
"URBAN OPEN SPACE" - STIMULANT FOR ECONOMIC DEVELOPMENT

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Abstract: Cities are constantly looking to attract economic development to create jobs and increase revenue within their jurisdictions. In turn, cities can use this increased tax base to improve the amenities and quality of life within the municipality. To attract this economic development, cities often offer commercial zones large tax breaks and incentive packages to assist in the location decision. Research shows that these methods have recently backfired with the communities, due to the primary focus on business rather than on improving the quality of life for residents. Research also reveals the growing impact of a community's quality of life factors on a commercial zone's location decision-making process. Focusing on urban open space is one method of increasing the quality of life within a community and making it a more desirable among current and future residents. Taking into account the multitude of human and ecological benefits of urban open space, this study provides additional economic justification of the importance and value of open space. By running correlation and regression models analyzing the number of commercial zones located in a city and the percent of the population with at least a small degree in relation to footfall data and other economic location variables, this study indicates urban open space is a viable economic recruitment strategy for municipalities. The results indicate a causal relationship between city land occupied by open spaces and the percent of population with at least a small degree—one of the main factors correlated with the location of commercial zones.

Keywords: Urban Open Space, Quality of Life, Economic Development, Relationship between Open Space and Population.

Introduction: ¹Cities are continuously looking to better themselves, focusing on economic development, especially in recessions. By attracting businesses to locate within their jurisdiction, cities are able to provide jobs, increase their tax base and revenue and, in turn, better their community through expenditures such as city beautification projects, parks, and other amenities that improve the resident's quality of life. However, when the economy experiences a downturn, as it currently is, much of this non-essential spending is cut from budgets. ²In order to attract these coveted businesses, a city might use several different tactics to make itself more enticing than other competing cities. Recently these tactics have included tax breaks, infrastructure assistance, and other elements included in incentive packages meant to create the competitive edge for one city over another. Because they are focused solely on making a city appear more attractive to a business than another city, these tactics completely overlook factors that would improve the community for current and future residents. These factors would be a result of the increased revenue caused by commercial zones deciding to locate within the jurisdiction. Due to lack of success and the detrimental affects to the community open space, these incentive tactics have recently been met by fierce opposition from local community citizens. Often those plans focused on business recruitment increased sprawl and rarely had the desired positive impact on quality of life amenities. More recent research recommends inverting this more traditional approach to luring businesses to locate within a jurisdiction.

³Providing economic justification for the preservation of existing urban open space and potential system additions is incredibly important given the recent development patterns of cities resulting in the rapid depletion of open space outside the city core and the public good aspect of parks. This standard of low density development in suburban Greenfields caused the significant loss of environmentally fragile

lands, reduced regional open space, diminished farmland, reduced species diversity, decreased aesthetic appeal of landscape, and caused severe ecosystem fragmentation.⁴ Urban open space tends to be viewed simply as a city entity with positive externalities. Yet due to the numerous intangible benefits of open space, it is considered a non-market good the benefits haven't been directly quantified and thus cannot be traded on the market. Because the benefits and services provided by open spaces can't be entirely captured in commercial markets, they do not receive the attention deserved in planning and policy decisions. In order to provide substantial justification, this study aims to produce theoretical and empirical evidence of the human, ecological, and economic impacts of green infrastructure by specifically addressing the question of whether green infrastructure is a viable recruitment strategy to attract economic development to municipalities.

Location Theory: Although this study aims to look at the impact of open space on economic development, it is necessary to examine the traditional determinants influencing industrial location. Classical economics generally views location decisions as a minimization of the transportation costs of raw materials to the location and the output to the market. Early research assumed industries located where profits are maximized, thus where there are the lowest transportation costs.⁵ Over time, researchers realized the need to take into account other factors affecting profit-maximization, such as wages, energy, and land costs. If a location with low land or labour costs could offset higher transportation costs, then the location decision would be affected. However, if the difference was minimal and insufficient in offsetting higher transportation costs, firms located where there were lowest transportation costs. This location theory assumes that a commercial area, such as a manufacturing plant, is sensitive to transportation costs. While relevant in the early 1900s through the post-World War II era, this minimization of transportation costs theory is not as applicable to more modern-day industries. Current day firms are much more knowledge based, relying on the transportation of ideas and data rather than materials and, in turn, significantly less affected by transportation costs of raw materials and factory outputs. Consequently, these newer industries are also more mobile, being able to locate nearly anywhere in the world. Additionally, although using profit maximization to choose a location is still germane to many commercial area's location decisions, it will be shown that other factors, such as the personal preference of executives, can have a significant impact on location.

Historic Determinants of Location: Researchers have used two main methods to determine what factors affect commercial zone's location. The conventional method, surveys, enables researchers to determine the significance of a long list of location variables and yields comprehensive results even among qualitative variables. Overall, survey results show market factors, labour force, transportation, and raw materials are historically the most significant variables affecting location decisions, especially from the early 1900s through the post-World War II era. During this time period, state and local taxes, financial incentives, and noneconomic factors such as quality of life showed little or no significance.⁶ While more recent surveys show the traditional location variables market factors, labour force, transportation, and raw materials continue to have a significant impact on location decisions, the importance placed on using them as the sole determinants has declined. In these more recent surveys, other variables such as the business climate, state and local taxes, and non-economic factors such as education and quality of life are becoming more significant factors in the location decision.

Quality of Life: Quality of life is a rather ambiguous term that encompasses many different, often subjective and value-based variables. It can refer to an individual's well-being or his happiness toward a place and its positive and negative attributes. Quality of life is a growing field of research in relationship to business location as the result of the relatively recent shift from a manufacturing economy to a service and knowledge-based economy. One of the most significant factors influencing the location of these new commercial zones is access to a highly skilled or educated workforce, as seen with the high technology commercial areas. Researchers argue a region able to attract and maintain human capital a population of these highly skilled, highly educated, and productive workers will tend to be more competitive when compared to other regions. When researchers analyze cities regarding their quality of life, different methods can be used to isolate relative significance of individual factors to the place's quality of life.⁷ Completing a comprehensive study of secondary data, Liu (1976) compiled an extensive

list of quality of life indicators broken into broad categories: economic, political, environmental, health and educational and social satisfaction of place. These broad quality of life categories and the specific indicators are common measures of analyzing a place's quality of life.

Quality of Life & Location: In a study conducted by Love and Crompton (1999), researchers surveyed the major decision makers from newly established, expanded, or relocated companies to Colorado. Love and Crompton obtained questions by interviewing economic development officials and decision makers from recently located businesses regarding opinions on the location process. A review of the previous literature provided additional survey questions. Of the 174 companies included in the results, interesting trends prevailed. Companies relocating from outside of Colorado rated factors of quality of life, labour and cost issues, government involvement and taxes, and daily living concerns all higher than companies relocating from within Colorado, who placed significantly more importance on the proximity of people (customers, competitors, suppliers, corporate headquarters). Quality of life was also more important to those firms who located in remote urban areas than those locating in Denver or rural areas. These include environmental quality, natural environment of Colorado, ambiance of area, and quality of education. Each of these factors is highly influenced by public policy, thus paramount to planners and economic development officials. Furthermore, other than education, these factors are also influenced by the presence of parks and open space, making the study relevant to this report.

Green Infrastructure in Urban Open Space: As seen, quality of life has many implications regarding individuals, commercial areas, and cities. For this study, quality of life variables are narrowed to the amenities of green infrastructure. The Environmental Protection Agency (2009) refers to green infrastructure as the matrix of park and open space that provide both ecological and human benefits, such as habitat connectivity and clean air and water. Green infrastructure includes everything from street trees and small pocket parks to large recreational parks and open spaces. Benefits ecological, economical, and human of green infrastructure are found at every level and thus are covered in the study.

Social Elements of Parks / Open Spaces: Beyond the typical narrow view that parks only serve as areas of passive or active recreation and add to the beauty of cities, parks and green spaces serve other vital roles in a city. Walker (2004) in a publication for the Urban Institute explained the impact of parks on local youth development and employment opportunities. Parks and the programs they facilitate provide physical, intellectual, emotional, and social assets that are necessary for a healthy development and helping youth choose rewarding paths to adulthood as Walker (2004, p.2) stated. The Empowering Youth Initiative in Chicago's Garfield Park is an example of such a program. Each year, fourth through seventh graders budget, design, model, choose a winning team, and create a permanent horticultural display within the park. Assisting in the development of a community's youth and lower skilled residents, parks provide entry-level employment opportunities. These opportunities are continually needed and provide youth and adults with marketable skills and experience. Such programs not only contribute to the strengthening of an area's social characteristics, but also to an area's economic success by offering entry-level employment opportunities.

Additionally, parks can encourage and provide motivation for community involvement, strengthening not only the social element of place happiness described by Richard Florida, but also the social spectrum in the quality of life analysis of locations.⁸ These open spaces provide a venue for interaction across all social and demographic divides that many times different cultural and social establishments are unable to provide. Research shows green spaces can even encourage social interaction and long-term bonds in residents of low-income housing developments. As demonstrated, parks and green space can provide this needed and desired venue for social interactions, thus strengthening a community's quality of life and its resident's happiness.

Economic Valuation of Urban Open Space: The health benefits of urban open spaces began to discuss and analyze parks in economic terms, but there are more direct ways of looking at parks in economic terms. Urban open space is made up of different urban ecosystems that provide a variety of

services to humans and the environment. It is through analyzing these different services that a semblance of a value has been placed on the benefits of urban green infrastructure.⁹ There are different types of ecosystems present in the urban environments, including street trees, parks and green space, urban forests, wetlands, rivers and streams, and lakes, bays, and seas. These ecosystems are recognized as providing a significant contribution to human welfare as purely public goods that accrue directly to humans without ever passing through the money economy.¹⁰ Additionally, arguments for the protection of ecosystems provided by green spaces are typically based on moral and aesthetic reasons. The services provided included: climate regulation, gas regulation, soil formation, waste treatment, nutrient cycling, food production, raw materials, recreation, and culture. Over time the travel cost analysis has been expanded by researchers into a direct use value. This is a simple sum of all the expenses sustained by park system visitors and users, not just the travel costs. This value is tallied as a result of travel costs, such as fuel, meals, accommodations, local purchases from onsite gift shops, and equipment and classes purchased relating to the park visit. Contingent valuation is another way researchers have measured the value of green spaces. Contingent valuation is simply a measure of the consumer's willingness to pay for certain amenities.¹¹ By asking community residents how much they would be willing to pay for a non-market item such as trees and parks, and conservation lands researchers can assume an economic value, given the resident's responses. However, this approach also creates problems because opinions given to these hypothetical circumstances do not necessarily align with actual actions.

Inferences: Since urban open space does not work within the typical economic supply and demand curves, and because much of the urban greening and park creation depends on government funding, there must be additional methods for presenting the demand for parks. By showing stress levels, health-related quality of life scores, general quality of life scores, and economic investment all benefits from urban green spaces these articles provide an overview of what type of research has been done related to the positive effects of green spaces and present established evidence in urban open space justification. With the continued demand for land within urban municipalities, cities focus on land uses that create tangible economic benefits instead of green spaces. However, by examining green spaces in terms of their overall contributions to a city's potential ability to attract new residents and jobs will further quantify the overall value of urban open spaces to cities, leading to more funding and functional systems.

Conclusions- As seen in the research, there are many variables affecting commercial zone location within and among cities. This analysis tried to account for as many of these variables as data and time limitations allowed. However, the large number of additional variables such as incentive packages, land and transportation costs, proximity to a university, and positive business environments could not be accounted for in this analysis. However, the results produced by this study support the existing literature by providing evidence of the multi-catalyst nature of business location decisions and economic development around urban open spaces. The data analyzed does not account for all of the possible independent variables affecting business location. This study attempted to use this extension of municipality data to show city parks as a catalyst for metropolitan statistical area economic development. Given the results, the data wasn't sufficient to support this claim. Despite the study's limitations, it was able to add to existing literature by beginning to statistically show urban green space as a catalyst of economic development through its relationship to attracting college graduates and, in effect, commercial zones to cities. The study supports what was seen in recent literature and provides evidence for urging municipalities to shift the focus of attracting business by large incentive packages and tax breaks, to a method focusing on the quality of the community. By focusing on the quality of the current and future resident's experience in the city, through increased and more comprehensive green space planning, the city can attract both highly educated and skilled workers and business investment.

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