THE ANALYSIS OF MIXED-USE DEVELOPMENTS VS SEGREGATIONAL ZONING AND THEIR EFFECTS ON COMMUNITY SUSTAINABILITY

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science

University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Spring 2023

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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STS Research Paper

Introduction

STS Topic In this section of the paper, I will investigate the technologies of mixed-use developments and more widely applied traditional development tools (i.e. segregational zoning) throughout the history of the United States. This will consist of looking at the top 5 most sustainable cities in the United States, according to The Arcadis Sustainable Cities Index, and then at their respective policies surrounding mixed/multi-use developments. I will then propose that multi-use developments, and subsequently the cities that employ them, are more sustainable, as per the triple bottom line, than segregational zoning. The triple bottom line is the idea that true sustainability means sustainability in the economic, environmental, and social realms of a community. This topic is relevant to most everyone living around the world due to the fact that most everyone belongs to a community and utilizes surrounding built, physical infrastructure; however, this analysis will be focused on the United States due to the unique history of zoning and development in cities across the country.

STS Framework The actor-network theory (ANT), which states that everything in the social and natural world exists in a series of constantly shifting relationships, will provide a framework for analyzing this relationship between sustainability and development type. This means that ANT provides the ability to map relationships between material things and concepts, and thereby track the shifting of those relationships throughout time. Through the lens of ANT, multi/mixed-use developments and segregational zoning are actors within a larger network of actors (e.g. economic status, ecological health, individual people) which causes shifts in other actors/networks due to the close interactions of the different elements. This framework is best suited for this analysis because changes in development type affect surrounding actors (e.g. a

planner), which in turn, may be affecting other actors (e.g. the design of other developments); the way that we design and zone communities affects human relationships, and consequently other intangible facets of humanity such as morality and politics.

Background Before the industrial revolution, many US towns and cities were centered around walkability, and with this, many developments mixed uses to make it more efficient for the developers and users. However, since the Standard State Zoning Enabling Act, a model law passed by the US government in 1922, municipalities began dividing their land into different zones that had different regulations. These regulations were on the basis of land-use in an attempt to limit the exposure of higher intensity industrial pollution to residents/residential areas, but this separation of uses has caused a decrease in housing options, exacerbated segregation issues and decreased accessibility by encouraging urban sprawl (the low-density development away from city centers; decentralization). The fact that most cities and municipalities are developed according to this type of code has led to communities that are environmentally, fiscally, and socially unsustainable (Speck, 2015).

Mixed-use development is defined as an individual project in which two or more distinct property types (e.g. residential, commercial, office) are located within a single structure. Multi-use developments on the other hand may have these distinct uses in different structures within a site. Both types of projects are pedestrian-oriented, maximize space usage, provide safer environments for users, and tend to have increased architectural expression, all of which are facets of a sustainable community (DeLisle & Grissom, 2020). Due to the scope of the project, both property types will be considered in analysis due to the contrast of these types of development with traditional single-use, segregated developments. Also note that mixed/multi-

will be used interchangeably throughout this paper as much of the literature does not differentiate between the two types.

Analysis

Since major reforms to planning methods and zoning codes in the 1980s and 90s, mixed-use development has slowly been becoming more popular across the US. This is largely due to the publishing of Oregon's "Commercial and Mixed-Use Development Handbook" in 2000, which has behaved as an influential actor through the lens of ANT, and as a new model code for mixed-use development (Bahadur & Kotharkar, 2012). The handbook provided a list of data-driven benefits to mixed-use developments in response to the decades long practice of segregating land use and destroying community well-being. Through the view of ANT, traditional development is an actor which had negative effects on the community members, whether largely apparent (e.g. forced, economically, racially, or otherwise, to live in under-resourced areas) or more unapparent (e.g. reliance on cars which contributes to negative physical health). The community members, and their social, physical, and mental health are all actors which affect development and zoning codes in the process of social reform.

According to the Arcadis Sustainable Cities Index 2022, the top 5 most sustainable cities in the US are: 1. Seattle, WA; 2. San Francisco, CA; 3. Los Angeles, CA; 4. New York, NY; and 5. Washington, DC (WBCSD Communications, 2022). Along with the overall rankings, WBCSD also tracks the three pillars of sustainability within each city. For each of these pillars, there are related indicators such as: air pollution, waste management, public policy, and sustainable transport for environmental sustainability; mental and physical health, crime rate, and income inequality for social sustainability; and affordability, economic development, and employment for economic sustainability. All of these smaller indicators are actors which contribute to their

larger metric actor (environmental, economic, or social sustainability) and the larger metrics contribute to community sustainability, politics/political attitudes, and other intangible actors. Seattle, San Francisco, and New York all have similar score distributions with economic sustainability in the lead and social sustainability in last; Los Angeles has its best score in

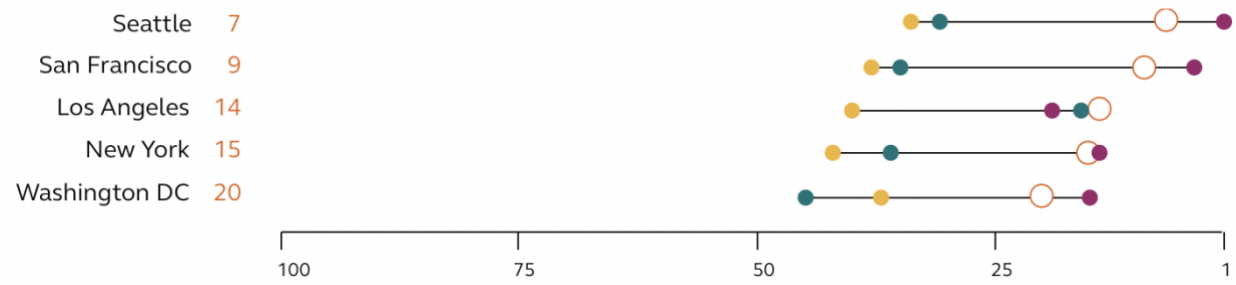

Figure 1: Top 5 sustainable US cities and their respective rankings in social (yellow), environmental (blue), and economic sustainability (pink)

environmental sustainability and its worst in social sustainability while Washington has its best score in economic sustainability and its worst in environmental sustainability. Having gathered this information, I will now present the different findings from my investigation into the mixed-use policies of each of these cities.

The history of mixed-use development in Seattle goes back to the late 1980s when there were many efforts to rethink the way that the city was being developed and get away from urban sprawl development. (DeLisle & Grissom, 2020). Throughout this time period, development was negatively affecting the community, which then helped to influence further development along with political actors This was enabled through revisions to the actor zoning codes, which had previously only allowed mixed-use development in commercial cores. These mixed-use neighborhoods have continued to grow throughout the end of the 20th century and beginning of the 21st century, continuing to be actors which affect different facets of society and health in more positive ways than traditional development (Bertolet, 2011).

Similar to Seattle, San Francisco's modern history of mixed-use developments began in the 1980s with the creation of mixed-use districts to help preserve affordable housing, as well as a diverse mix of small businesses (Oatman-Stanford, 2018); small businesses and access to housing are both actors which influence community sustainability. Before 2000, most cities in California boasted little mixed-use space and where they did, they only combined apartments and businesses. This was due to the discrimination against mixed-use projects by lenders in California (major actors who affect economic sustainability and development), supposedly on the basis of the 'style' of mixed-use buildings (Snider, 2001). However, over the years, the development of these types of spaces has increased throughout the state, especially in the San Francisco Bay Area. This has likely contributed to the higher ranking of Seattle under the Arcadis Sustainable Index. It is also important to note that both Seattle and San Francisco are the top two healthiest cities in America in 2023 according to a WalletHub analysis based on 43 metrics (McCann, 2023).

Los Angeles was actually the first city to regulate land use, specifically separating residential and industrial districts. In 1972, Los Angeles released their first city-wide comprehensive plan, an actor which detailed that growth would be funneled into higher-density mixed-use 'centres'. In the subsequent plan released in 1996, the city reemphasized their desire to contain growth in these mixed-use districts — while preserving the extensive area dedicated to single-family housing; however, they did not further elaborate on how these developments should be formed. As of 2015, less than 5% of the city was zoned as mixed-use, proving that the previous plans were not adequately enforced by the community and political actors who had the power to (Los Angeles Walks, 2015). The lack of de-emphasis on the automobile (which is an actor that has had large, negative impacts on community health) due to the high incidence of single-family

housing in the area, has also likely contributed to its lower score as compared to either Seattle or San Francisco, which are the only other two on the West Coast.

New York City, alternatively, was the first city in the US to adopt a comprehensive zoning resolution which happened in 1916, creating a formal actor for zoning in the NYC community. However, currently in New York City, there are no specific multi-use zones or districts, but rather all commercial zones have the potential to have multi-use buildings by combining residential and commercial uses (NYC Buildings, 2016). This is likely positively affecting its rankings as it is directly behind LA, and the west coast has historically been a greater proponent for sustainable development than the east (US Sustainable Development Report, 2021)

In Washington DC, the nation's capital, zoning has a very unique history as it was one of the first cities to follow NYC in adopting a comprehensive zoning resolution. Its current zoning ordinance, which was comprehensively reviewed, for the first time since 1958, in 2007, now includes 29 different categories of mixed-use zoning as well as 8 types of Downtown zones, which also allow mixed-use developments (the mixing of 'retail, residential, entertainment, arts, and cultural uses') in the central area of the city. This large variety of mixed-use zones allows development around the city to have the potential to be mixed-use (Washington DC Office of Zoning, 2016). This large emphasis by the planners of DC (actors) on mixed-use development (another actor) is likely contributing to the high social sustainability score (and high scores for the social sub-metric actors) as compared to most of the other US cities.

Discussion

After reviewing the data and literature surrounding mixed-use developments, I have concluded that there is a benefit to sustainability when employing multi-use development, but there does

not necessarily need to be an abundance of mixed-use developments for a city/community to be considered sustainable. This is because sustainability encompasses many different facets amongst the social, environmental, and economic realms and a single development, or even a large-scale development, cannot address all these needs. However, mixed-use developments do provide a lot of benefits to sustainability including: (1) independence of movement, especially for the young and the elderly who can conveniently walk, cycle, or ride transit; reducing the use of auto use (related to environmental, economic, and social sustainability); (2) safety through around-the-clock presence of people (related to social sustainability); (3) support for those who work at home, through nearby services and amenities (related to social sustainability); (4) a variety of housing choices, so that a wide variety of family/living situations and those of varying economic ability may find places to live (related to social and economic sustainability); and finally (5) foster a 'sense of place' for residents, employees, and visitors (related to social sustainability) (Bahadur, & Kotharkar, 2012; Slowey, 2016). It is also known that designing a community that is sprawled and divided based on development type leads to a community that lacks interconnection; members of the community only visit specific areas to accomplish certain things, causing them to only interact with those around and within their home and work life (Speck, 2015).

However, with all this being said, mixed-use developments (and the subsequent dismantlement of segregational zoning) are not outright a panacea for all the problems of an urban environment. Without proper planning, mixed-use developments can have similar effects to those caused by segregational development, e.g. if the development clears a large portion of low/middle-income residential space, there must be plans in place for the new space to be accessible to the surrounding community (i.e. providing specified lower/middle-income residential space in the

new development). This brings up the issue of gentrification in urban environments whereby higher-income populations begin to move into previously lower-income neighborhoods due to revitalization efforts; this is typically accompanied by an increase in rent, and subsequent displacement of long-time residents. Gentrification also typically involves the demolition of historical community landmarks, which the development of mixed-use spaces (as well as any other development) also has the potential to do (Slowey, 2017). However, rent-caps and other economic programs can be used to keep residents in place and not disrupt their livelihoods, as well as specifically receiving input from existing residents in the area.

Conclusion

Zoning and development shape all our communities and current methods are not shaping communities in a way that accurately reflects the wants and needs of its members. Utilizing mixed-use developments as a means to create an engaging and sustainable community will require a shift in zoning legislation away from segregational zoning and subsequently single-family residential zoning. The future of development and zoning depends not only on how we want our cities to look and function, but also on how the changing social conditions influence personal connections to the environment and other community members. The research performed here will help to inform the needs of development and how they can physically represent the wants and needs of communities around the United States.

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