

# Creating Surveys to Measure Performance and Assess Needs

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# Workshop Content

## Study Design

- Surveys uses
- Surveys compared to other designs
- Comparison of data collection modes
- Typical costs and timeframes

## Instrument Design

- Writing question stems
- Choosing response options
- Appropriate length
- Pilot-testing
- Cultural issues

## Survey Design and Implementation

## Data Collection

- Sampling
- Maximizing response
- Standard methods

## Reporting

- Audiences
- Modes
- Action planning

## Data Analysis

- Weighting data
- Descriptive statistics
- "Sophisticated statistics"
- Comparison data

# Study Design

# Common Evaluation Methods

- Hand-distributed, self-administered questionnaires (SAQs)/surveys
- Mailed surveys
- Web surveys
- Phone surveys
- In-person surveys
- Group surveys
- Audio computer-assisted self-interviewing
- Focus groups
- Observations
- Document studies

# Survey or Focus Group

| <b>Characteristic</b> | <b>Survey</b> | <b>Focus Group</b> |
|-----------------------|---------------|--------------------|
| <hr/>                 |               |                    |
| <b>Convenience</b>    |               |                    |
| Simplicity            | -             | +                  |
| Speed                 | -             | +                  |
| Cost                  | -             | +                  |
| <hr/>                 |               |                    |
| <b>Justice</b>        |               |                    |
| Range of voice        | +             | -                  |
| N participants        | +             | -                  |
| Representativeness    | +             | -                  |

# Common Uses of Surveys

- Needs assessments
- Performance monitoring/program evaluation
- Policy exploration/study
- Surveys can measure:
  - Knowledge
  - Attitudes
  - Intentions
  - Skills
  - Behaviors

# Instrument Design

# General Tips on Instrument Construction

- Keep it short
- Guarantee anonymity if possible
- Put sensitive questions at the end (including demographics)
- Keep mailed/Web surveys attractive

# Benefits of Using Existing Tools

- It saves time
- The tool has been pilot-tested
- The tool may be validated
- The data from other programs can be used as control or reference data
- Other types of useful data can be identified

# Writing Questions

- Stay neutral
- Be specific and clear
- Focus on one topic per question
- Consider order effects
- Avoid false assumptions
- Be concise
- Consider social desirability bias

# Choosing Response Options

## Open-Ended

Do you eat a healthy diet?

## Fixed Response

On a typical day, about how many more servings of fruit do you eat?

- None
- One
- Two
- Three
- Four or more

# Tips for Developing Response Options

- Avoid overlapping categories
- Use option symmetry unless significant social desirability bias
- Cover all response options
- Be cautious of possible response effects order
- Use specific time and frequency wording
- 4 or 5 point scales are often the best

# Choosing Response Options

- Agreement scales
- Quality scales
- Importance scales
- Frequency scales
- Likelihood scales
- Amount scales
- Change scales
- Skill/knowledge attainment scales
- Multiple response scales

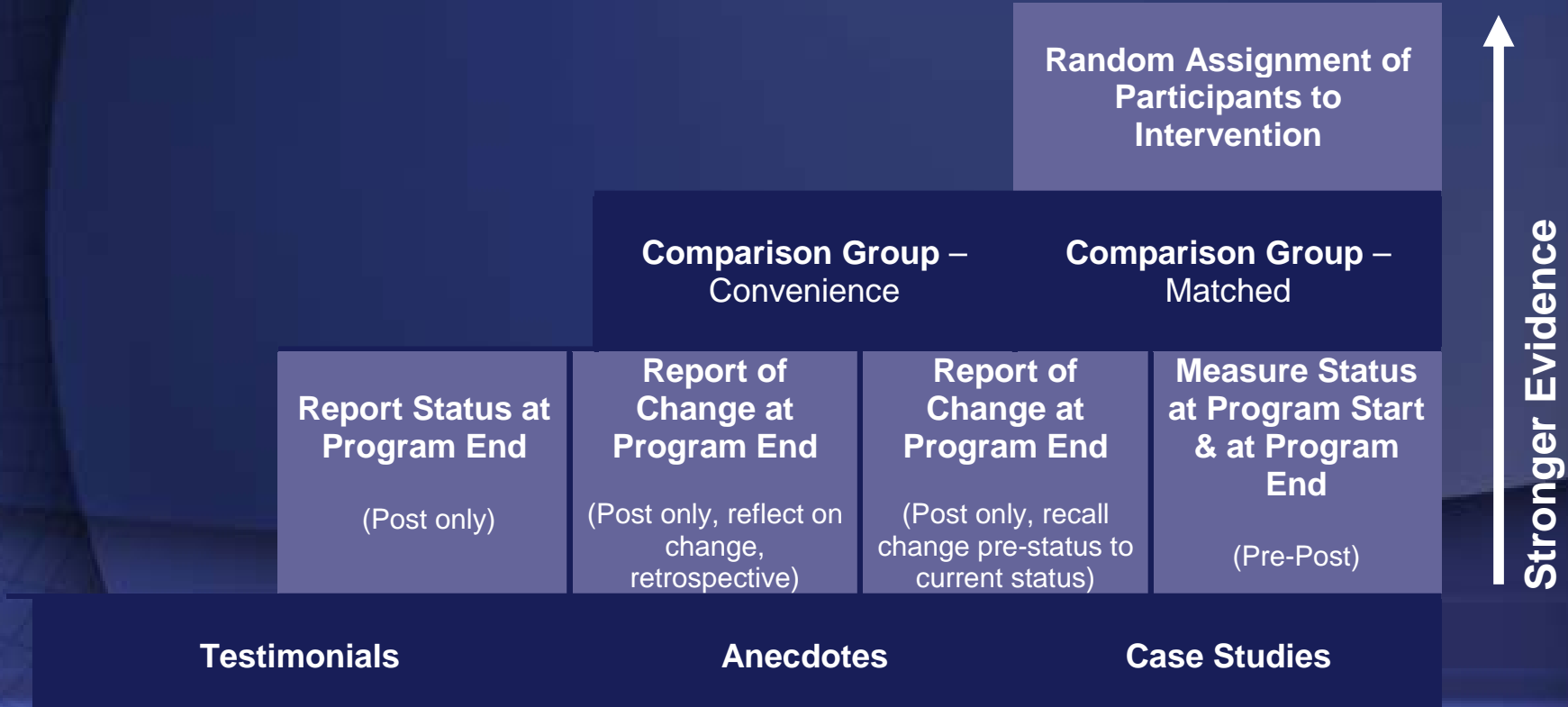
# Designing Culturally Responsive, Age-Appropriate Tools

- Make decisions collectively
- Pilot-test your tools
- Adapt tools as appropriate

# Measuring Change

## **Repeated Measures**

# Evaluation Designs: The (stair) Case for Program Impacts



# Ways of Measuring Change

- Change pre to post  
[Self-report improvement (retrospective)]
- Pre status and post status  
[Recalled pre-status compared to current status (post)]
- Measure status at program start and at program end [Pre-post measures]

# Post-Only versus Pre-Post

## Pre & Post Question:

Yesterday, how many fruits and vegetables did you eat?

## Post Only Question:

Because I have participated in this program, I now eat more fruits and vegetables.

# Pre-Post Design Issues

- Attribution of change
- Posturing
- Knowledge
- Annoyance factor
- Difficulty in constructing
- Anonymity
- Attrition
- Sensitivity to change

# Post-Only Design Issues

- Recall bias
- Social desirability
- Hard to disentangle

# Exercise #1 Trash the Survey

# Data Collection

# Comparison of Survey Administration Methods

**Comparison of Administration Methods for General Population Surveys\***

| <b>Issue</b>   | <b>Mail</b>            | <b>Phone</b>         | <b>Personal Interview†</b> | <b>Web</b>       |
|--|------------------------|----------------------|----------------------------|------------------|
| Expense per completed survey                             | Moderately inexpensive | Moderately expensive | Very expensive             | Very inexpensive |
| Speed of administration                                  | Moderately slow        | Moderately fast      | Moderately fast            | Moderately fast  |
| Typical response rate                                    | Excellent              | Fair                 | Good                       | Poor             |
| Ability to obtain candid responses                       | Excellent              | Fair                 | Poor                       | Excellent        |
| Elimination of interviewer bias                          | Excellent              | Fair                 | Poor                       | Excellent        |
| Ability to get at in-depth topics                        | Good                   | Good                 | Poor                       | Fair             |
| Use of visual aids                                       | Good                   | Poor                 | Excellent                  | Good             |
| Enforcement of question order                            | Poor                   | Excellent            | Excellent                  | Good             |
| Inclusion of illiterate respondents                      | Poor                   | Good                 | Excellent                  | Poor             |
| Inclusion of young adults                                | Poor                   | Poor                 | Good                       | Fair             |
| Inclusion of respondents of lower socioeconomic status   | Fair                   | Fair                 | Good                       | Poor             |
| Access to respondents from specific geographic locations | Excellent              | Poor                 | Excellent                  | Poor             |

# Typical Costs for Surveys by Mode

- Mail
  - 400 completes: \$15K
  - 1,000 completes: \$21K
- Phone
  - 400 completes: \$20K
  - 1,000 completes: \$25K
- Web: \$8K

# Typical time frames

## Approximate time needed by task

| Survey method | Inst design | Survey/sample prep | Data collection | Prep for analysis | Data analysis and report |
|---------------|-------------|--------------------|-----------------|-------------------|--------------------------|
| Phone         | 2-4 weeks   | 1 week             | 2 weeks         | 1-2 days          | 2-4 weeks                |
| Mail          | 2-4 weeks   | 2-3 weeks          | 4 weeks         | 2-3 weeks         | 2-4 weeks                |
| Web           | 2-4 weeks   | Varies             | 2-3 weeks       | > 1 day           | 2-4 weeks                |
| In-person     | 2-4 weeks   | 1 week             | 4 weeks         | 2-3 weeks         | 2-4 weeks                |

# Issues with Phone Data Collection

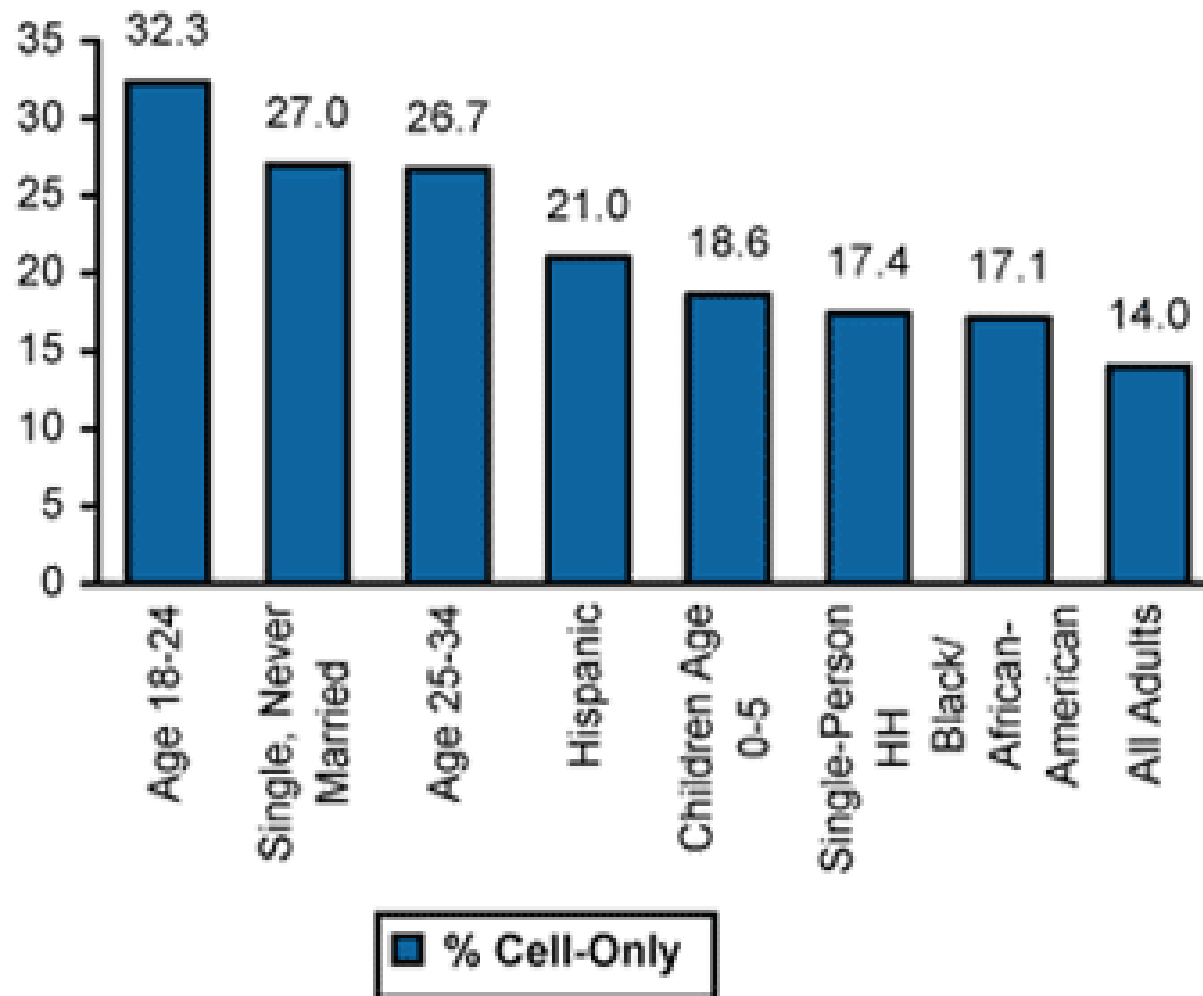
- Plummeting response rates
- Difficulty to target by geography
- More prone to social desirability bias
- Annoyance factor

# Cell Phones and Surveys

- 21% of US population is cell-phone only\*
- Minority and younger adults over-represented
- Numbers are not always geographically based
- Compensation (minutes used)
- Safety issues
- Annoyance factor
- Confidentiality factor

\*[http://www.knowledgenetworks.com/news/releases/2009/032609\\_address-based.html](http://www.knowledgenetworks.com/news/releases/2009/032609_address-based.html) – a press release from March, 2009

### Demographic Groups Most Likely To Live in Cell-Only Households



Source: Mediamark Research Inc. Survey of the American Consumer (Wave 56)

# Do settle on phone if...

- Your primary audience is captive or has strong connection to sponsor
- Your primary audiences expect or trust phone surveys most.
- Your target population has a high rate of illiteracy in English or a different native language.
- You must have results quickly.
- You must control question order so that later questions don't influence answers to earlier questions.

# Web Surveys

- Ideal Conditions
  - Captive populations
  - Organizations, affiliations
  - Access to computers/email
- It helps to...
  - Use multiple modes
  - Use multiple contacts
  - Have a topic of wide interest

# Web Samples

- Used to augment hard-to-reach samples using other modes (e.g., young Hispanics)
- Study of young people Web vs. phone
  - Less involved in civic engagement activities
  - More partisan
  - More liberal
  - Attended church less
  - More middle class
  - Parent education higher
  - More likely to be college educated
  - More likely to know someone who is gay

# How many to survey

## Sample Size

## Margin of Error

|       |       |      |
|-------|-------|------|
| 100   | ----- | 10%  |
| 300   | ----- | 5 ½% |
| 400   | ----- | 5%   |
| 800   | ----- | 3 ½% |
| 1,000 | ----- | 3%   |
| 1,500 | ----- | 2 ½% |

# How many to sample

## Contact Method

## Rule of Thumb

|           |                        |
|-----------|------------------------|
| Mail      | # of responses x 3     |
| Phone     | # of responses x 10    |
| In-person | # of responses x 1.5   |
| Web       | varies based on sample |

# Exercise #2 Design the Survey

# Selecting respondents: individuals within households

- Even if the household is randomly selected, can have bias within the household
  - Sedentary people
  - Unemployed/retired people
- “Birthday Method”

# Maximizing Response

- Mailed survey
- First class pre-sorted mail, postage-paid return envelope
- Multi-contact, multi-wave method
- Maximum leverage of social cues: reciprocation, consistency, social validation, authority, liking, scarcity, anonymity
- Low burden survey design
- Over-sampling respondents less likely to participate
- Survey publicity
- Incentives?

# Incentives: The Token of Appreciation

- Token cash or checks work best
  - as little as \$1
  - Increasing \$ increases response, but not proportionally
  - Biggest lift when topic interest or sponsor affinity low
- Stamped reply envelope works in same way
- Non-cash tokens weaker
- Stronger effects in mail than in interviewer mediated methods

# Write a strong cover letter

- ID who you are
- Tell use(s)
- Tell importance of participation
- Tell who should respond
- Offer foreign language option
- Express gratitude
- End with signature of important person

# Breaking through the Clutter

- Use sponsoring organizations letterhead/envelopes
- Personalize letters
- Date letters
- Real signature
- Typed addressed
- (not labels or window envelopes)
- Outgoing postage stamped not metered
- First class postage (not bulk)

# Data Analysis

# Weighting Survey Data

- Profile of population
  - 78% White
  - 25% College degree
  - 15% Over 65 years old
  - 65% Owners
  - 10% Latino
- Profile of survey sample
  - 88% White
  - 30% College degree
  - 20% Over 65 years old
  - 80% Owners
  - 5% Latino

$$\text{Weight for owners} = 65/80 = 0.81$$

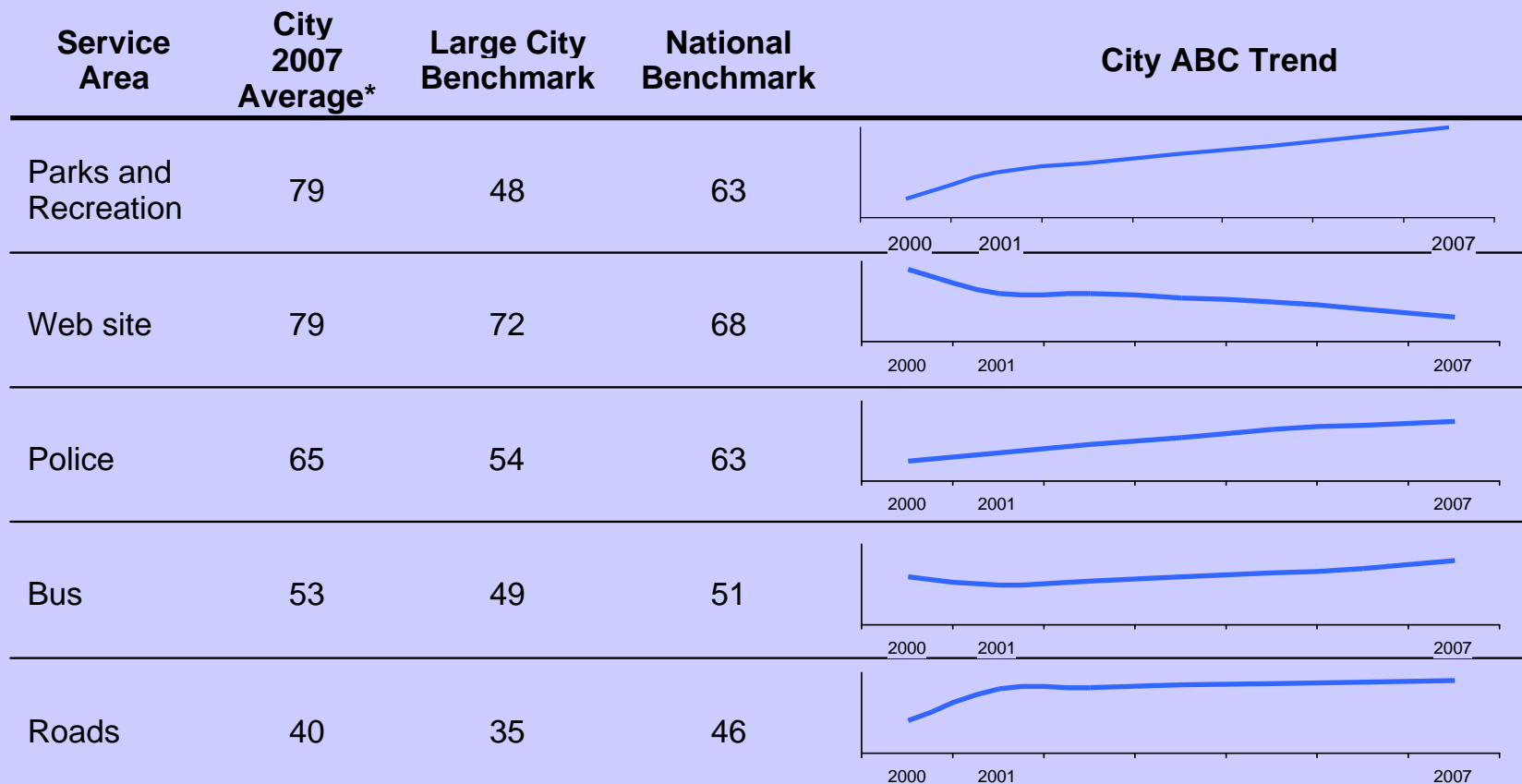
# Common Descriptive Statistics Used in Survey Research

| Statistic  | Example   |
|--|---|
| <b><u>Counts</u> (Number of respondents)</b>               | <b>20 students increased their knowledge of healthful eating</b>    |
| <b><u>Percentages</u> (Percent of respondents)</b>         | <b>60% of youth increased their knowledge of healthful eating</b>   |
| <b><u>Means</u> (Average rating/score of participants)</b> | <b>Youth scored an average of 5 points higher on nutrition test</b> |

# Methods to Make Survey Data More Actionable

- Trend line analysis
- Benchmarking
- Demographic crosstabulations
- Market segmentation (cluster analysis)
- Performance-importance mapping
- Key-driver analysis

# City ABC Results: Benchmarking and Trend Line Analysis



\* Average rating (0=poor, 33=fair, 67=good, 100=excellent)

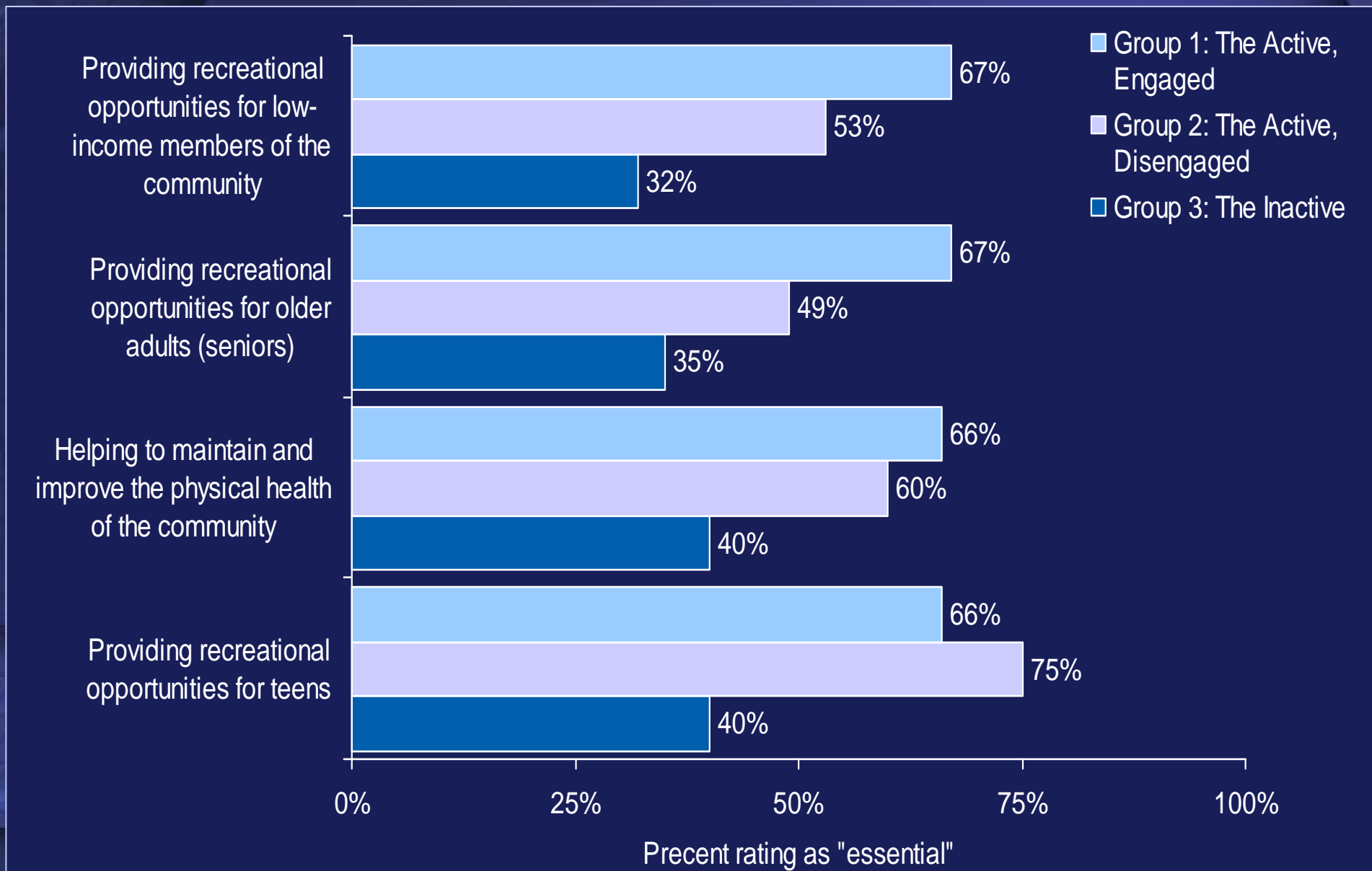
# Responses by Resident Sub-group

Figure 1: Quality of Service Ratings by Sociodemographic Characteristics

|                               | Male | Female | White | Black | Asian | Other | Hispanic | Not Hispanic |
|-------------------------------|------|--------|-------|-------|-------|-------|----------|--------------|
| Services to youth             | 77   | 74     | 67    | 66    | 65    | 68    | 84       | 87           |
| Services to low-income people | 85   | 89     | 74    | 70    | 75    | 84    | 72       | 74           |
| Services to seniors           | 71   | 74     | 67    | 76    | 68    | 77    | 88       | 83           |
| Public library services       | 89   | 81     | 69    | 71    | 68    | 68    | 88       | 88           |
| Municipal courts              | 68   | 75     | 69    | 67    | 66    | 66    | 73       | 74           |

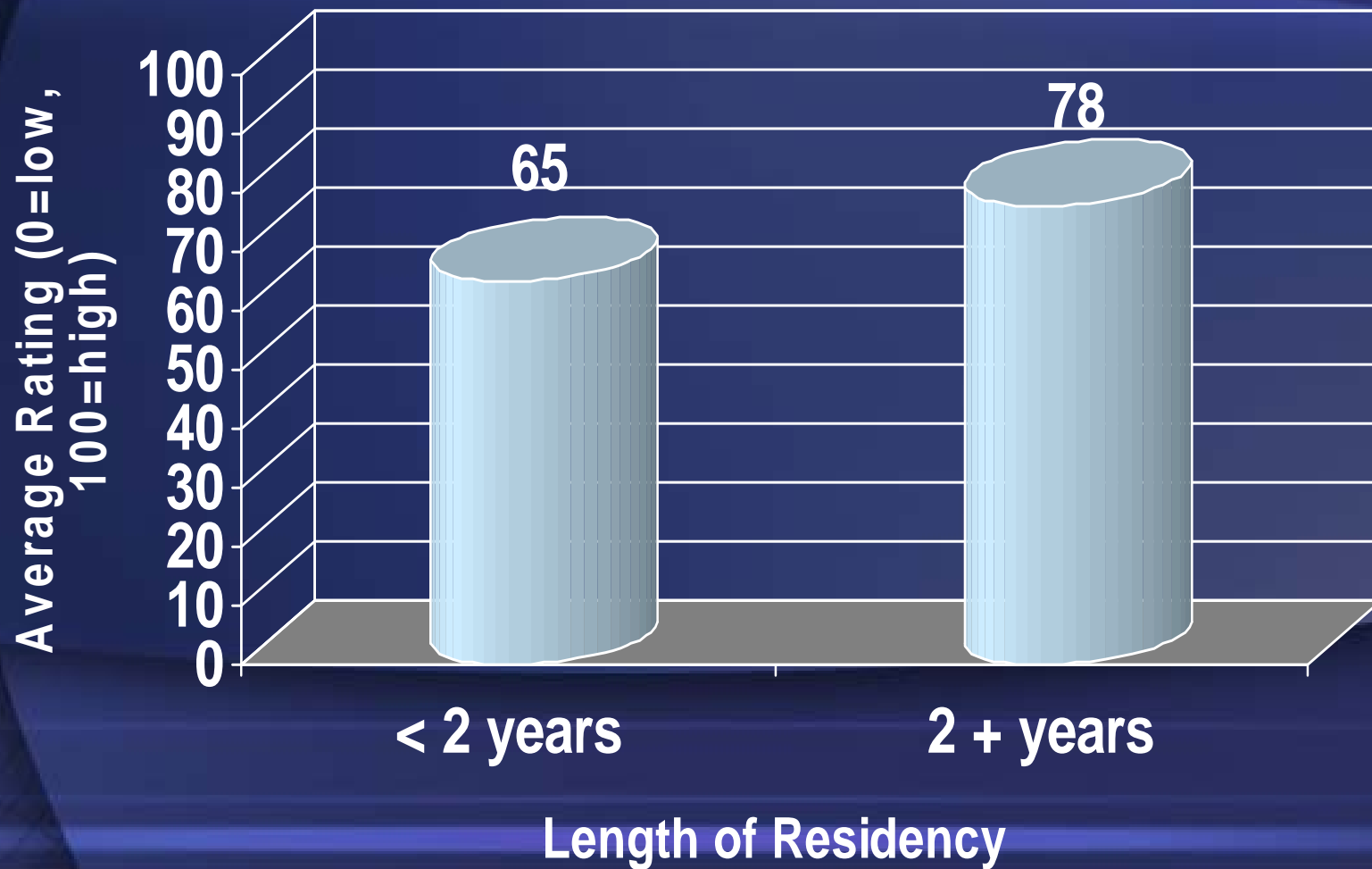
Average rating on a 100-point scale (0=poor, 100=excellent)  
 Cells shaded grey indicate statistically significant differences.

# Importance Ratings by Market Segment

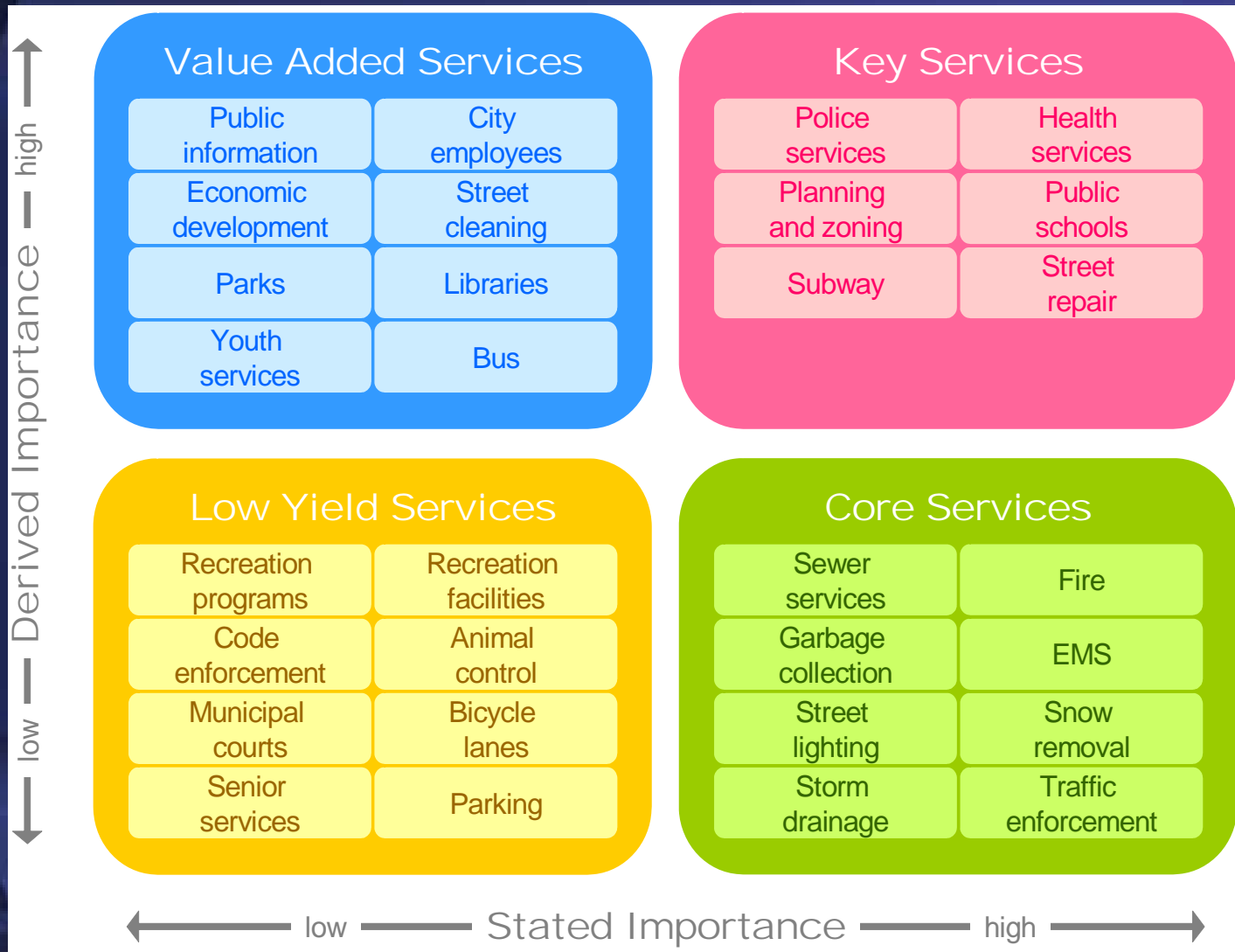


# Comparison Across Participant Groups

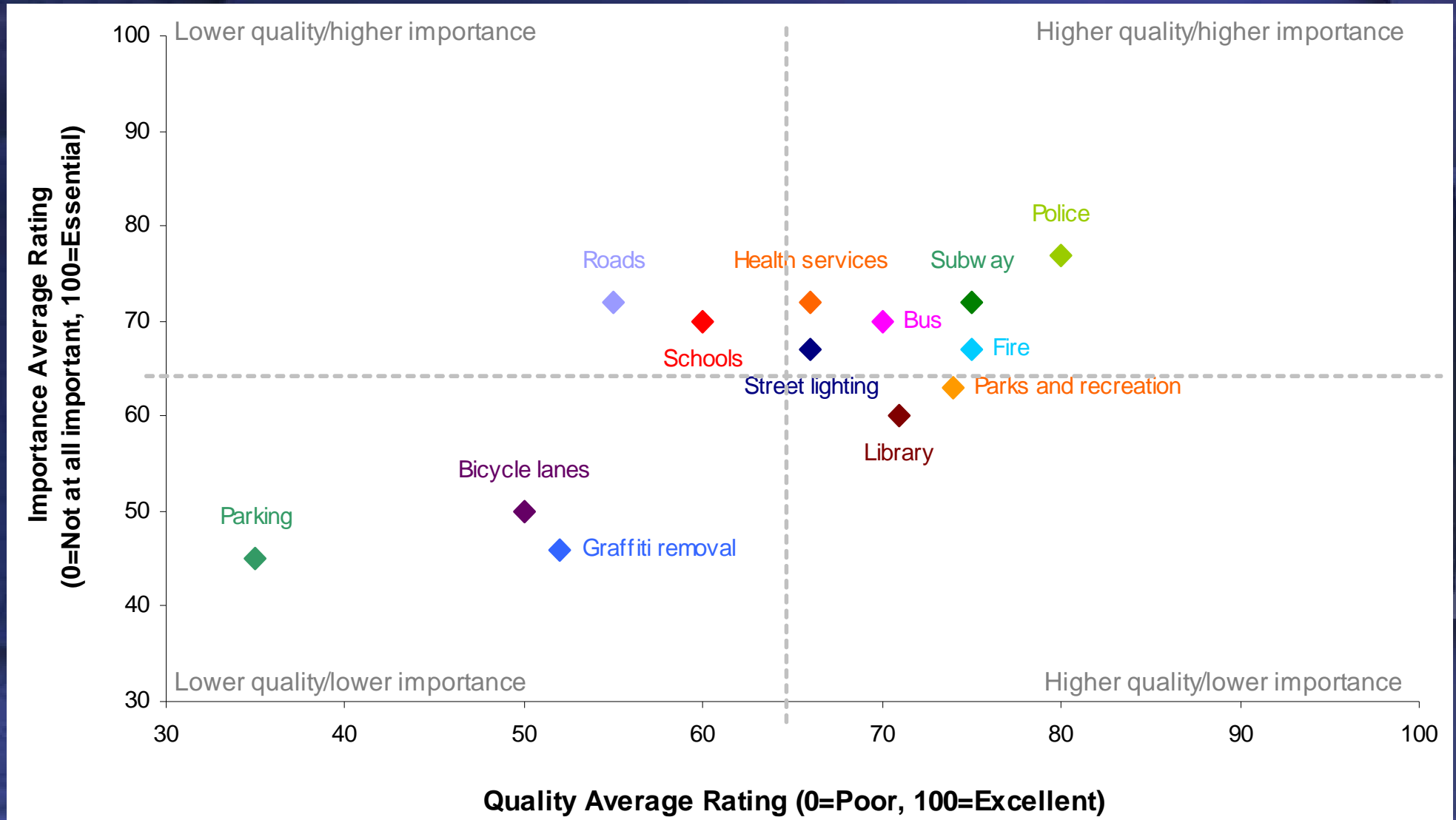
## Average Rating of Public Trust



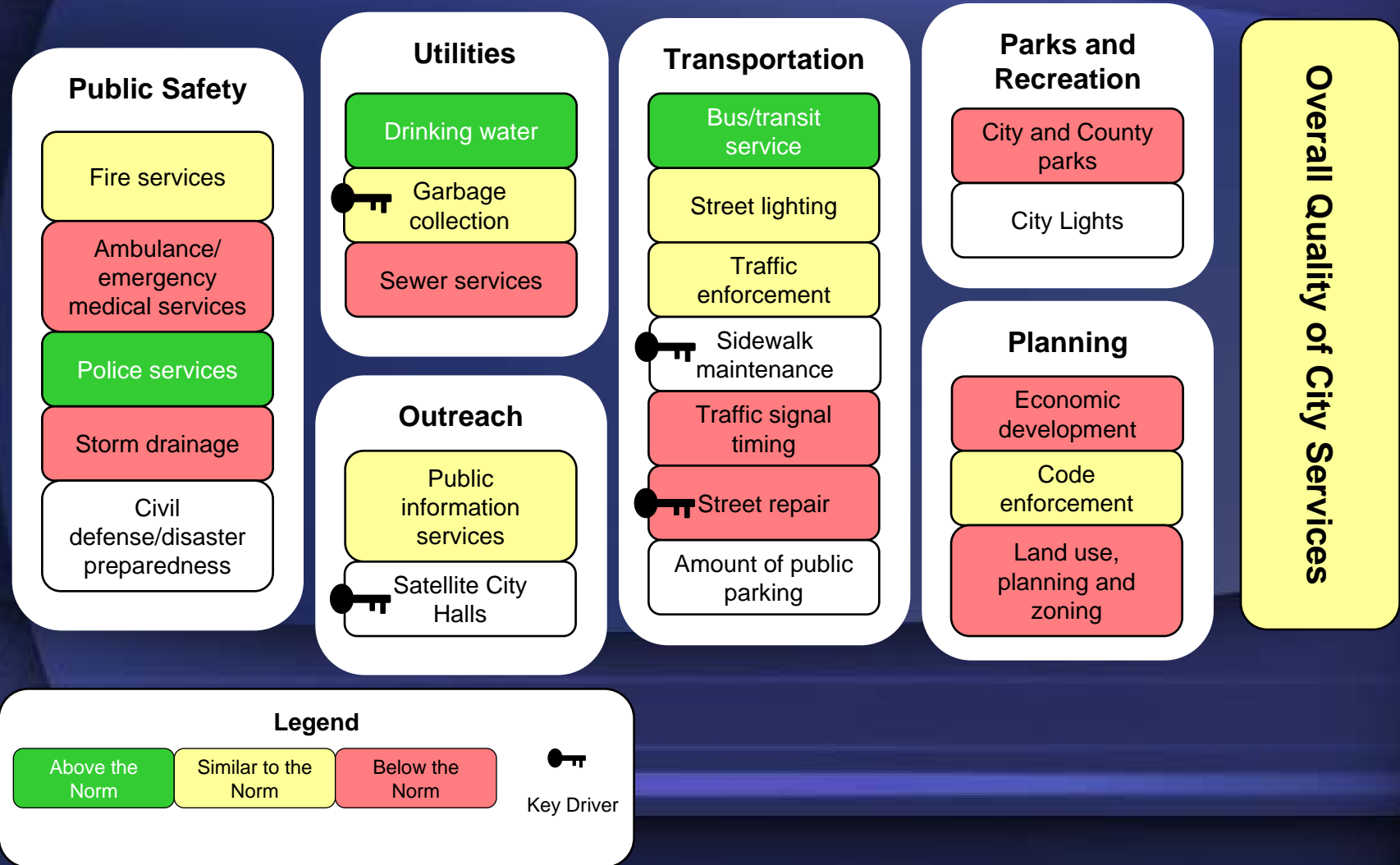
# Focus Analysis: Comparing Stated and Derived Importance



# Performance-Importance Map



# City ABC Action Chart



# Repeated Measurements

## Cross-sectional (independent samples)

- T-tests
- Regression
- Time series

## Longitudinal (panel)

- McNemar's test for correlated proportions
- Dependent t-test
- Sign test or Wilcoxin signed rank
- With covariates: MANOVA, Time-series, HLM

# Nested Data

- Types of clusters
  - Classrooms
  - Multi-site programs
  - Communities within larger geographic region
- Analysis techniques
  - Hierarchical linear measures (HLM)
  - Linear mixed modeling

# Attributing Causation

- Not possible for many studies
  - Evaluation resources
  - Difficulty in finding true control group
  - Program does not operate in isolation
- “Compelling evidence”

# Data Reporting

# Audiences for Survey Results

- Internal

- Staff
- Volunteers
- Participants
- Funders

- External

- Residents
- Community groups and leaders
- Policy Makers

# Methods to Share Results

- Press releases
- Newsletters/fliers
- Report
- Briefs
- Presentations
- Web pages
- Presentations/slideshows
- Videos

# Check List for Survey Reports

- Tailor content to audience
  - Remove technical jargon
  - Be concise
- Create visual interest through tables, graphs and pictures
- Components to include:
  - A summary
  - Survey results
  - Survey methods
  - A copy of survey instrument
  - Conclusions and recommendations, as possible

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Thank you!