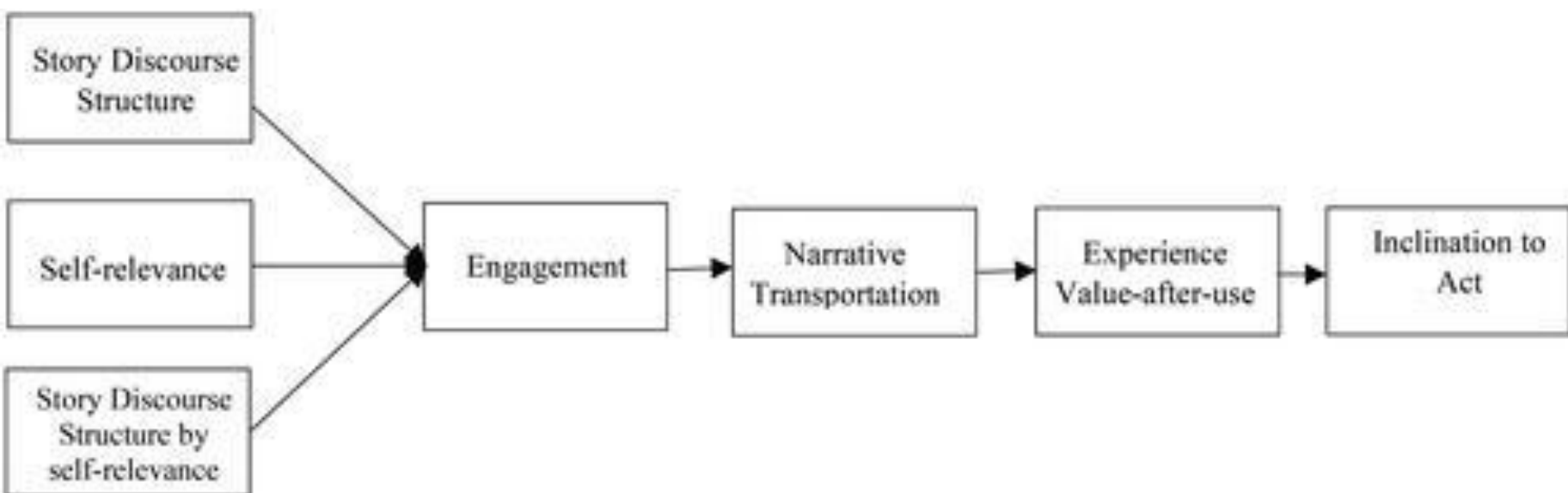
Transportation works by reducing counter-arguing, creating character liking/connection and increased perception of realism and emotional involvement.

Works best when character is relatable- e.g. same age, same ethnicity, same SES etc.

Short Narratives as effective as Long Narratives

Gender not shown to be influencing Transportation.

Loss Aversion Framing (you'll have bad outcome if you don't do this) is more powerful and engaging than Gain Framing





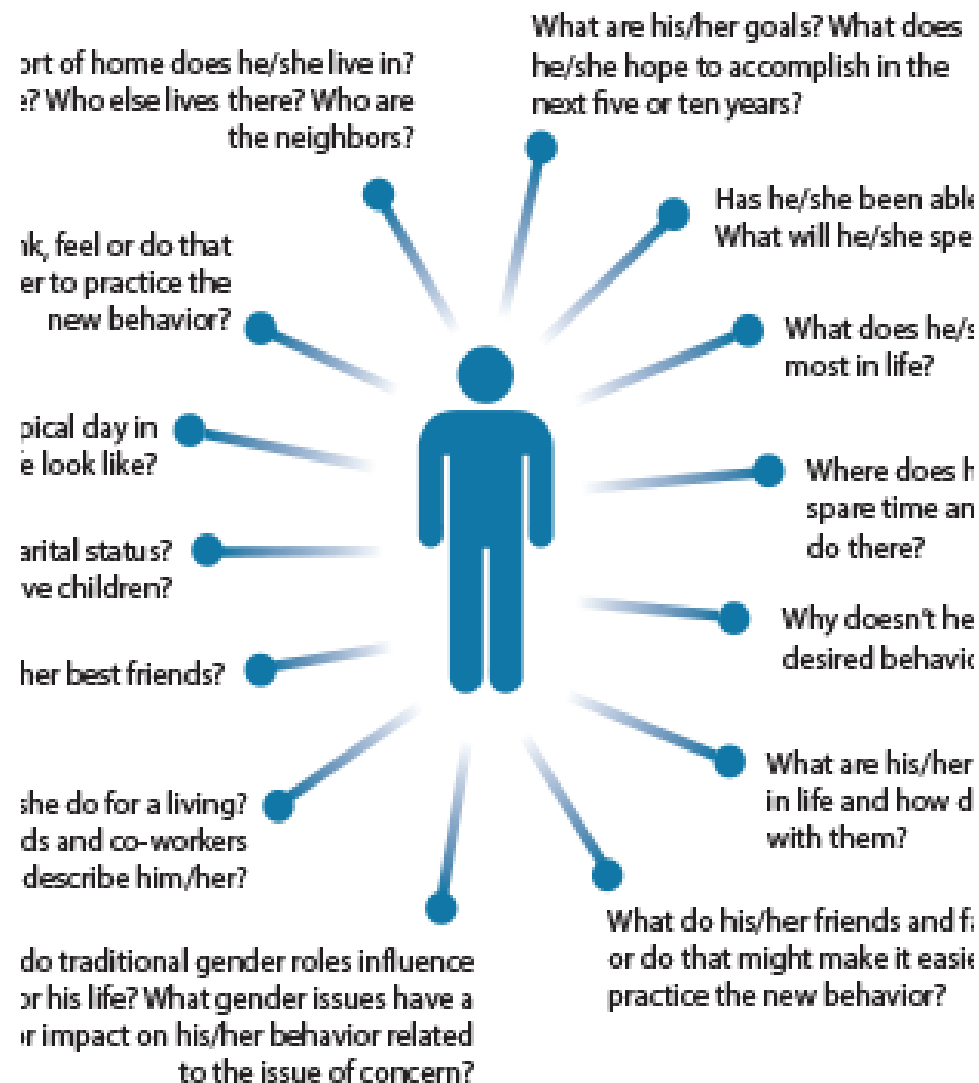
ADDITIONAL SLIDES—JUST IN CASE

SEGMENTATION

DETERMINE SEGMENTATION CRITERIA

Decide what criteria to use to segment the audience(s). First, look at the primary audience(s) and identify traits that make a subgroup significantly different from other audience members.

A significant difference is one that requires a different messages or approach. These differences are typically based on socio-demographic, geographic, behavioral or psychographic differences among members of the primary audience.





CHECKLIST FOR SEGMENTATION

1. Is it values, needs, or choice-based? Whose values and needs?
 2. Is it a projectable sample?
 3. Are the segments stable?
 4. Does the segment help us focus on important campaign decisions? (strategy, design, positioning, channel selection)
-

STEP 7: IDENTIFY KEY INFLUENCERS

- Based on the segmented audience, identify the key influencers. Search the situation analysis, **stakeholder workshop** and any qualitative research findings for indications of who strongly influences the priority audience's behavior. Consider the following factors to help identify influencing audiences:
 - Who has the most impact on the priority audience's health-related behavior and what is their relationship to the priority audience?
 - Who makes or shapes the priority audience's decisions in the problem area?
 - Who influences the priority audience's behavior positively and who influences it negatively?
-

STEP 8: ORGANIZE INFLUENCING AUDIENCE INFORMATION

- For each [influencing audience](#) identified, search the literature to identify information about them and their relationship to the [priority audience](#). Look for:
 - How strongly the group influences the priority audience
 - What behaviors they encourage the priority audience to practice
 - Why they would encourage or discourage the desired behavior
 - How to reach them
 - Organize information on influencing audiences in another table for later use in the SBCC strategy (see [Influencing Audiences Template](#) under templates):
-

STRATEGY

Segmentation

- Identify segmentation bases and segment the market.
- Develop profiles of resulting segments.

Targeting

- Evaluate attractiveness of each segment.
- Select target segments.

Positioning

- Identify possible positioning concepts for each target segment.
 - Select, develop, and communicate the chosen concept.
-

BEHAVIOR-BASED SEGMENTATION

- Traditional segmentation (eg, demographic, psychographic)
 - Needs-based segmentation
 - *Behavior-based segmentation*
-

STEPS IN A SEGMENTATION STUDY



Articulate a strategic rationale for segmentation (ie, why are we segmenting this market?).



Select a set of needs-based segmentation variables most useful for achieving the strategic goals.



Select a cluster analysis procedure for aggregating (or disaggregating customers) into segments.



Group customers into a defined number of different segments.



Choose the segments that will best serve the firm's strategy, given its capabilities and the likely reactions of competitors.

STEP 3. DEVELOP PROFILES

Variables to Segment and Describe Markets

	Consumer	Industrial
<i>Segmentation Bases</i>	Needs, wants benefits, solutions to problems, usage situation, usage rate.	Needs, wants benefits, solutions to problems, usage situation, usage rate, size*, industrial*.
<i>Descriptors</i>		
Demographics	Age, income, marital status, family type & size, gender, social class, etc.	Industry, size, location, current supplier(s), technology utilization, etc.
Psychographics	Lifestyle, values, & personality characteristics.	Personality characteristics of decision makers.
Behavior	Use occasions, usage level, complementary & substitute products used, brand loyalty, etc.	Use occasions, usage level, complementary & substitute products used, brand loyalty, order size, applications, etc.
Decision Making	Individual or group (family) choice, low or high involvement purchase, attitudes and knowledge about product class, price sensitivity, etc.	Formalization of purchasing procedures, size & characteristics of decision making group, use of outside consultants, purchasing criteria, (de) centralizing buying, price sensitivity, switching costs, etc.
Media Patterns	Level of use, types of media used, times of use, etc.	Level of use, types of media used, time of use, patronage at trade shows, receptivity of sales people, etc.

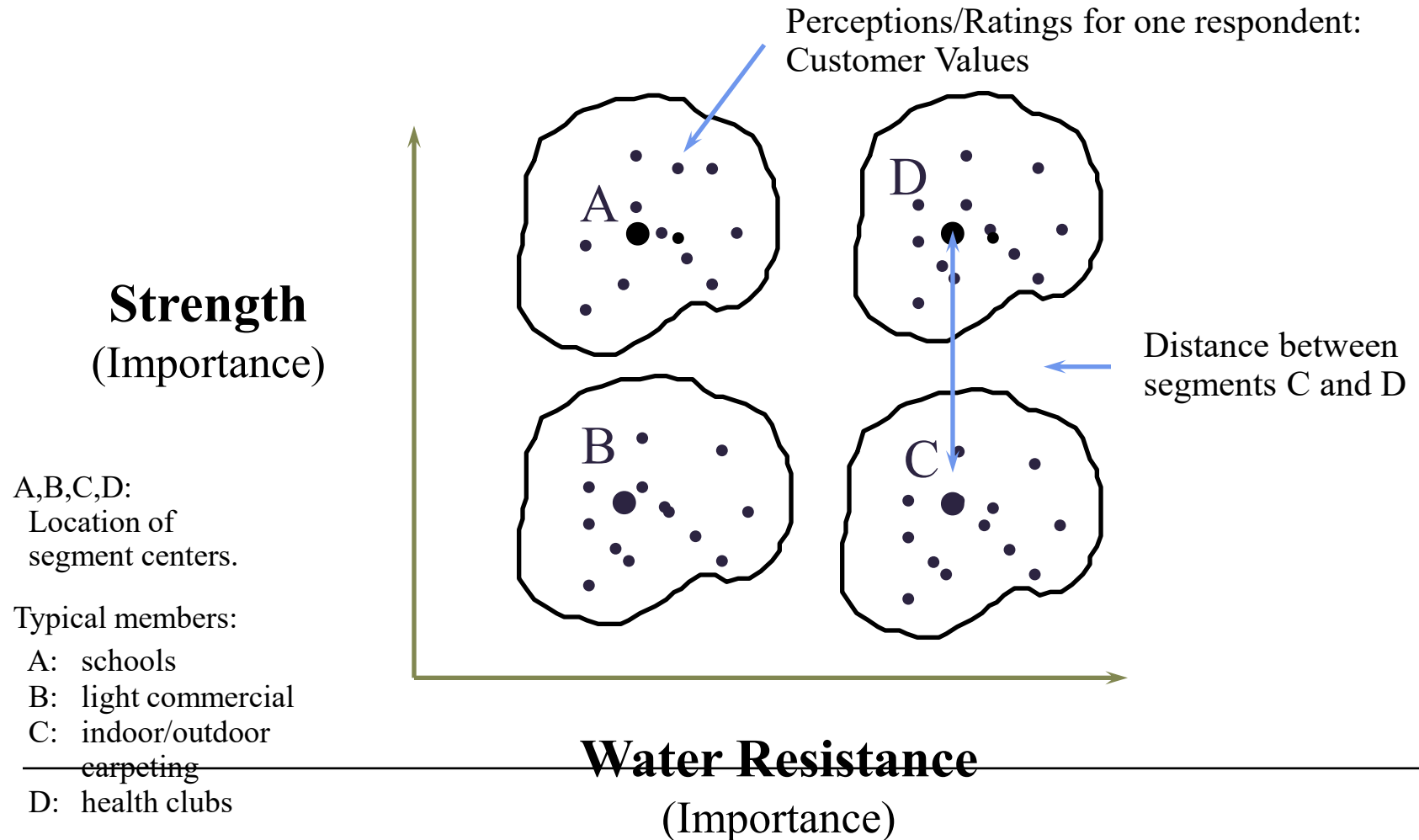
A NOTE ON POSITIONING

- Positioning involves designing an offering so that the target segment members perceive it in a distinct and valued way relative to competitors.
 - Three ways to position an offering:
 - 1. Unique: “Only product/service with XXX”
 - 2. Difference: “More than twice the [feature] vs [competitor]”
 - 3. Similarities: “Same functionality as [competitor]; lower price”
 - What are *you* telling your targeted segments?
-

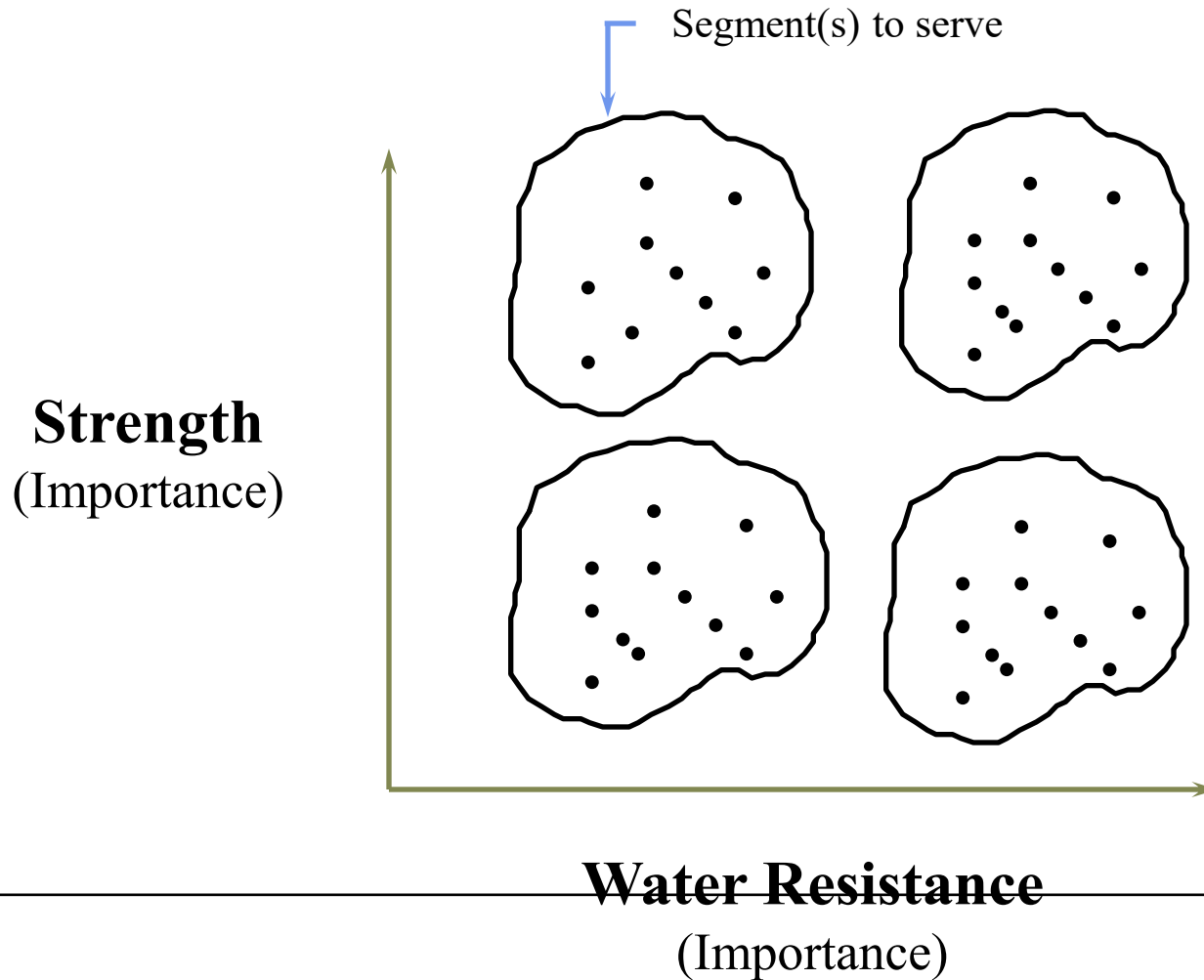
OVERVIEW OF METHODS FOR STP

- Clustering and discriminant analysis
 - Choice-based segmentation
 - Perceptual mapping - later
-

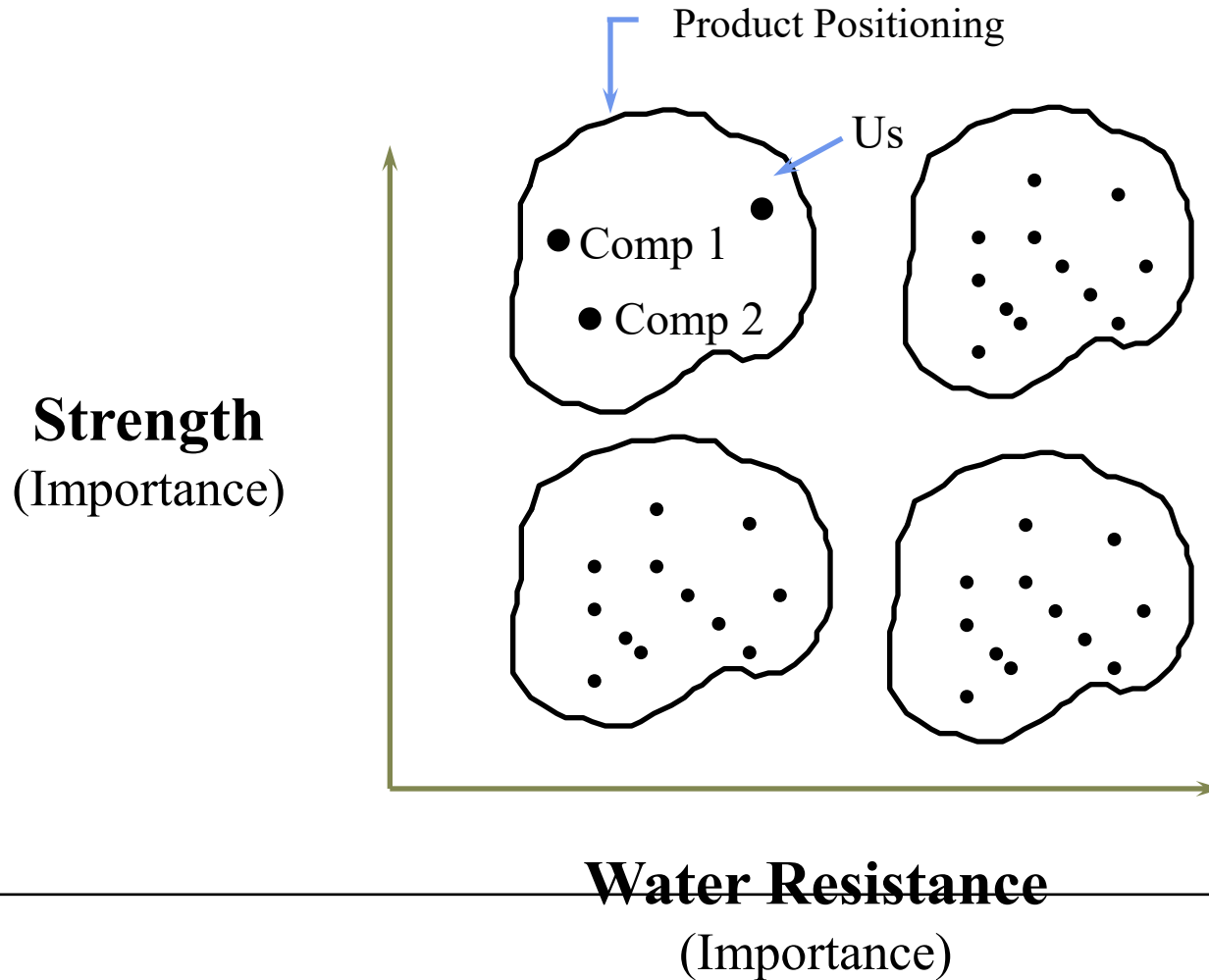
~~SEGMENTATION (FOR CARPET FIBERS)~~



TARGETING



POSITIONING





CASE APPLICATIONS OF AUDIENCE SEGMENTATION

APPLICATIONS TO HEALTH (CONTINUED)

- Social marketing has been adopted by health communicators as a framework for designing engagement and behavior change programs associated with increasing physical activity, quitting smoking, moderating alcohol use, and reducing the incidence of obesity, high cholesterol, and sexually transmitted disease.
 - Health messages achieve significantly greater behavioral change than generalized, nontailored messages.
 - ***Transtheoretical Model*** divides the health behavior change process into five distinct stages:
 1. *Precontemplation* (not planning to change)
 2. *Contemplation* (intending to change within the next 6 months)
 3. *Preparation* (intending to change soon and preparing for change)
 4. *Action* (currently going through the change process)
 5. *Maintenance* (sustaining change for 6 months or more)
 - **Rimal and Real's Risk Perception Attitude Frame- work** involves classifying individuals into four groups based on their risk perceptions and self-efficacy beliefs:
 1. *Responsive* (high risk, strong efficacy)
 2. *Avoidant* (high risk, weak efficacy)
 3. *Proactive* (low risk, strong efficacy)
 4. *Indifferent* (low risk, weak efficacy)
-

APPLICATIONS TO POLITICS

- To inform typology development, campaign organizations and political data management firms regularly buy and trade personal information about prospective voters.
 - Advances in phone and computer technology have transformed elections by allowing campaigns to collect unprecedented amounts of personal information about potential voters and their likely support for each candidate, and to pinpoint messages and advertisements using SMS and ads tied to social media and search engines.
 - A recent survey indicated that 86% of Americans were opposed to having political advertisements tailored to their interests.
-

APPLICATIONS TO CLIMATE CHANGE

- Most climate change segmentation studies have been conducted using surveys and large national samples, with the aim of identifying groups that share similar beliefs, attitudes, and behaviors related to climate change.
 - *The Yale Project on Climate Change Communication*
 - Under the leadership of Anthony Leiserowitz and Edward Maibach. The group used 36 variables assessing climate change beliefs, issue involvement, policy preference, and behavioral responses to segment a nationally representative sample of 2164 U.S. residents.
 - Six distinctive segments, collectively labeled the *Six Americas*, emerged which reflected quantitative shifts from generally high to generally low levels of concern, issue engagement, and degree of certainty that global warming was occurring: *Alarmed*, *Concerned*, *Cautious*, *Disengaged*, *Doubtful*, and *Dismissive*.
-

APPLICATIONS TO CLIMATE CHANGE (CONTINUED)

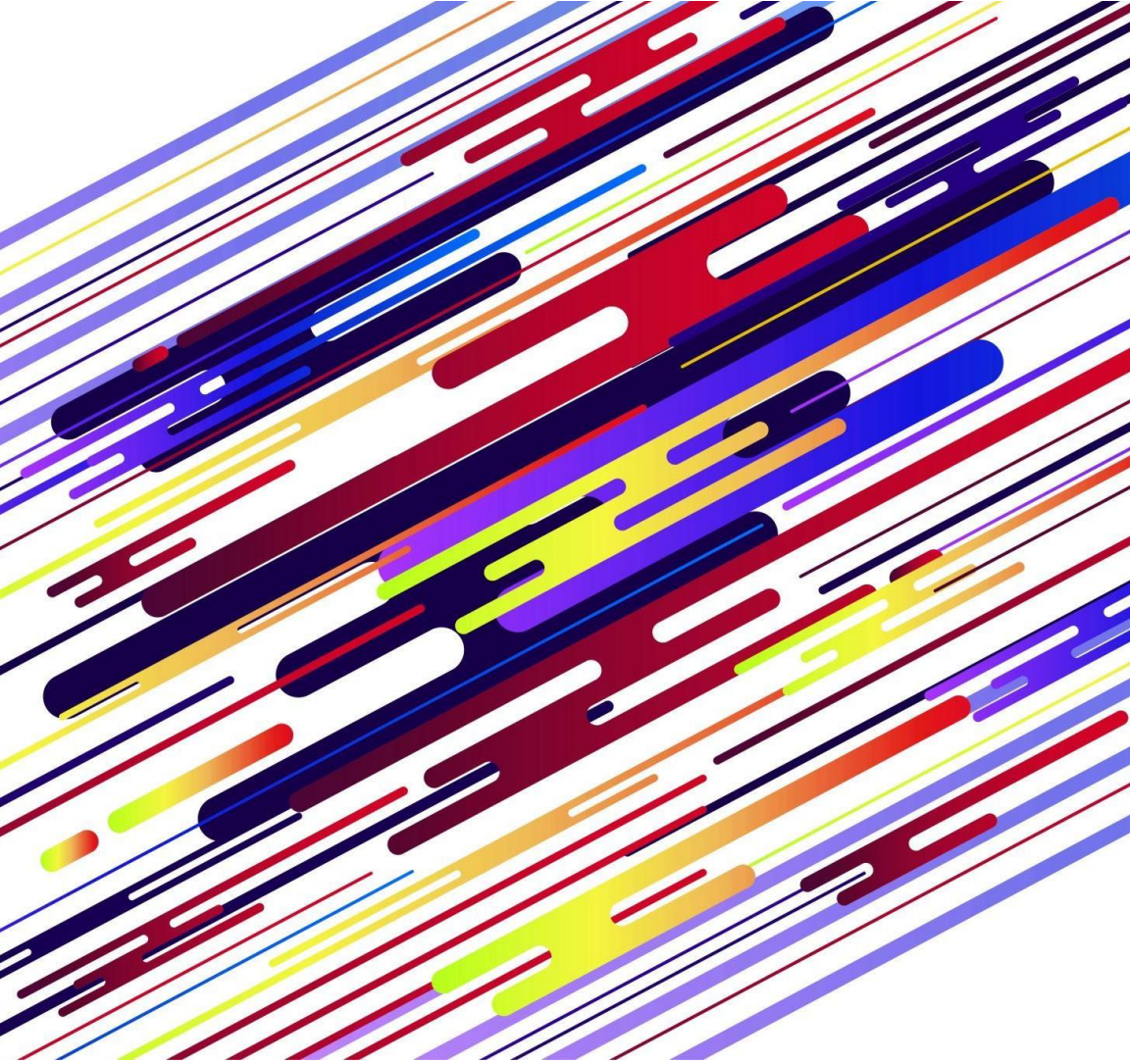
- Variations of the Yale group's measures and methodology also have been applied to large national samples in Australia and India:
 - It was found that Australians in their sample were less polarized in their climate change attitudes and behaviors than their U.S. counterparts, with fewer respondents classified as *Alarmed* or *Concerned* and more classified in the more moderate *Cautious* and *Disengaged* groups.
 - In a recent study conducted in India using a subset of their original measures, the Yale group identified six segments: *Informed*, *Experienced*, *Undecided*, *Unconcerned*, *Indifferent*, and *Disengaged*. They found that the proportion of *Disengaged* respondents was considerably higher in rural settings (19%) than in urban settings (10%).
 - The British Broadcasting Corporation (BBC) has completed a series of large climate change segmentation studies:
 - Researchers conducted interviews with over 33,000 urban and rural residents from China, Indonesia, Nepal, Bangladesh, Vietnam, Pakistan, and India.
 - Responses to five measures assessing perceived impact of climate change, barriers related to information and resources, community cooperation, likelihood to take action in response to future changes, and current behavioral responses were subjected to a cluster analysis which identified five segments: *Surviving*, *Struggling*, *Adapting*, *Willing*, and *Unaffected*
-

APPLICATIONS TO CLIMATE CHANGE (CONTINUED)

- Studies that empirically examined how specific audience segments responded to different types of climate change communications and interventions reported evidence to suggest that messages framed in terms of national security may *boomerang* by eliciting anger from members of their *Doubtful* and *Dismissive* segments.
 - **Hine** found that individuals who were uncommitted in their beliefs about climate change responded more favorably to messages with strong emotional content and a loss prevention focus, whereas those who were alarmed by climate change favored messages that focused on local issues and had a collectivist frame.
 - **Bain** showed that *Climate Change Deniers* were more receptive to pro-environmental messages framed in terms of social welfare and economic development as opposed to avoiding the risks of climate change.
 - **Kahan** demonstrated that individuals' preferences for different types of social organization, as reflected in their cultural cognitions, were an important determinant of how they interpreted information provided by climate change experts.
-

APPLICATIONS TO CLIMATE CHANGE (CONTINUED)

- Using the **DEFRA** segmentation framework, **Horton** and **Doran** reported that targeting individuals' beliefs about fairness related to sustainable consumption and climate change could facilitate shifts between the segments.
 - In a cross-cultural, multi-method study involving respondents from the UK and Italy, **Lorenzoni** and **Hulme** used a prescreening survey and factor analysis to create a climate change typology consisting of four groups: *Deniers*, *Doubters*, *Uninterested*, and *Engaged*.
 - They found that presenting scenarios about future socioeconomic and climate change impacts elicited considerable deliberation in all groups, but the scenarios did not generally produce changes in group members' original views.
-



HEALTH AUDIENCE SEGMENTATION

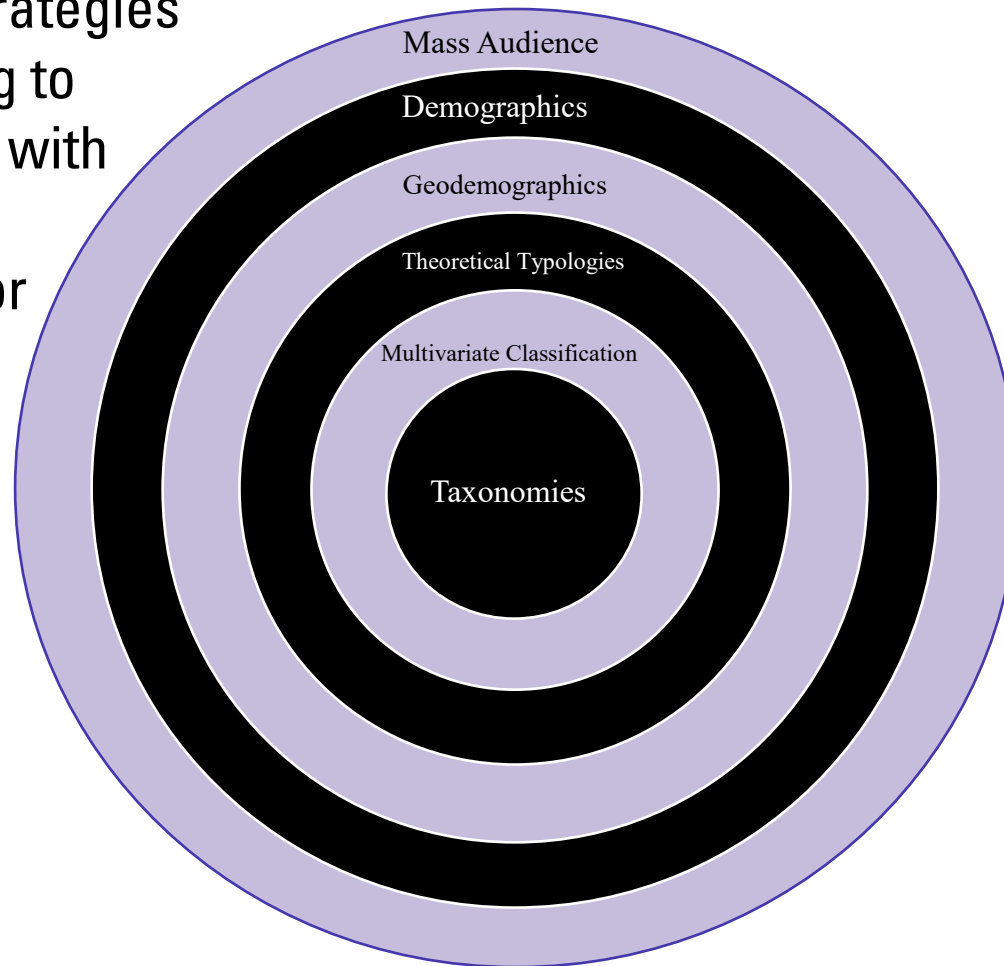
DEFINING AUDIENCE SEGMENTATION

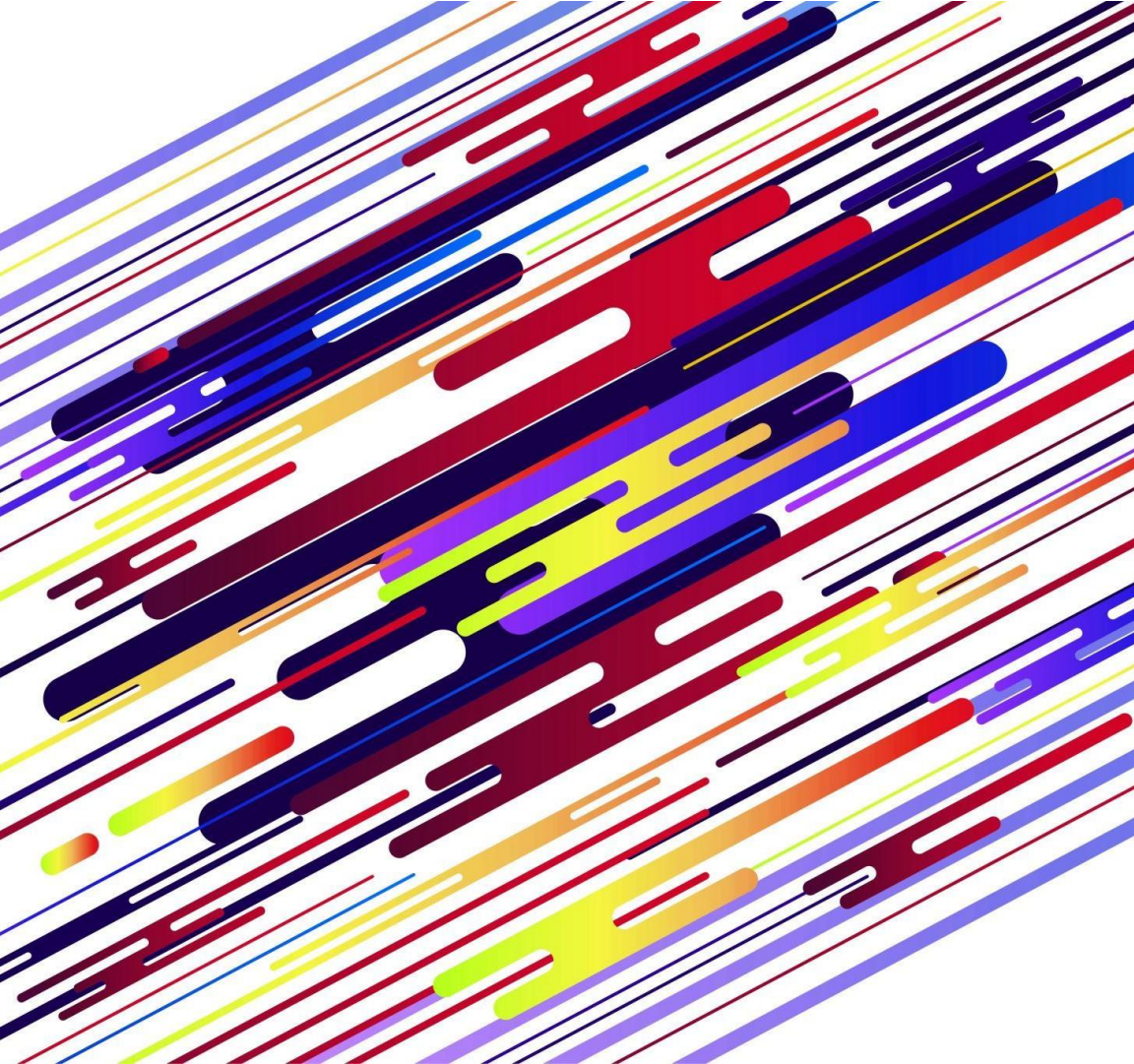
- The term *segmentation* was introduced in the marketing field by Wendell Smith (1956). He pointed out that marketers typically increased market share by product differentiation—attempting to increase demand by creating a supply of a product unique in some respect.
 - Smith advocated, instead, market segmentation—identifying promising subgroups of consumers, learning what their needs and desires were, and developing products tailored to those sub-groups.
 - Marketing and promotion efforts could generate a higher return by creating products and promotions tailored to the desired segment.
 - **Effectiveness** and **efficiency** are defined with respect to intended communication outcomes: typically, to change levels of knowledge or concern about some topic or to shift valence or increase accessibility of relevant attitudes and ultimately to reshape behaviors, such as dietary patterns, sexual practices, or substance use.
 - **The basic idea of segmentation is simple: divide a population, market, or audience into groups whose members are more like each other than members of other segments.**
 - In general, segments must be definable, mutually exclusive, measurable, accessible, pertinent to an organization's mission, reachable with communication in an affordable way, and large enough to be substantial and to service economically.
-

SEGMENTATION METHODS

- The broad array of strategies and methods used to segment audiences including...
 - Demographics
 - surveys in which demographics are cross-tabbed with media use
 - key psychosocial variables such as involvement and behavior, focus group discussions with key target groups, and commercially available segmentation schemes such as Values and Lifestyles (VALS)
 - ...have led to characterizations of segmentation as being more art than science.
 - There are clear conceptual distinctions and implicit hierarchies in segmentation strategies (see next slide)
-

Segmentation strategies
nested according to
correspondence with
determinants of
target attitudes or
behaviors.





DEFINE YOUR
AUDIENCES

AUDIENCE ANALYSIS

- Important because the receiver may be influenced by:
 - The content of the campaign
 - The type of communication channels employed
 - The sources of the message
 - The overall communication campaign itself
 - Audience diversity: helps campaign strategists understand the cultural, demographic and individual characteristics that vary among audiences
 - Cultural diversity: helps to understand cultural dimensions of the audience such as power distance, masculinity vs. femininity, collectivism vs. Individualism, etc.
 - Demographic diversity: age, gender, race, socioeconomic status, religion, occupation, language, etc.
 - Individual diversity: belief systems, values, attitudes, knowledge, self-drives, expectations, needs, etc.
-

AUDIENCE BELIEFS

- Beliefs are cognition about the universe – subjective prospects that an object has a certain attribute, or an action will result in a specific outcome
 - There are 5 types of beliefs:
 - Descriptive: perceptions or hypotheses about environment we live in.
 - Prescriptive: principles that reflect interpretations of preferred end-states, reflect our preferences and worldviews
 - Core:
 - Type A: learned through direct contact with object of belief and reinforced through social consensus
 - Type B: grounded in direct experience, unlikely to change
 - Central: Come directly or indirectly from authority
 - Type C: authority beliefs (ex. Bible or Torah)
 - Type D: based on authority figure's beliefs (ex. What Pope or Rabbi says)
 - Peripheral
 - Type E: least important, most likely to change
-

AUDIENCE VALUES

- **Values:** our most cherished beliefs about right and wrong
 - Audience will determine their position on an issue based on their values
 - Always ask the question: **"Is the attitude in harmony with the audience's values?"**
-

AUDIENCE NEEDS

- **Deficiency needs:** fundamental humans needs that must be fulfilled before higher-order needs
 - Health, safety, survival, love, belongingness, social esteem
 - **Growth needs:** higher-order human needs
 - Self-actualization, knowledge, awareness, aesthetic needs
 - **Human needs theory:** people turn to violence when their fundamental human needs are not sufficiently met, totally declined or taken away
-

AUDIENCE ADAPTATION

- Process of tailoring a public communication campaign to the diversity, beliefs, values and needs of the audience
 - Separate people into subgroups
 - Typically use race, age, and other demographics as the benchmark for identifying dissimilar subgroups
 - Recurring behavior, potential intentions, willingness to change, product loyalty, and/or psychographics (e.g., lifestyles, values , personalities)
 - Campaign designers will divide the audience into meaningful segments on the basis of key characteristics, experience with the behavior and personality traits
-

AUDIENCE ADAPTATION (CONTINUED)

- Failure to engage in group segmentation is believed to be a major reason for failed campaigns in the past!
 - Audiences can change during the course of the campaign:
 - Folic Acid Campaign
 - Employed a stage-market segmentation strategy
 - Expanded its audience segments in gradual steps, progressively including all women who could bear children and focusing on the most at-risk ones.
-

AUDIENCE PERCEPTION

- Phenomenon whereby the public filters and construes information from the five senses to conceive a meaningful picture of the environment in which they live.
 - Message receivers decipher communication after it has been absorbed through their filter of senses, attention and general experience.
 - Perceived control: increases a person's assessment of the controllability of a situation to bring out the necessary coping strategy.
 - Perceptions of self-efficacy: confidence in one's own capacity to realize a behavior outcome
 - Good at predicting behavior
 - Perceptions of effectiveness: evaluations of the usefulness of actions
 - Ex: In regards to solving global environmental issues, people may consider their own sustainable actions as only a very small amount compared to what is expected.
-

SEGMENTATION: STATISTICAL METHODS OVERVIEW

- Factor analysis (to reduce data before cluster analysis).
- Cluster analysis to form segments.
- Discriminant analysis to describe segments.



CLUSTER ANALYSIS FOR SEGMENTING MARKETS

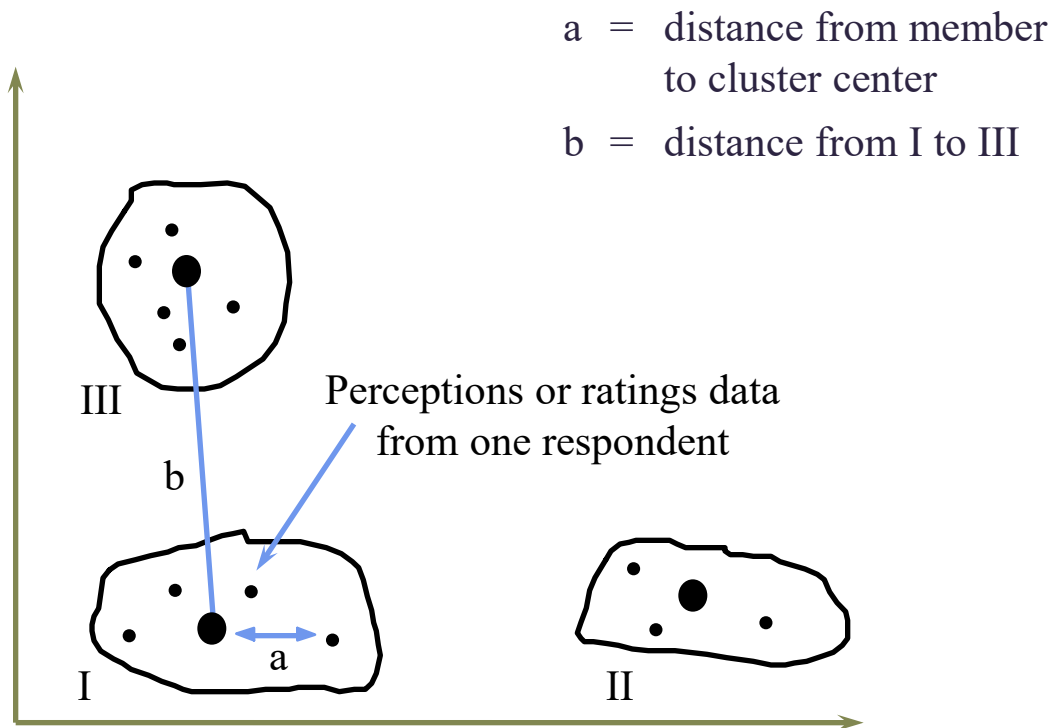
- Define a measure to assess the similarity of customers on the basis of their needs.
 - Group customers with similar needs. Recommend: the “Ward’s minimum variance criterion” and, as an option, the K-Means algorithm for doing this.
 - Select the number of segments using numeric and strategic criteria, and your judgment.
 - Profile the needs of the selected segments (e.g., using cluster means).
-

CLUSTER ANALYSIS ISSUES

- Defining a measure of similarity (or distance) between segments.
 - Identifying “outliers.”
 - Selecting a clustering procedure
 - Hierarchical clustering (e.g., Single linkage, average linkage, and minimum variance methods)
 - Partitioning methods (e.g., K-Means)
 - Cluster profiling
 - Univariate analysis
 - Multiple discriminant analysis
-

DOING CLUSTER ANALYSIS

Dimension 2



Dimension 1

DISCRIMINANT ANALYSIS FOR DESCRIBING MARKET SEGMENTS

- Identify a set of “observable” variables that helps you to understand how to reach and serve the needs of selected clusters.
 - Use discriminant analysis to identify underlying dimensions (axes) that maximally differentiate between the selected clusters.
-

INTERPRETING DISCRIMINANT ANALYSIS RESULTS

- What proportion of the total variance in the descriptor data is explained by the statistically significant discriminant axes?
 - Does the model have good predictability (“hit rate”) in each cluster?
 - Can you identify good descriptors to find differences between clusters? (Examine correlations between discriminant axes and each descriptor variable).
-

INTERPRETING CLUSTER ANALYSIS RESULTS

1. Select the appropriate number of clusters

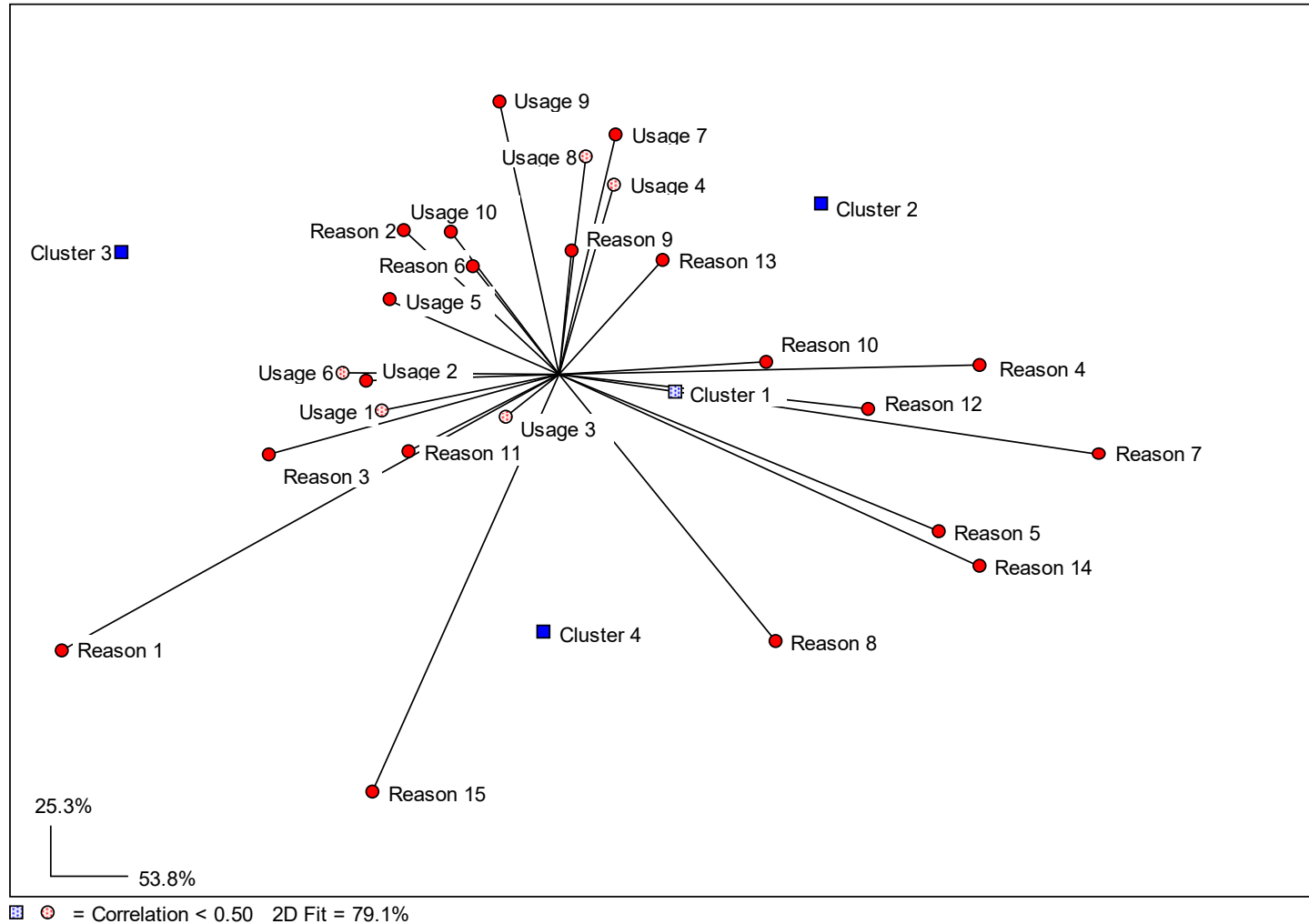
- Are the bases variables highly correlated? (Should we reduce the data through factor analysis before clustering?)
- Are the clusters separated well from each other?
- Should we combine or separate the clusters?
- Can you come up with descriptive names for each cluster (eg, professionals, techno-savvy, etc.)?

2. Segment the market independently of your ability to reach the segments (i.e., separately evaluate segmentation and discriminant analysis results).

CORRESPONDENCE ANALYSIS

- Provides a graphical summary of the interactions in a table
 - Also known as a perceptual map
 - But so are many other charts
 - Can be very useful
 - e.g. to provide overview of cluster results
 - However, the correct interpretation is less than intuitive, and this leads many researchers astray
-

Four Clusters (imputed, normalised)



INTERPRETATION

- Correspondence analysis plots should be interpreted by looking at points relative to the origin
 - Points that are in similar directions are positively associated
 - Points that are on opposite sides of the origin are negatively associated
 - Points that are far from the origin exhibit the strongest associations
 - Also the results reflect relative associations, not just which rows are highest or lowest overall
-

TANDEM SEGMENTATION

- One general method is to conduct a factor analysis, followed by a cluster analysis
 - This approach has been criticized for losing information and not yielding as much discrimination as cluster analysis alone
 - However it can make it easier to design the distance function, and to interpret the results
-

TANDEM K-MEANS EXAMPLE

```
proc factor data=datafile n=6 rotate=varimax round reorder flag=.54 scree out=scores;  
  var reasons1-reasons15 usage1-usage10;  
run;
```

```
proc fastclus data=scores maxc=4 seed=109162319 maxiter=50;  
  var factor1-factor6;  
run;
```

- Have used the default unweighted Euclidean distance function, which is not sensible in every context
 - Also note that k -means results depend on the initial cluster centroids (determined here by the seed)
 - Typically k -means is very prone to local maxima
 - Run at least 20 times to ensure reasonable maximum
-

CLUSTER ANALYSIS OPTIONS

- There are several choices of how to form clusters in hierarchical cluster analysis
 - Single linkage
 - Average linkage
 - Density linkage
 - Ward's method
 - Many others
 - Ward's method (like k-means) tends to form equal sized, roundish clusters
 - Average linkage generally forms roundish clusters with equal variance
 - Density linkage can identify clusters of different shapes
-

CLUSTER ANALYSIS ISSUES

- Distance definition
 - Weighted Euclidean distance often works well, if weights are chosen intelligently
 - Cluster shape
 - Shape of clusters found is determined by method, so choose method appropriately
 - Hierarchical methods usually take more computation time than k -means
 - However multiple runs are more important for k -means, since it can be badly affected by local minima
 - Adjusting for response styles can also be worthwhile
 - Some people give more positive responses overall than others
 - Clusters may simply reflect these response styles unless this is adjusted for, e.g. by standardizing responses across attributes for each respondent
-

HOWARD-HARRIS APPROACH

- Provides automatic approach to choosing seeds for k -means clustering
 - Chooses initial seeds by fixed procedure
 - Takes variable with highest variance, splits the data at the mean, and calculates centroids of the resulting two groups
 - Applies k -means with these centroids as initial seeds
 - This yields a 2 cluster solution
 - Choose the cluster with the higher within-cluster variance
 - Choose the variable with the highest variance within that cluster, split the cluster as above, and repeat to give a 3 cluster solution
 - Repeat until have reached a set number of clusters
 - I believe this approach is used by the ESPRI software package (after variables are standardised by their range)
-

ANOTHER “CLUSTERING” METHOD

- One alternative approach to identifying clusters is to fit a finite mixture model
 - Assume the overall distribution is a mixture of several normal distributions
 - Typically this model is fit using some variant of the EM algorithm
 - E.g. `weka.clusterers.EM` method in WEKA data mining package
 - See WEKA tutorial for an example using Fisher’s iris data
 - Advantages of this method include:
 - Probability model allows for statistical tests
 - Handles missing data within model fitting process
 - Can extend this approach to define clusters based on model parameters, e.g. regression coefficients
 - Also known as latent class modeling
-

CHOICE MODELS

1. Observe choice:

(Buy/not buy => □direct marketers
Brand bought □□□ packaged goods, ABB)

2. Capture related data:

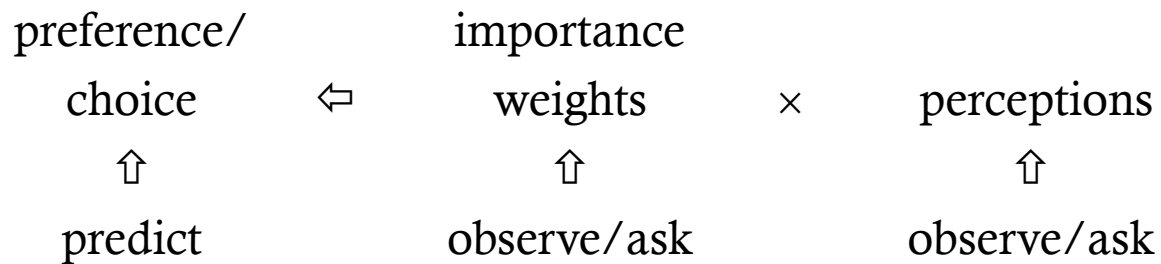
- demographics
- attitudes/perceptions
- market conditions (price, promotion, etc.)

3. Link

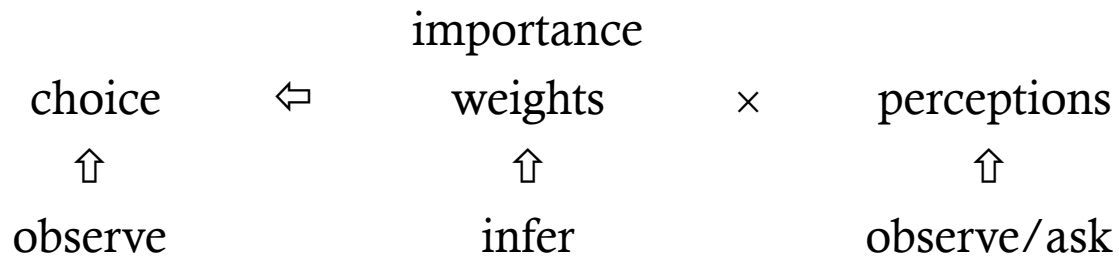
1 to 2 via “choice model” □□ model *reveals*
importance weights of characteristics

CHOICE MODELS VS SURVEYS

With *standard survey methods* . . .



But with *choice models* . . .



BEHAVIOR-BASED SEGMENTATION MODEL

Stage 1: Screen products using key attributes to identify the “consideration set of suppliers” for each type of customer.

Stage 2: Assume that customers (of each type) will choose suppliers to maximize their utility via a random utility model.

$$U_{ij} = V_{ij} + \varepsilon_{ij}$$

where:

U_{ij} = Utility that customer i has for supplier j 's product.

V_{ij} = Deterministic component of utility that is a function of product and supplier attributes.

ε_{ij} = An error term that reflects the non-deterministic component of utility.

SPECIFICATION OF THE DETERMINISTIC COMPONENT OF UTILITY

$$V_{ij} = \sum_k W_k b_{ijk}$$

where: i = an index to represent customers, j is an index to represent suppliers, and k is an index to represent attributes

b_{ijk} = i 's perception of attribute k for supplier j .

w_k = estimated coefficient to represent the impact of b_{ijk} on the utility realized for attribute k of supplier j for customer i .

A KEY RESULT FROM THIS SPECIFICATION:

THE MULTINOMIAL LOGIT (MNL) MODEL

If customer's past choices are assumed to reflect the principle of utility maximization and the error (ε_{ij}) has a specific form called double exponential, then:

$$p_{ij} = \frac{e^{V_{ij}}}{\sum_k e^{V_{ik}}}$$

where:

p_{ij} = probability that customer i chooses supplier j .

V_{ij} = estimated value of utility (ie, based on estimates of b_{ijk})
obtained from maximum likelihood estimation.

APPLYING THE MNL MODEL IN SEGMENTATION STUDIES

Key idea: Segment on the basis of
probability of choice—

1. Loyal to us
 2. Loyal to competitor
 3. Switchables:
loseable/winnable
customers
-

~~SWITCHABILITY SEGMENTATION~~

Loyal to Us	Losable
Winnable Customers (business to gain)	Loyal to Competitor

Current Product-Market by Switchability

Questions: Where should your marketing efforts be focused?
How can you segment the market this way?

USING CHOICE-BASED SEGMENTATION FOR DATABASE MARKETING

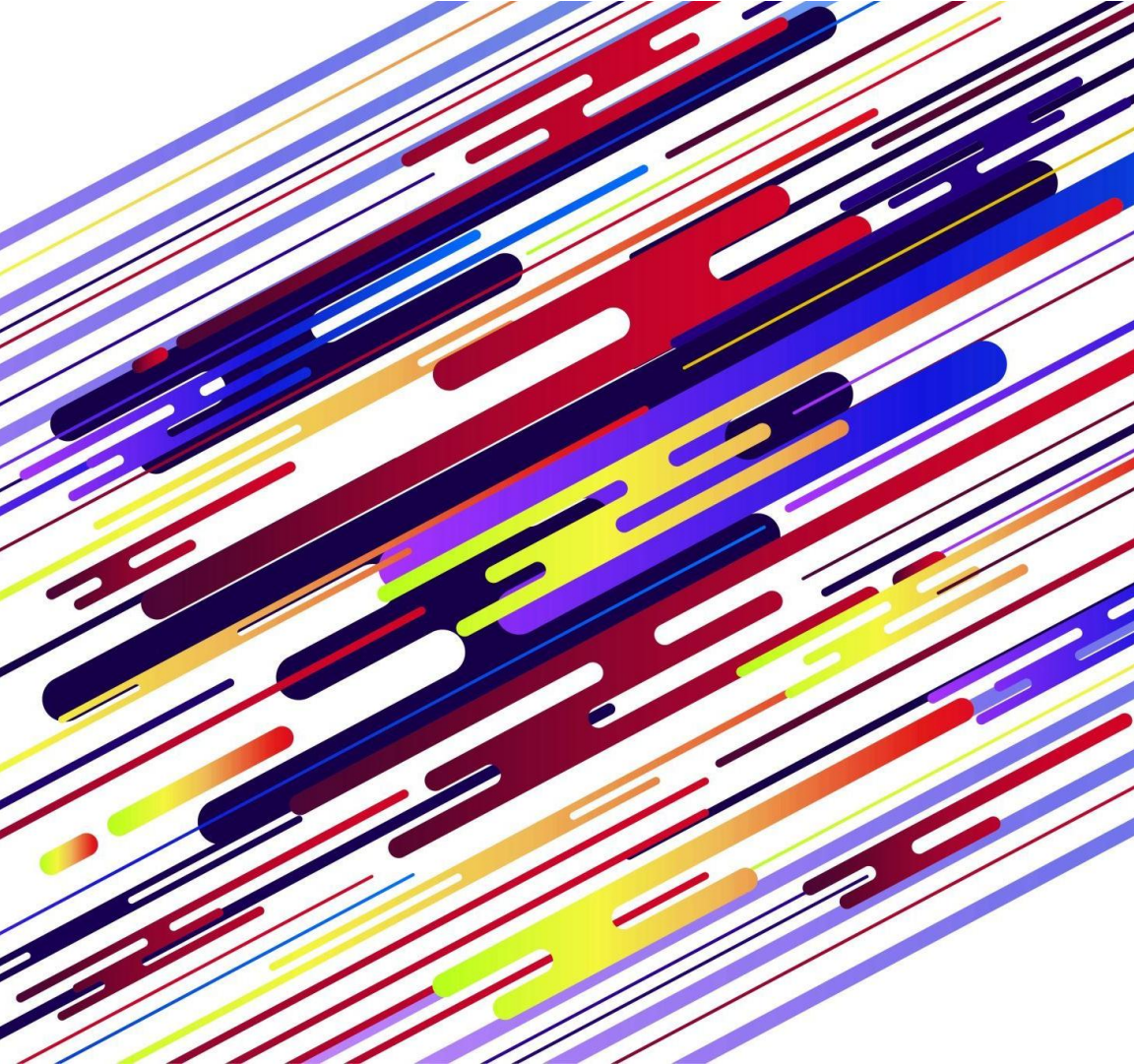
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Customer	Purchase Probability	Average Purchase Volume	Customer Margin	Profitability $= A \times B \times C$
1	30%	\$31.00	0.70	\$6.51
2	2%	\$143.00	0.60	\$1.72
3	10%	\$54.00	0.67	\$3.62
4	5%	\$88.00	0.62	\$2.73
5	60%	\$20.00	0.58	\$6.96
6	22%	\$60.00	0.47	\$6.20
7	11%	\$77.00	0.38	\$3.22
8	13%	\$39.00	0.66	\$3.35
9	1%	\$184.00	0.56	\$1.03
10	4%	\$72.00	0.65	\$1.87

MANAGERIAL USES OF SEGMENTATION ANALYSIS

- Select attractive segments for focused effort (Can use models such as Analytic Hierarchy Process or GE Planning Matrix).
 - Develop a marketing plan (4P's and positioning) to target selected segments.
 - In consumer markets, we typically rely on advertising and channel members to selectively reach targeted segments.
 - In business markets, we use sales force and direct marketing. You can use the results from the discriminant analysis to assign new customers to one of the segments.
-

CONCLUSION

- Use needs variables to segment markets.
 - Select segments taking into account both the attractiveness of segments and the strengths of the firm.
 - Use descriptor variables to develop a marketing plan to reach and serve chosen segments.
 - Develop mechanisms to implement the segmentation strategy on a routine basis (one way to do this is through information technology).
-



AUDIENCE SEGMENTATION & CLIMATE CHANGE COMMUNICATION

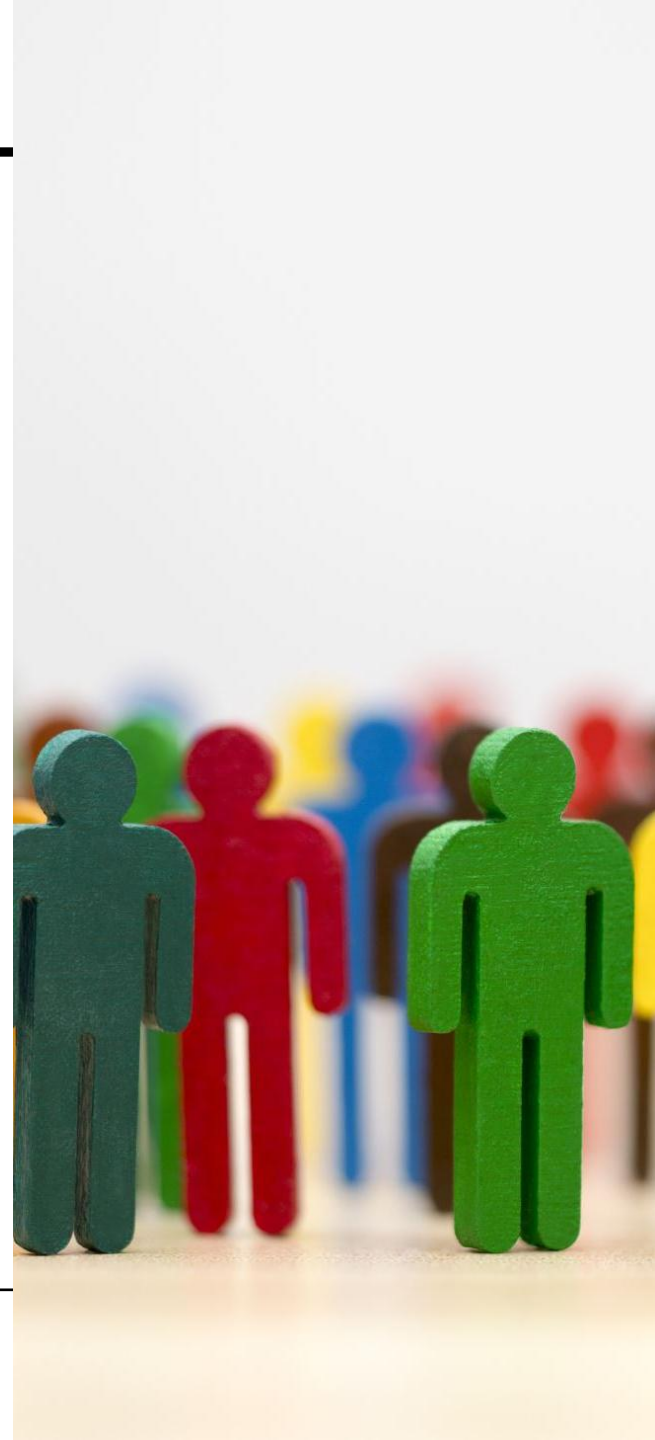
FOUND

VS.

CONSTRUCTED SEGMENTS

FOUND SEGMENTS

- Social marketers often present audience segmentation as a process by which homogenous groups are *found* using exploratory statistical techniques such as cluster analysis.
- The underlying assumption is that distinct groups exist and empirical methods can be used to discover them.



CONSTRUCTED SEGMENTS

- Segments inextricably tied to the theories and methods adopted by researchers.
 - It is widely accepted in social marketing circles that the outcome of segmentation analyses are dependent on the variables that analysts decide to include and exclude—decisions that are often guided by theoretical and practical considerations about the number of segments to retain for interpretation.

CHANGING AUDIENCE SEGMENTS

- Audience segments change in response to the delivery of tailored and targeted content or other external events, with new segments emerging, individuals moving between segments, and/or once prominent segments becoming extinct as public understanding evolves.
 - Audience segments *identified* within a population are largely by-products of choices made during the research process.
 - Audience segmentation is not *value neutral*: our choices of theories, constructs, measurement strategies, and interventions may have profound impacts on our segmentation solutions, segment labeling, and also on the individuals and communities that we study.
 - Communication specialists and policy makers should not assume that segments exist independently from the research process
-