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Definitions

- **Greenness:** The presence of vegetation like trees and grass in an area.

- **Socioeconomic Status (SES):** A person or group's economic and social position based on income, education, and occupation.

- **Normalized Difference Vegetation Index (NDVI):** A measure of the amount of live green vegetation in an area.

- **Leaf Area Index (LAI):** A measure of the total leaf area of trees in an area.

- **Tree Planting Uptake:** The acceptance and implementation of tree planting initiatives by residents.

Key Findings

- Higher-income areas have more vegetation (greenness) compared to lower-income areas.

- Income is strongly associated with greenness in front and back yards, but not significantly with other SES indicators like education or employment status.

- Tree planting initiatives were more successful in areas with larger lot sizes, higher home values, and lower population density.

Introduction

The study explores the relationship between neighborhood greenness and socioeconomic status (SES) in Louisville, Kentucky. It aims to understand how SES affects the success of residential tree planting programs and the distribution of greenness within neighborhoods.

Main Content

Background

Neighborhood greenness, which includes trees and other vegetation, is known to improve health and environmental quality. However, higher-income areas tend to have more greenness, while lower-income areas often have less. This study investigates these differences within neighborhoods and looks at the effectiveness of free tree planting programs.

Objectives

The main goals were to examine how SES within a neighborhood affects greenness and assess the success of a no-cost residential tree planting program in overcoming SES-related barriers.

Methods

- **Participants:** 636 residents from the Oakdale neighborhood in Louisville, Kentucky.

- **Data Collection:** Surveys were conducted to collect information on participants' income, education, and other SES indicators. Greenness was measured using NDVI and LAI around participants' homes.

- **Tree Planting Program:** A no-cost tree planting program was offered to residents, and uptake was measured.

Results

- **Income and Greenness:** Higher income was consistently associated with higher NDVI and LAI in both front and back yards. Middle-income groups also showed some positive associations but to a lesser extent.

- **Tree Planting Uptake:** Tree planting was more likely in areas with larger lot sizes, higher home values, and lower population density. SES indicators like income, education, and race did not significantly affect tree planting uptake.

Conclusion

The study found that higher-income areas within neighborhoods have more greenness, but offering free tree planting programs did not significantly reduce these disparities. Successful tree planting was more related to lot size and existing greenness than to SES factors. Future efforts to promote equitable greenness should consider additional barriers beyond financial cost, such as community engagement and education.

Word Count: 425