

## A Geospatial Analysis of Residential Conservation-Attitude, Intention and Behavior

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**Abstract :** A typical US household consumes more energy than households in other countries and is directly responsible for a considerable proportion of the atmospheric concentration of the greenhouse gases. This makes U.S. household a vital target group for energy conservation studies. Positive household behavior is central to residential energy conservation. However, for individuals to conserve energy they must not only know how to conserve energy but be also willing to do so. That is, a positive attitude towards residential conservation and an intention to conserve energy are two of the most important psychological determinants for energy conservation behavior. Most social science studies, to date, have studied the relationships between attitude, intention, and behavior by building upon socio-psychological theories of behavior. However, these frameworks, including the widely used Theory of Planned Behavior and Social Cognitive Theory, lack a spatial component. That is, these studies fail to capture the impact of the geographical locations of homeowners' residences on their residential energy consumption and conservation practices. Therefore, the purpose of this study is to explore geospatial relationships between homeowners' residential energy conservation-attitudes, conservation-intentions, and consumption behavior. The study analyzes residential conservation-attitudes and conservation-intentions of homeowners across 63 counties in Florida and compares it with quantifiable measures of residential energy consumption. Empirical findings revealed that the spatial distribution of high and/or low values of homeowners' mean-score values of conservation-attitudes and conservation-intentions are more spatially clustered than would be expected if the underlying spatial processes were random. On the contrary, the spatial distribution of high and/or low values of households' carbon footprints was found to be more spatially dispersed than assumed if the underlying spatial process were random. The study also examined the influence of potential spatial variables, such as urban or rural setting and presence of educational institutions and/or extension program, on the conservation-attitudes, intentions, and behaviors of homeowners.

**Keywords :** conservation-attitude, conservation-intention, geospatial analysis, residential energy consumption, spatial autocorrelation

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