

Assigning Weights to the ACS Content Review Scoring Criteria

Prepared for the Members of the
ICSP Subcommittee for the ACS

01/10/14

Background

- During the November meeting of the ICSP subcommittee for the ACS, Census staff provided the proposed criteria for scoring the “benefits” (utility) and “costs” (difficulty) of each item on the ACS questionnaire, and requested subcommittee feedback on the criteria as well as asked the subcommittee to determine relative weights for each of the criteria.
- Members provided feedback on the interaction between the previously provided scoring criteria for level of geography and the number of uses—statutory, required, and programmatic, and asked Census to consider ways to address this (which we have done).
- Subcommittee members requested to receive a scoring sheet with an allocation of points that each member could distribute across the various scoring criteria.

Action Needed

- Step 1: Review and Approve the Revised/Condensed Criteria
- Step 2: Assign Points that will Determine the Weights
- Step 3: Decide on Scoring Approach (Pick One of Two Options)

Step 1: Review and Approve the Revised/Condensed Criteria

Previous Structure of Scoring Criteria for Number of Uses and Level of Geography

- Separate criteria were defined for each:
 - Number of Uses: Statutory
 - Number of Uses: Required
 - Number of Uses: Programmatic
 - Scores from 0-5 were assigned based on the number of uses in each category. Questions with more usage cited by agencies received more points.
 - Lowest Geographic Level: Statutory
 - Lowest Geographic Level: Required
 - Lowest Geographic Level: Programmatic
 - Higher scores were assigned if any of the uses in that category were needed at lower levels of geography (with 5=block group/tract, 4=place, 3=county, 2=MSA, 1=state, and 0=nation)

Proposed New Structure of Scoring Criteria for Type of Uses and Level of Geography

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	A	B	C
Lowest Geographic Level is Place, County or MSA	D	E	F
Lowest Geographic Level is State or Nation	G	H	I

- Each of blocks A through I would be assigned separate scores based on whether the survey question has stated uses of that type at that level of geography.
- Relative value for each would be determined by the points/weights assigned by the subcommittee (e.g., block A would likely have the highest weight, and block I would likely have the lowest weight)

Step 2: Assign Points that will Determine the Weights

Assigning Points that will Determine the Weights

Subcommittee members will receive a spreadsheet that allows them to distribute a total of 200 points across the various benefits/utility categories, and 200 points across the costs/difficulty categories to determine the relative weights for each scoring criterion.

	Sample Weights
"Benefit" Decision Criteria	
Uses at Block Group / Tract Level – Statutory	32
Uses at Place/county/MSA Level – Statutory	20
Uses at State/Nation Level – Statutory	16
Uses at Block Group / Tract Level – Required	30
Uses at Place/county/MSA Level – Required	18
Uses at State/Nation Level – Required	14
Uses at Block Group / Tract Level – Programmatic	28
Uses at Place/county/MSA Level – Programmatic	16
Uses at State/Nation Level – Programmatic	8
County-Level Interquartile Range in Values	6
Used to Select Frame for a Federal Survey	4
Other Data Sources Exist	2
Median County-Level Coefficients of Variation	6
Sum	200
"Cost" Decision Criteria	
Interviewer Survey - Cognitive Burden Score	60
Interviewer Survey - Sensitivity Score	60
Interviewer Survey - Overall Difficulty Score	30
Number of Complaints to Census Bureau HQ	6
Median Seconds to Answer	14
Median County-Level Item Response Rate	30
Sum	200

To Consider When Determining Weights for Type of Uses and Level of Geography

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	A	B	C
Lowest Geographic Level is Place, County or MSA	D	E	F
Lowest Geographic Level is State or Nation	G	H	I

- Subcommittee members will need to consider the relative importance of geographic level versus type of usage when assigning weights to each of the 9 cells

To Consider When Determining Weights for Type of Uses and Level of Geography

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	High	Medium	Low
Lowest Geographic Level is Place, County or MSA	High	Medium	Low
Lowest Geographic Level is State or Nation	Medium	Low	Low

- If you believe the type of use is of higher priority, you may choose to spread your points/weights in a manner similar to this.

To Consider When Determining Weights for Type of Uses and Level of Geography

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	High	High	Medium
Lowest Geographic Level is Place, County or MSA	Medium	Medium	Low
Lowest Geographic Level is State or Nation	Low	Low	Low

- If you believe the lowest geographic level is of higher priority, you may choose to spread your points/weights in a manner similar to this.

To Consider When Determining Weights for Type of Uses and Level of Geography

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	High	Medium High	Medium
Lowest Geographic Level is Place, County or MSA	Medium High	Medium	Medium Low
Lowest Geographic Level is State or Nation	Medium	Medium Low	Low

- If you believe the lowest geographic level and the type of use are of equal priority, you may choose to spread your points/weights in a manner similar to this.

Other Considerations

- Keep in mind that there are other criteria under benefits/uses:
 - County level interquartile range in values
 - Used to select frame for a federal survey
 - Other data sources exist
 - Median county-level coefficients of variation
- The relative value of these criteria versus the geographic level/type of use criteria should be reflected in the weights you assign.

Step 3: Decide on Scoring Approach (Pick One of Two Options)

Option 1: Higher Scores for Higher Number of Uses

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	A	B	C
Lowest Geographic Level is Place, County or MSA	D	E	F
Lowest Geographic Level is State or Nation	G	H	I

- Under this option, each block (A through I) would be assigned a score of 0 to 1.0 points based on the number of separate stated uses of the survey question of that type at that level of geography.
 - For example: 0 points for no uses, 0.2 points for 1-5 uses, 0.6 points for 6-10 uses, 1.0 points for more than 10 uses.

Option 1: Example

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	0.2	0	0.6
Lowest Geographic Level is Place, County or MSA	0	0.6	0
Lowest Geographic Level is State or Nation	0	0	1.0

- In this example, the survey question being scored has 2 statutory uses at the tract or block group level, 7 programmatic uses at the tract or block group level, 6 required uses at the place/county/MSA level, and 12 uses at the state/nation level.
 - Reminder: 0 points for no uses, 0.2 points for 1-5 uses, 0.6 points for 6-10 uses, 1.0 points for more than 10 uses.

Considerations for Option 1

Benefits:

- This option gives the opportunity for higher scores for questions that have more uses.

Drawbacks:

- Although weighting can give higher priority to low levels of geography or statutory uses, a low number of uses leads to a lower score in that block, which could dilute the weighted score.

Possible scenario:

- A question with more uses at higher levels of geography or with more programmatic uses may outscore a question with fewer statutory uses or fewer uses at low levels of geography, depending on the weighting scheme employed.

Option 2: Full Scores for Any Number of Uses of that Type

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	A	B	C
Lowest Geographic Level is Place, County or MSA	D	E	F
Lowest Geographic Level is State or Nation	G	H	I

- Under this option, each block (A through I) would be assigned a score of 0 or 1 points based on the presence of any stated uses of the survey question of that type at that level of geography.

Option 2: Example

	Statutory Uses	Required Uses	Programmatic Uses
Lowest Geographic Level is the Block Group or Tract	1	0	1
Lowest Geographic Level is Place, County or MSA	0	1	0
Lowest Geographic Level is State or Nation	0	0	1

- In this example, the survey question being scored has 2 statutory uses at the tract or block group level, 7 programmatic uses at the tract or block group level, 6 required uses at the place/county/MSA level, and 12 uses at the state/nation level.
 - Reminder: 0 points for no uses, 1 point for any uses.

Considerations for Option 2

Benefits:

- The weighted score is not diluted when there are a low number of uses of that type.
- The weighting scheme solely determines the relative merit of different types of uses at different types of geography.

Drawbacks:

- This option does not give the opportunity for higher scores for questions that have more uses.

Possible Scenario:

- A question with fewer uses may outscore a question with more uses, depending on the level of geography or type of use.

Actions:

- Confirm whether you are comfortable with the modified criteria for number of uses and level of geography
- Complete and return the attached spreadsheet to assign points that will determine the weights
- Share your vote on option 1 versus option 2 for assigning higher scores for higher numbers of uses.