

A COMPARISON OF THE IMPACTS OF ALTERNATIVE WALKABILITY MEASURES ON HOUSE VALUES

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Abstract

Most recent research on the relationship between walkability and housing value has employed Walk Score as the primary measure of walkability. Despite its benefits, Walk Score has several limitations, namely that it is a proprietary measure whose calculation is not entirely transparent and that it must be purchased when analyzing large sets of data. Here we test a variety of alternative measures of walkability and compare how well they explain housing value in comparison with Walk Score. Here we analyze two distinct urban areas, Seattle and Miami. We also examine how poverty levels act as a mediator on the value of walkability, potentially increasing or decreasing its value.

We gather or create 18 walkability measures, including eight variables related to local street networks, six variables related to activity mix, three variables related to access to destinations, and a nationally available walkability index from the US Environmental Protection Agency. We create walkability variables for 400-, 800-, and 1600-meter radii, but ultimately conduct our analyses using 400-meter radius data. We run a variety of hedonic regressions testing various walkability variables. To aid in variable selection, we first correlate walkability variables with Walk Score and select variables with the highest correlations. As a robustness check, we also run regressions with neighborhood dummies, which have been demonstrated in the past to effectively predict housing values.

We find that the marginal effect of walkability varies; however, several walkability variables demonstrate similarly sized marginal effects with Walk Score. In most cases, the EPA Index demonstrates a larger marginal effect than Walk Scores do. This suggests that there are several freely available walkability variables that may adequately substitute for Walk Score in hedonic analyses. We also find significant spatial variation in the effect of walkability variables between Miami and Seattle and between urban and non-urban areas. Also, poverty level interacts with walkability in the Miami-Dade area, with higher levels of poverty showing a decreased or even negative walkability premiums. The neighborhood fixed effects capture much of the effects of the walkability measures.