2015 Address Validation Test (AVT)

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In the fall of 2014, the U.S. Census Bureau will conduct the 2015 Address Validation Test (AVT) in two parts to help us plan the Address Canvassing operation for the 2020 Census.

In the first part, Census Bureau listers will canvass 10,100 blocks selected across the U.S. (excluding Alaska, Hawaii, and Puerto Rico) via a stratified, systematic sample. The listers will locate, update, add, or delete addresses currently on the Master Address File (MAF). By comparing field results to results predicted by statistical models, this activity will help us assess our ability to use these statistical models (1) to measure error in the MAF during the decade, and (2) to identify areas to be canvassed in the 2020 Address Canvassing operation. The models studied to date use available auxiliary data, and are mainly of two types: logistic regression at the block level, modeling the propensity of an error (e.g., missing five or more valid addresses from the MAF in a given block); and distributional, modeling the probabilities of 0, 1, 2, ..., errors (e.g., via a zero-inflated negative binomial distribution).

In the second part of the test, referred to as Partial Block Canvassing (PBC), Census Bureau geographers or other staff will list portions of blocks. Partial block canvassing focuses fieldwork on a specified location or area within a census block as opposed to traditional address canvassing, in which the field worker traverses the entire census block. PBC depends on a preceding in-office operation that compares the number of addresses contained in the MAF for any given block with numbers of housing units visible in imagery and identifies areas and locations to be focused upon. PBC, therefore, is part of a more comprehensive process for detecting change in the residential landscape and analyzing quality and completeness of the address list. The purpose of this part is to assess (1) our use of imagery and other geographical information to identify areas in which the number of housing units has remained stable as well as areas experiencing change not reflected in the MAF, and (2) our ability to accurately identify and canvass only the portions of blocks in which changes are concentrated. For efficiency and to obtain more accurate information, some of these blocks will be the same as those in the first part.

Discussion Questions:

1. Our original statistical models used auxiliary data (independent variables, x) available before the Address Canvassing operation conducted in 2009 as part of the 2010 Census, in an effort to

predict the errors (dependent variables, *y*) observed in the 2009 operation. More current models use (we hope) more predictive auxiliary variables, but we won't have the results until after the Address Validation Test, at which time we can develop better models with data obtained from the test. As the models evolve over the decade with new auxiliary data, how can we properly assess how well they will predict errors in the MAF as we prepare for the Address Canvassing operation in 2019, that is, before we know the truth on the ground?

2. A goal for both our statistical modeling and geographical efforts is to predict, or anticipate, where changes to the residential landscape might occur. Can you suggest how we might use economic data, such as changes in land values or other data measuring economic pressures leading to development or redevelopment, to predict change?

3. In identifying blocks for the Partial Block Canvassing Test, we have focused on blocks in which changes are clustered in one portion of the block, thus avoiding the cost of traversing the entirety of the block. Should we also include blocks in which changes are clustered in multiple portions? In such blocks, the canvasser might still traverse the entirety of the block, but would not spend time listing each unit.