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# Identifying potential NIMBY and YIMBY effects in general land use planning and zoning

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ABSTRACT

The terms NIMBY (Not-In-My-Back-Yard) and YIMBY (Yes-In-My-Back-Yard) describe negative and positive attitudes toward proposed development projects respectively. These attitudes are posited to be influenced by geographic (spatial) discounting wherein the distance from domicile may contribute to local opposition or support. In contrast to specific development projects, the potential influence of NIMBY/YIMBY in a general land use planning process has not been systematically evaluated. In this study, we analyzed empirical data from a public participation GIS (PPGIS) process implemented for a general plan revision to examine the evidence for geographic discounting for a range of land uses using mapped preferences by community residents. Using distance analysis, we found significant evidence for geographic discounting by land use type with variable discount rates influenced by location of residence and the spatial configuration of land use in the planning area represented by zoning. The findings were consistent with NIMBY/YIMBY expectations with the exception of residential development where the results were more ambiguous. Residents want future land uses with amenities (open space, recreation, and trails) closer to domicile and more intensive, developed land uses (commercial, tourism, events, parking) further away. The findings have potentially broad implications because general/comprehensive planning—a requirement of most local governments in the U.S.—is operationalized through land use zones that appear subject to spatial discounting and the manifestation of potential NIMBY/YIMBY effects in the planning process. Future research should examine other planning contexts such as large urban areas with a greater diversity of land uses.

## 1. Introduction

The terms NIMBY (Not-In-My-Back-Yard) and YIMBY (Yes-In-My-Back-Yard) describe negative and positive attitudes toward proposed development projects respectively. Although the original use of the term NIMBY is vague, it came into widespread use in the 1980s to describe the "social response to unwanted facilities, sometimes called locally unwanted land uses (LULUs)" (Schively, 2007). Frequently used as a pejorative term, NIMBY implies local parochialism guided by selfishness, ignorance, or irrationality for development projects that appear to serve community needs, but which are perceived as unattractive, dangerous, a nuisance, or likely to result in decreased property values. As described by Schively (2007), "NIMBY is complex given the wide range of land uses and facilities, the diverse motivations and concerns of participants, and the manner in which NIMBY responses have been characterized". The term YIMBY emerged in the late eighties as an antipode to describe people that support local development near where they live. For example, YIMBYs may support new housing development that improves local housing conditions or "green" projects such as wind energy (YIMBY, 2009).

These attitudes can result in mobilized opposition or support for local development projects. Opposition groups are often motivated by perceived risks from proposed facilities (Kasperson, Golding, & Tuler, 1992). Some examples of the NIMBY phenomena may involve the siting of human or public service facilities such as affordable housing, homeless shelters, drug treatment facilities, detention centers, or facilities with potential environmental or health impacts such as waste processing plants, landfills, energy production, large-scale agricultural operations, or transportation infrastructure.

An important dimension of NIMBY is the posited influence of distance from domicile to the proposed development or land use. The term "geographic" or "spatial" discounting refers to the theory that people

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prefer to be close to what they like and distant from what they dislike (Hannon, 1994; Norton & Hannon, 1997; Perrings & Hannon, 2001). Geographic discounting can be operationalized and measured by examining the distance between opponents (or supporters) of a proposed development. Studies investigating the influence of distance from domicile on potential development projects have produced mixed results. In summarizing the evidence, Van der Horst (2007), concluded that "on aggregate, proximity does have strong influence on public attitudes to proposed projects, but the nature, strength and spatial scale of this effect may vary according to local context and 'value' of the land."

An alternative method for assessing geographic discounting is to use public participation GIS (PPGIS) methods where individuals identify and map locations of landscape values (e.g., aesthetic, recreation, biological) and land use preferences (opposing or supporting) that are posited to vary based on distance from an individual's reference location (Brown, Reed, & Harris, 2002). There is affirmative, but limited empirical evidence for the existence of geographic or spatial discounting measured using PPGIS methods. For example, Pocewicz and Nielsen-Pincus (2013) observed NIMBYism for residential and wind energy development in regional Wyoming; Brown, Kelly, and Whitall (2014) found evidence for NIMBYism in national forests in California where individuals living closer to the forests mapped fewer preferences for resource utilization than those living more distant. Within urban areas, there is also some empirical evidence for YIMBYism with the location of green space relative to domicile (Kyttä, Broberg, Tzoulas, & Snabb, 2013).

The majority of studies investigating geographic discounting and the NIMBY phenomenon have focused on specific development projects (e.g., low income housing) rather than support or opposition to general classes of land use (e.g., residential, commercial) identified in *general* or *comprehensive* land use plans. Most local governments (e.g., city, county, regional) in the U.S. are legally required to prepare and implement a land use plan, typically covering 10–20 years that identify long-range goals and inform decisions on future public and private development proposals. Zoning is the operational mechanism by which current and projected land uses are made spatially explicit in the form of a zoning map that identifies geographic areas where various types of land use are permitted. The zoning map is an outcome of the initial development or revision of the land use plan undertaken by local government. Land use ordinances define the regulations that apply to zones and may or may not be tightly coupled with the general planning process. Approximately ninety-seven percent of incorporated cities in the U.S. use zoning to regulate land use (Dietderich, 1996).

In this study, we examine the evidence for the presence of geographic discounting and NIMBY/YIMBY effects in a general land use planning process for a coastal community situated in central California (U.S.). Using participatory mapping methods, residents were asked to identify and map preferences for land uses that were identified as having the potential for the expression of NIMBY/YIMBY attitudes. As the first empirical study to examine the evidence for geographic discounting using participatory mapping for multiple land uses in a general land use planning process, there was relatively little guidance for analytical methods.

We structured our approach by first analyzing the distribution of land use preferences within the planning area to identify significant "hot spots" relative to the distribution of resident home locations. An understanding of the geography of the planning area and the distribution of resident domiciles were necessary to inform the analyses to account for spatial irregularities. We then sought evidence for geographic discounting by land use type by performing two types of distance analysis based on: (1) mean distance from resident domicile to mapped land use preferences, and (2) the distribution of preferences in uniform distance bands originating from the residence. The latter analysis generates distance plots showing preferred land uses proximate to resident domicile and less preferred land uses as more distant. We then examined whether the mapping of preferences is related to participant characteristics such as pre-existing attitudes toward the land use as there is evidence that participants translate non-spatial preferences into behavioral choices when mapping (Brown, 2013). Our final analysis used zoning as proxy for distance by examining the distribution of land use preferences mapped by participants within and outside their home zone. Our research methods were guided by the following research questions:

1) How are resident domiciles and mapped land use preferences spatially distributed within the general plan area?
2) What is the empirical evidence for geographic discounting for general land uses that can be characterized as having potential to manifest in NIMBY/YIMBY responses? Operationally, how is resident domicile spatially related to mapped preferences for different types of land use?
3) If geographic discounting is present for some land uses, is this finding related to resident attitudes toward current land use allocation in the planning area?
4) Is geographic discounting influenced by current zoning and land use allocation within the planning area?
5) What are the implications of the findings for general land use planning and zoning processes that are required by most local governments?

## 2. Methods

### 2.1. Study area, data collection, and sampling

Avila Beach is an unincorporated coastal community (census-designated place) located in San Luis Obispo County, California, U.S. with an estimated population of 1474 in 2015 (SLOCOG, 2017, p. 93401). The geographic area for this study is the land area encompassed within Avila Urban Reserve Line (see Fig. 1) containing just over 2220 acres. Much of area contains low intensity development except for areas adjacent to the beach that contain homes, hotels, and small business where tourism serves as the community's primary economic activity. Inland from the beach area are multiple housing developments where a significant portion of residents live.

Land use within the study area is currently governed by four primary plans: San Luis Obispo Inland Area Plan, Avila Community Plan (Inland), San Luis Bay Area Plan (Coastal), and the Avila Beach Specific Plan. These area-specific plans exist within the broader context of the San Luis Obispo County General Plan that identifies development goals and the distribution of future land uses for the county (see Envision Avila, 2016 http://www.envisionavila.org/). The participatory mapping survey reported herein was one component of a broader public participation process designed to inform the new Avila Community Plan which will consolidate the four separate plans into a comprehensive document to guide future land use for the next 20 years. Of particular relevance to this study and its potential implications are the land use categories (i.e., zones) described in the current plans which may be subject to revision. The largest area is zoned *Open Space* at 38%, followed by *Residential Suburban* at 19%, and *Recreation* at 18%.

In 2017, an internet-based participatory mapping survey was developed and implemented in a collaborative effort between the San Luis Obispo County Planning Department and California Polytechnic State University (Brown, Sanders, & Reed, 2018). Participatory mapping is a general term that describes the generation and/or use of spatial information, typically by non-experts, for a range of applications including land use planning. Participatory mapping includes the terms public participation GIS (PPGIS), participatory GIS (PGIS), and volunteered geographic information (VGI). For a review of empirical PPGIS applications to inform land use planning, see Brown and Kyttä (2014; 2018). The survey used a Google® maps application programming interface (API) where participants were instructed to drag and