Marketing Systems Group

WHY ACCURATE GEO-LOCATION OF ADDRESSES IN THE ABS FRAME IS CRITICAL

When you receive an ABS sample of addresses, the data typically includes Census Geography (Census Block, Block Group, Tract, etc.). Census geography is important because aggregated demographic estimates are summarized at various levels of Census geography by the US Census and other third-party demographic data compilers. This information is useful because it provides researchers with the universe estimates (UE) of the population (or population sub-group) to be sampled.

Census geography is also quite useful because it is the best way to define the geography for small-area sample frames. Many administrative boundaries are defined by Census geography, including cities, towns, places, school districts, Congressional Districts, voting precincts, etc. It is also the best way to define custom geographies such as neighborhoods, radii, and trade areas.

For individual sample frames, researchers ideally want the ABS frame to correlate to UE estimates obtained from ACS or other demographic sources as closely as possible. The geo-location of addresses plays a critical role with this relationship. Geo-location (or geo-coding) is the process by which latitude and longitude are derived and appended to each postal address. Once a latitude and longitude is derived, that "point" is placed into a single piece of Census geography.

Outside of using a hand-held GPS system, there are many methods and levels of precision that are employed to determine the latitude/longitude of an address. MSG has developed a sophisticated address geo-location system that utilizes multiple methods and data sources resulting in the most accurate latitude/longitude possible for an ABS sample record. Up to six levels of geocoding precision are available for an address and they are listed below from most precise to least precise:

- **Rooftop** – Latitude/longitude is placed on top of the primary structure (i.e. house, building).
- **Parcel centroid** – Latitude/longitude is placed into the geographic center of a parcel of land.
- **Interpolated** – Latitude/longitude is placed within an address segment based on the location of the house number within the address range for that segment divided into equally sized intervals.
- **ZIP+4 centroid** – An aggregated centroid using all the latitude/longitudes within a given ZIP+4.
- **ZIP+2 centroid** – An aggregated centroid using all the latitude/longitudes within a given ZIP+2.
- **ZIP Code centroid** – An aggregated centroid using all the latitude/longitudes within a given ZIP Code.

Over **86%** of the addresses within MSG's ABS frame are geocoded to the rooftop or parcel centroid level. This means that the correct Census geography is appended to a significant majority of addresses within ABS samples. This high level of accuracy ensures two things:

A) All the correct addresses for a given geographic sample frame are included and eligible for selection.
B) The ABS frame counts will closely mirror UE estimates obtained from ACS or other sources.