Addendum to Slides 8 and 9 of Smart Thermostat Presentation - Jesse J. Martinez, PE

SCG Data Sources:

The pilot study was designed to solicit a pool of 10,000 Advanced Meter customers to participate in the utility's Smart Thermostat Pilot. Consideration was given to identifying a cluster of participants having significant heating loads within a single geographic region so as to reduce installation costs. As an adder, the pilot focused on excluding customers that were not Single Family Homes, did not have at least 12 months of contiguous usage data, and had an annual consumption not found between the 20^{th} to 80^{th} percentiles of annual consumption.

The management system used for data acquisition was a proprietary tracking system named FACT™ which possesses the ability to record customer interactions, scheduling, reporting, and is an on-site repository for used for data collection in the field.

Challenges:

1. The NEST thermostat itself had potential installation issues such that the thermostat may have incompatible wiring, incompatible routers, or wireless login information is not available at the time of installation.
2. If response rates to "enrollment confirmation emails" were too low, then "fallback" strategies would be employed in order to ensure minimum number of pilot study participants.

Benefits:

1. Strategies were developed for outreach, demonstration recruitment, and screening protocols that minimized the cost of the pilot.

SCG Data Analysis:

The chosen methodology used for the impact evaluation is the Randomized Control Trial (RCT). This allows for maximum statistical power in analyzing placebo groups (i.e. control) versus groups receiving the intervention (i.e. a treatment group). This chosen method ensures that the control group and the treatment group are balanced similarly in terms of past energy use. The RCT methodology minimizes the potential for bias and uncertainty in the estimated savings.

A linear regression will be performed over the usage data sets for the both the treatment group (participants who received the smart thermostat) and the control group (participants who expressed an interest, but did not receive the smart thermostat). A usage for each group will be compared and a savings estimate will be computed.

Challenges:

1. Available data for electricity usage could not be obtained in every instance.
2. Gas savings will be provided as a "percentage of savings"

Benefits:

1. Methodology minimizes selection bias and uncertainty
2. Reduced cost for impact evaluation by using the RCT method (per Abadie and Imbens[1])

1. Reference:

Abadie, A. and G.W. Imbens. 2011. "Bias-Corrected Matching Estimators for Average Treatment Effects". *Journal of Business and Economic Statistics* 29(1):1-11.