

Is Opera Part of Leisure-Oriented Redevelopment in the Largest U.S. Cities? An Empirical Assessment of a Historical Cultural Innovation

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Abstract

Analysis of the 25 most populated cities in the United States shows that all have at least one opera house. Most are located in the city's downtown, near City Hall, a convention center, high-end hotels, museums, and upscale dining and shopping opportunities. Most are surrounded by high-traffic-volume roads, providing easy access for visitors. Finding a massive opera house in an older city such as New York, Chicago, or Los Angeles is unsurprising. Yet, efforts to invigorate the downtowns of rapidly growing cities like Austin, Charlotte, and San Jose include opera houses. Opera houses, in short, are symbols that help cities project soft power and success. That soft power draws investors, tourists, and suburbanites for entertainment, as well as residents who want to live near cultural amenities. While opera houses strengthen cultural districts, boost the value of downtowns, and bring in revenue, they also displace people with limited incomes and restrict the development of affordable housing and land uses with limited real estate potential in cultural districts.

Keywords

Attractions, Culture, Development, Leisure, Opera, U.S. Cities

1. Introduction

For almost 400 years, amazing singing voices have told stories with emotionally triggering plots featuring love, hate, jealousy, war, family breakup, and other tragedies of life. Opera began as entertainment for kings, queens, other royals, and affluent families. Yet, the masses also found ways to enjoy operatic presentations despite being relegated to limited vision space.

Today, we still associate opera with economic privilege. The medium faces scrutiny for failing to provide equitable job opportunities and being too expensive for most people to attend. This paper does not address the equity and access issues facing opera per se, albeit these are important. Rather, we focus on what happens in the spaces around the opera house. To do this, we examined data for the 25 largest U.S. cities to answer three questions:

1) Have opera houses become a standard asset for developing or redeveloping the downtowns of large U.S. cities, along with convention centers, museums, expensive hotels, and high-value retail and dining?

2) How do the demographic and environmental characteristics of the areas surrounding opera houses in large U.S. cities compare to their host cities?

3) Are there differences in the locations of opera houses located in Northeast or Midwest cities compared to those in cities that are in the South or West?

To the best of our knowledge, this is the first attempt to compare the characteristics of areas immediately surrounding opera houses with those in their host cities and each other.

2. Literature Review

Two fascinating papers on opera houses as geographical expressions of a city's success and their ability to reach the most affluent and powerful populations spurred this study (Aspden, 2019; Leira & de Carvalho, 2024). Additional literature addressing the three research questions spans two major areas: 1) the development of opera as an art form, the appeal of opera to various audiences, and the high cost of maintaining the business, and 2) the opera house as part of a strategy for reviving the downtowns of U.S. cities. In addition, the idea of an opera house as a core part of leisure activities is a natural extension of economic central place theory. The theory was pioneered over 70 years ago in Germany (Christaller, 1966; Lösch, 1954) and the upper Midwest United States (Berry, 1963; Garner, 1966). The theory allows us to predict that the most desirable (and costly) cultural leisure amenities would be located near the "best" opera house in each city.

The literature begins with opera originating in Venice, Italy, in 1637, later spreading to Germany, France, England, and Russia. Performances catered to the egos of the wealthy and powerful, although their creators encouraged broader audiences to attend. Lower-status populations often squeezed into the edges of performance venues where they could not see much but could hear the drama played out in music. For some, merely attending was sufficient (Wilkinson, 2013; Wilson, n.d.). Today, some attendees might be issued standing-room-only tickets to participate in this leisure activity.

Opera grew in importance as it delivered emotional content about locally important issues. In France, royalty was celebrated, although much less so after the French Revolution when the royal court was replaced by the state and new plots around change developed. In Germany, the government strongly supported opera and encouraged the masses to attend, a practice that continues today. Evolving

social issues often generated plots and music to attract audiences and spur discussion. For instance, Richard Wagner weaved his personal and German society's views about controversial topics into operas, including his views on different religions. In Austria, Mozart's work dealt with the tensions in society surrounding the emergence of the bourgeoisie.

The idea that opera attracted only the elite is challenged by the facts. Paris had four opera houses in the mid-nineteenth century, and the owners adapted their offerings to different audiences (Zelechow, 1993). Because of its ability to include content for both elites and the masses, opera became widely appealing for its use of simple language to highlight emotionally appealing content. Recent examples include *Porgy and Bess*, *Nixon in China*, and *Dead Man Walking*, popular U.S.-based operas. Each highlights long-standing issues such as race, international conflict, and the death penalty (Note: *West Side Story* is considered a musical drama, not an opera).

Putting on an opera is expensive. Enormous costs are tied up in costumes, props, a director, conductor and orchestra, staging and lighting personnel, and scores of singers, especially the stars who must be scheduled many months in advance and paid large sums to perform (2023 Annual Field Report, n.d.; García, 2022; Reed, 2001). Revivals of historic European operas are critical to opera's economic survival because they are guaranteed to succeed. *The Marriage of Figaro*, *The Magic Flute*, *Madama Butterfly*, and *Tosca* consistently draw large numbers of people and sponsors, thus guaranteeing their economic success. But new productions may fail, and all the costumes, props, and other marketing and design features might end up in the nearest landfill (Reed, 2001).

Opera companies and the builders of lavish opera houses are under pressure to demonstrate the value of their efforts. For example, Santa Fe, New Mexico, has fewer than 100,000 residents, yet the Santa Fe Opera House has an annual budget of \$22 million and is increasing its facilities. Indeed, the Santa Fe Opera House has been rated first among the top 10 opera houses in the United States (The 10 Best North America Operas, n.d.), drawing many tourists into that city. Similarly, visitors to the Baseball Hall of Fame in Cooperstown, New York, may also choose to visit the Glimmerglass Opera House, which is only a few minutes away by car. Both venues contribute massively to the economies of the Cooperstown area.

In Australia, the Sydney Opera House has a striking appearance. Its management offers a great deal of information about the facility (Interesting Facts about Sydney Opera House, n.d.). For instance, Sydney held an international competition for its design, and while its construction was estimated at four years, it took 14. The original cost estimate for the building was \$7 million, but the final cost was \$102 million, funded primarily by a state lottery. New Jersey-born Paul Robeson was the first person to perform at the Sydney Opera House, although it was only informally by singing Ol' Man River from *Showboat* to the construction workers as they ate lunch. Queen Elizabeth II opened the Sydney Opera

House in 1973. The facility was added to UNESCO's World Heritage List in 2007.

The economic value of the Sydney Opera House has been assessed at five-year intervals, most recently for its 50th anniversary in 2023 (Deloitte Report, n.d.). The attraction was estimated to have contributed \$1.2 billion to the state economy that year, including over \$800 million in tourism. The value of the land and buildings is estimated at \$3 billion, and the overall value of this leisure property is \$11.4 billion. The authors conclude:

“It’s impossible to imagine Australia without the Opera House. As the most prominent human-made symbol of our national identity, it’s equal only to the koala and kangaroo in terms of its symbolic recognition.” (Deloitte)

The Sydney Opera House is a spectacular international attraction. However, using an opera house as a magnet to enhance a U.S. city's portfolio of assets began long before the facility was built. For example, Crosby's Opera House was built in 1865 to symbolize Chicago's emergence as a great city. Although Crosby's was destroyed by The Great Chicago Fire of 1871, it was replaced by others, one of which, the Lyric, is included in this study. Similarly, almost one hundred years after Crosby's Opera House was built, Boston concluded that it needed a modern opera house to attract popular entertainment. A master's thesis at MIT examined the factors needed for locating a modern opera house in Boston (O'Brien, 1960). The factors identified were high population density (especially of wealthy people), hotels to accommodate patrons, good restaurants, parking for their automobiles, and inexpensive land for all these facilities.

The broad appeal of opera as a symbol of success and an economic magnet led to the spread of opera houses to rural areas. For example, opera houses were important entertainment centers across the U.S. Great Plains during the period 1887-1917 (Ehlers, 2000). They closed when movie theaters became widespread, and automobiles allowed people to travel to them. In post-Civil War America, small towns tried to attract railroad stops, and an opera house was a signal to investors that a rail stop would be viable, attract new residents and investors, and host civic functions (Satterthwaite, 2016). Rural opera houses were simple structures, but their prominent locations demonstrated small U.S. communities' economic and cultural success. They were amazing illustrations of the diffusion of a long-standing, culturally-based leisure amenity to different types of environments.

Cost was and continues to be a bottom-line challenge for opera. Museums, theaters, and other facilities are expensive. Opera is even more so, seemingly worth the cost because of its historical roots and themes that lend an air of respectability to live entertainment. There is a typology of opera houses that explains how they fit into different cultures, their budgets, and how they respond to changes in the host society (Wilkinson, 2013). One consistency that cuts across them is that an opera house is a marker of prestige that can be marketed. Proponents of opera seek to bring the art to the masses, even those who do not live near opera houses. One solution has been to build opera venues near major economic investments

such as convention centers. For example, Spokane, St. Louis, and Houston illustrate U.S. cities that built an opera house in what is or was a convention center.

As the opera house with the largest seating capacity, The New York Metropolitan Opera House (MET) illustrates efforts to expand the leisure market. The MET's early attempts to reach the masses were through its long-standing opera broadcasts at 1 pm on Saturdays. Its first-ever live radio broadcast of opera was in 1931. Those broadcasts now total more than 1,800, with the MET presenting nearly 200 different operas (Heyer, 2008). The first author's parents listened to these before he was born, as did his sister, who became an opera singer before becoming a music teacher. These MET outreach programs continue and have been broadened through providing other venues.

The second part of the literature covers how opera houses became part of a strategy for reviving downtowns. Originally, large U.S. cities, especially those in the Northeast and Midwest, developed around manufacturing and port functions. Products were transported by rail, ship, and truck. The wealth created by manufacturing was re-invested in additional manufacturing enterprises, as well as in retail facilities, libraries, schools, zoos, and other enterprises that helped expand cities into larger metropolitan regions. New York City (including adjacent parts of northern New Jersey) was one of the first two cities in the world with 10 million residents (Tokyo was the second).

At its economic height following the Second World War, the United States had only six percent of the world's population, yet it produced over 60 percent of globally manufactured products (Branson et al., 1980). As manufacturing jobs dwindled in the second half of the twentieth century, cities were left with greatly reduced populations and budgets, along with contaminated and sometimes abandoned industrial properties. For example, in 1950, the ten most populated U.S. cities had an aggregate population of 20.8 million (13.8 percent of the national population). In 2024, the aggregate population of those cities was 19.2 million (1.6 million less and only 5.7 percent of the national total). Among these ten cities, only New York City and Los Angeles gained population. Baltimore, Cleveland, Detroit, and St. Louis lost over one-third of their populations and much of their industrial activity. These cities, especially their ports and downtowns, were financially devastated. Urban renewal projects of the 1950s and 1960s tended to ignore culture in their plans and instead focused on retaining manufacturing, adding office space, and building new housing (Strom, 2002).

Many U.S. cities constricted or demolished their downtowns, offered tax abatements, and paid for environmental cleanups and infrastructure to attract replacement activities. Some new activities were attracted by these incentives but left once they received a better offer (Eisinger, 2000). In the 1980s, leisure through culture and retailing became a winning combination for attracting new residents and investors to distressed downtowns. At the heart of the concept is creating areas with widespread appeal with attributes designed to attract residents who live in the greater metropolitan area, as well as tourists and investors.

These “global downtown” attributes were designed to enhance a city’s soft power. By 1990, American foreign policy focused on soft power to attract foreign partners rather than using military power and sanctions to coerce desired outcomes. Three decades later, soft power had taken paths in several directions. One involved city branding around policy views to build allies across the globe and act semi-independently of the U.S. federal government (Nye, 2021). Some focused on current issues such as preventing terrorism, managing climate change, and attracting investors (Sancino et al., 2022). This soft power approach also requires local governments to build a portfolio of physical assets, including opera.

We fully anticipated that many Northeast and Midwest U.S. cities that served as former manufacturing centers would be committed to the idea of marketing leisure activities through culture. Opera would be a natural resource as these cities lost much of their industrial base, and large portions of their populations had family ties to European cultures where opera flourished. To test this, we compared some U.S. Northeast and Midwest cities with Southern and Western ones. Northeastern and Midwest’s largest cities have been remaking their downtown areas, especially since they began to lose their manufacturing base after 1960. For example, Chicago massively redeveloped its downtown “loop” area to feature art galleries, high-rise housing, hotels, museums, parks, and its highly-rated Lyric Opera House. Philadelphia has been trying to redevelop the northern part of the city, including a plan to build around its Metropolitan Opera House, which is considered one of the best in the United States. Opera was not new in these cities, but viewing an old asset in a new location was an effort to bring additional investments to distressed areas.

In contrast with Northeast and Midwest cities, those in the South and West were much less dependent on manufacturing and had less family history linked to Europe. Furthermore, many more than doubled their population since 1960. Would these cities also include opera as part of their future downtowns? There is evidence that Southern and Western cities also focus their renewal efforts on culture. For example, San Antonio has had ambitious plans to revitalize that city around cultural influences (Goodman, n.d.). Goodman’s report calls for a “cohesive” effort by San Antonio organizations to adapt the culture asset model to city plans. While San Antonio’s efforts are appealing, we should find additional evidence that places of substantial economic and political importance are located near opera houses. Thus, we evaluated the 25 largest cities and their main opera houses for proximity to a convention center, major museum, expensive hotel, upscale shopping, restaurants, and City Hall. From central place theories we expected to find that 1) the area surrounding the opera house would be marked by high population density and high-volume highways (providing access for suburban residents) and 2) residents of areas surrounding the opera house would be relatively healthy, with few being of low socio-economic status or young age (evidence of displacement by increasing land values).

3. Methodology

Our research design was a hybrid of qualitative and quantitative methods. We used publicly available data sets and simple statistical measures to find major patterns addressing the research questions and supplemented them with short case studies.

The United States has 125 opera houses ([American Opera, n.d.](#)). Some of these are devoted to opera, and others have multiple roles. We focused on the 25 most populated U.S. cities, ranging in size from New York City (>8 million) to Boston (~650,000). As they all had one or more opera houses, we identified their highest-rated one as our standard location in all 25 cities.

We used national and local databases to read about and determine the locations of city halls, convention centers, hotels, and museums in the same cities. Using a list of the best museums in each city, we chose its highest-rated one ([Tripadvisor, 2024](#)). We found the most highly-rated hotel chain in the United States, covering tens of thousands of hotels owned by Marriott, Hilton, Intercontinental, and Wyndham. As Marriott ranks number one because of its large number and variety of hotels ([Hotel Brands, n.d.](#)), we chose the one nearest to the opera house as the standard.

For restaurants and shopping, we used Yelp ratings. Yelp ranks the ten most expensive clothing stores and restaurants in major cities, is informed by customer surveys, and is available for all the cities we studied ([Yelp—Company—Fast Facts, n.d.](#)). One of the advantages of Yelp is that users can see the data on maps. We then used Google Maps to measure distances from opera houses to the city hall, convention center, hotels, museums, and the most expensive restaurant and clothing store in each city.

The U.S. Environmental Protection Agency built EJScreen in 2015 and released it publicly ([US EPA, 2023](#)). The agency consistently updates demographic, economic, environmental, and health data, as well as industrial and waste management hazard locations. A critical attribute of EJScreen is a built-in GIS tool that allows users to gather data for polygons (circles, rectangles, triangles, user-designed polygons), as well as by state, county, non-county local governments, and census tracts. We used the GIS tool to locate the 25 opera locations and drew a one-half-mile radius circle around each one (0.79 square miles). We then compared that information with data for the host city.

A second complimentary attribute of EJScreen is that it provides the same metrics for small areas, as well as cities, counties, states, and the United States. Therefore, rather than reading data measured as the distance from a site, others in parts per million, and so forth, the numbers can be compared by dividing the results for the opera area by the results for its host city. A ratio less than 1 means the opera area has a lower value than the city as a whole.

Because the number of cases (25) is small, we selected simple statistical tools. We used the median and the 25th and 75th percentiles to present the statistical results for the tests of distance from the opera houses, and we added qualitative

summaries to enhance these simple quantitative comparisons.

The Sign Test measures consistent differences between pairs of observations. We used it to determine if one member of the pair (the one-half-mile radius area around the opera house) has a higher traffic density than the other member of the matched pair (the host city). As the Sign Test is non-parametric, it makes few assumptions about the nature of the distributions being evaluated, which means it is useful when the data are imperfect. The limitation of the Sign Test is that it lacks the statistical power of parametric matched pair tests, where large differences are heavily weighted. Overall, the Sign Test is conservative. We supplemented the results from the Sign Test by using some of the parametric raw data in our presentation of results.

Lastly, we used the median test to compare the seven Northeast and Midwest cities in this study with the 18 Southern and Western ones. The median test is used to quickly determine whether there is a difference between two independent samples of unequal sample size. If one of the two sets is disproportionately on one side of the median and the second set is on the other, the test will estimate the probability that the difference between them is statistically significant. As our groups are of different sizes, at least five of the seven Midwest-Northeast cities need to fall on one side of the median for there to be a finding of statistical significance.

4. Results

4.1. Preliminary Results

Table 1 lists the largest opera houses in the 25 largest cities in the study. Ranked by population size, the cities show marked differences in population density and change between 1960, when the United States was only beginning to feel the loss in manufacturing-related jobs, and 2024. Boston, Chicago, Philadelphia, and Washington, D.C. lost population, while 14 of the 25 largest cities more than doubled their populations. Austin, Charlotte, Jacksonville, Nashville, San Jose, and Seattle more than tripled theirs. Note the wide variation in population density exemplified by Boston, Chicago, Philadelphia, New York City, San Francisco, and Washington, D.C., with more than 10,000 residents per square mile compared to Jacksonville, Nashville, and Oklahoma City, with fewer than 2,000 residents per square mile. Also, a report on extreme wealth in the United States shows that eight of our study cities have at least ten billionaires (*America's Wealthiest Cities*, n.d.). Presumably, cities with more people and the wealthiest people have an advantage in supporting opera.

All 25 of the largest U.S. cities have at least one opera house. New York's MET has the highest capacity at 3,850 seats. Bayley Hall on the University of Las Vega Campus has a capacity of 550. The median number of seats in the 25 opera houses is 2,365, with 25th and 75th quartiles at 2,115 and 2,940, respectively.

Music & Arts (*The Vault*, 2019) reported the five highest-rated U.S. opera houses for quality (in rank order: New York City, Los Angeles, Chicago, San Francisco, and Fort Worth). All are located within the 25 most populated U.S. cities.

The F (*Opera Houses Every Music Lover Should Visit in the States, 2023*) listed nine U.S. opera houses every music lover should visit. Seven of them are in the 25 most populated cities (Boston, Chicago, Dallas, Houston, New York City, San Francisco, and Seattle). The exceptions are Cincinnati (311,000 residents) and Santa Fe (89,000 residents).

Table 1. Twenty-five opera houses and their cities in the study.

	Opera house and location	2024 population, millions	2024 gross population density, mi ²	1960 population, millions	Population change, 1960-2024, millions
1	Metropolitan Opera House, Lincoln Center, New York, NY	8.097	26,950	7.782	0.315
2	Los Angeles Opera House, Los Angeles, CA	3.796	8,068	2.479	1.317
3	Lyric Opera House, Chicago, IL	2.638	11,584	3.550	-0.912
4	Wortham Theater Center, Houston, TX	2.319	3,620	0.938	1.381
5	Symphony Hall, Phoenix, AZ	1.663	3,208	0.439	1.224
6	Metropolitan Opera House, Philadelphia, PA	1.534	11,416	2.002	-0.468
7	Tobin Center, San Antonio, TX	1.514	3,034	0.588	0.926
8	Civic Center Plaza, San Diego, CA	1.389	4,260	0.573	0.816
9	Winspear Opera House, Dallas, TX	1.303	3,835	0.680	0.623
10	Florida Theatre, Jacksonville, FL	0.997	1,334	0.068	0.929
11	Bass Performance Center, Fort Worth, TX	0.997	2,846	0.356	0.641
12	Long Center for the Performing Arts, Austin, TX	0.985	3,017	0.187	0.798
13	California Theater, San Jose, CA	0.956	5,375	0.204	0.752
14	Opera Carolina, Charlotte, NC	0.923	2,971	0.202	0.721
15	Ohio Theater, Columbus, OH	0.915	4,147	0.471	0.444
16	Basile Opera Center, Indianapolis, IN	0.877	2,428	0.476	0.401
17	War Memorial Opera House, San Francisco, CA	0.788	16,884	0.740	0.048
18	Seattle Opera in McCaw Hall, Seattle, WA	0.760	9,047	0.216	0.544
19	Ellie Caulkins Opera House, Denver, CO	0.716	4,679	0.494	0.222
20	Oberholser Opera House, Oklahoma City, OK	0.709	1,170	0.324	0.385
21	Tennessee Performing Arts Center, Nashville, TN	0.687	1,445	0.171	0.515
22	J. F. Kennedy Center, Washington, D.C.	0.682	11,152	0.764	-0.082
23	Plaza Theater, El Paso, TX	0.679	2,623	0.277	0.402
24	Judy Bayley Theater, Las Vegas, NV	0.666	4,692	0.064	0.602
25	Citizens Opera House, Boston, MA	0.647	13,377	0.697	-0.050
	Totals	37.2		24.7	

Sources: U.S. Census Bureau, 1967, 2024; America's Wealthiest Cities, n.d.

Opera programs have also been rated according to the size of their budgets

(American Opera, n.d.). Eight of the 10 U.S. opera programs with the largest budgets are in the 25 most populated cities (in alphabetical order: Chicago, Dallas, Houston, Los Angeles, New York, Philadelphia, San Francisco, and Seattle). The two exceptions are in Detroit and Santa Fe, which challenge the assumption that in the United States, opera houses can only flourish in the largest cities.

Trip Advisor lists 112 opera houses in the United States, ranking the top ten (The 10 Best North America Operas, n.d.). Their top five are in New York City (with two listed), Chicago, San Francisco, and Boston. The remaining five are in less populated tourist locations (Cooperstown, NY; Omaha, NE; Sarasota, FL; Santa Fe, NM; and Wilmington, DE). The median number of seats in these five is 1,208, about half the capacity of opera houses in the 25 largest cities.

It is important to note that a larger city population does not directly translate into a larger opera house. Among the 25 cities, the Spearman rank correlation between city population size and opera house capacity was only $Rho = 0.28$. Based on population size, Boston, San Francisco, Seattle, and Washington, D.C. have relatively more seating capacity than many rapidly growing Western and Southern cities (e.g., Jacksonville, Phoenix, San Antonio, and San Jose). The stronger association with opera house seats is with population density ($Rho = 0.57$, $P < 0.05$) rather than population size.

4.2. Distance from Expected Land Uses

While all 25 cities have an opera house, is it proximate to City Hall, a convention center, a Marriott hotel, and the highest-rated museum, clothing store, and restaurant, as expected? **Table 2** shows that most of these venues are within a 10-minute auto ride from the opera venue. City Hall and a convention center are usually within walking distance.

Table 2. Distance of opera houses from other downtown land uses built around culture*.

Variable	Median (25, 75 percentiles)
Distance from city hall:	
• minutes by auto	• 5 (3, 8)
• miles	• 0.8 (0.8, 1.6)
Distance from the convention center:	
• minutes by auto	• 6 (4, 12)
• miles	• 1 (0.6, 1.8)
Distance from the nearest Marriott hotel	
• minutes by auto	• 8 (5, 11)
• miles	• 1.2 (0.8, 5.7)
Distance from the highest-ranked museum	
• minutes by auto	• 10 (6, 14)
• miles	• 1.9 (1.1, 8.8)

Continued

Distance from the most expensive restaurant	
• minutes by auto	• 11 (5, 22)
• miles	• 2.3 (0.8, 9.1)
Distance from the most expensive clothing store	
• minutes by auto	• 11.5 (10, 20)
• miles	• 4.5 (1.8, 7)

*Distances calculated by Google Maps program.

Expected land uses that are not nearby represent interesting exceptions. New York City's Metropolitan Opera House, or the MET, is one. New York City is a multiple nuclei city. Thus, it has not only the largest opera house in the world as measured by the number of seats but also several other smaller opera venues. The MET is located within Lincoln Center for the Performing Arts, more than five miles from City Hall and almost two miles from New York's largest convention center. It sits at the southwest corner of Central Park, close to museums, art galleries, a zoo, and hotels.

Multiple New York City opera houses preceded the MET. In 1847, the Astor Opera House was built between Astor Place and East 8th Street, about 1.5 miles from City Hall. In 1883, the Metropolitan Opera House was moved further north at 39th Street and Broadway. Widely called the "Yellow Brick Brewery," it was demolished in 1967 despite its historic role and to avoid competition with the new MET at Lincoln Center ("**Old** Metropolitan Opera House, n.d."). In short, New York's most famous opera house has moved northward, much further from City Hall over the years. This makes it easier for New Yorkers to reach than when it was located in lower Manhattan. The 1-mile area surrounding Lincoln Center is now occupied by extremely wealthy people in high-value homes (Greenberg, 2022).

Opera Las Vegas is another exception. Las Vegas Opera uses multiple venues. The main stage is more than five miles from City Hall on the University of Las Vegas campus. By far the smallest opera house in this study, it is home to an ambitious group of opera lovers who hope their efforts will draw local patrons and visitors to the city (Greg, 2021). Las Vegas is seeking to broaden its attractions to bring in more people, especially professional sports fans, but it has not similarly prioritized opera.

Indianapolis is the third city where the main opera house is not proximate to other expected attractions. It was failing economically and had been taking performances to various local venues to survive. The company nearly folded in 2010 and had to cancel its 2014-2015 season. It restructured in 2015, embracing a twenty-first-century business model. As the opera and multiple businesses are now in the same conversation, the facility is flourishing, even posting seven consecutive years of modest operating surpluses (Basile Opera Center, n.d.).

In contrast to the above three exceptions where the opera house is not close to the downtown core, those in Charlotte, Fort Worth, Jacksonville, San Antonio,

and San Jose are close to the other expected land uses. All five cities more than doubled their populations since 1960 and ranked 1 to 5 of the 25 largest cities in percent population change 2020-2024 (see **Table 1**). They have taken advantage of growing wealth and ample space to design their downtowns with opera and other leisure-based cultural assets in mind.

4.3. Environmental and Demographic Characteristics

Four variables were used to determine if the surrounding environments of the 25 opera-house areas (0.79 square miles) were different from those of their host cities. The first four rows of **Table 3** show those results. Two of the four were as expected: traffic density (median ratio of 1.16) and population density (median opera house to city ratio of 1.8). Both show that areas around opera houses have a high density of auto traffic and people. Google Maps and EJScreen show that the small areas surrounding the opera houses have high traffic density. Indeed, some are among the highest in their host states. Most of the study opera houses are surrounded by roads in three or four directions. Usually, there are interstate highways or state roads within one-half mile of the opera house. For instance, Jacksonville is surrounded on all four sides by major federal and state roads, including two on the south crossing St. John's River. Near the Florida Theater in Jacksonville are multiple museums, a large football stadium, and hotels.

Table 3. Environmental and demographic comparisons of the opera-house areas and surrounding areas.

	Ratio of opera house area to host city (25 th , 75 th medians)	Number of opera house areas with expected results compared to their host city
Environmental Measures		
Traffic density, 2020	1.16 (1.08, 1.37)	22 of 24**
Population density ratio, 2018-2022, compared to host city	1.80 (1.18, 2.51)	21 of 25**
Housing built after 1960, 2018-2022	0.93 (0.62, 1.20)	16 of 24
Flood risk location, 2022	1.10 (0.69, 1.30)	10 of 23
Demographic Measures		
Asthma rate, percentile, 2022	0.97 (0.31, 1.43)	17 of 25*
Lacking health insurance, <65 years old, percentile, 2022	0.69 (0.35, 0.93)	19 of 24**
Age less than 5 years, percentile, 2018-2022	0.49 (0.30, 0.73)	23 of 25**
Poverty, percentile, 2018-2022	0.97 (0.62, 1.17)	15 of 25

Source: EJScreen, Sign test: ***P*-value < 0.01, **P*-value < 0.05.

Charlotte has two opera venues. The Belk and Opera Carolina are located six minutes apart and are surrounded by multiple highways. In Columbus, the Ohio

Theater is ringed by roads. San Francisco has had a fairly stable population since 1960, yet major roads still surround its War Memorial Opera House. In other words, regardless of population size and change, opera houses in all the largest U.S. cities are accessible by metropolitan populations via major highways.

We found two exceptions where the opera house zone has relatively low values of traffic density compared to the surrounding area and the city. One is Boston's Citizens Opera House, which has interstate routes 90 and 93 to the east and south. However, the Boston Common and Public Garden are a 3-minute walk from the opera house, which means less immediate traffic. The second exception is Indianapolis's Basile Opera House, which has a suburban-like setting rather than a downtown one.

Also, as expected, population density is notably higher in the opera areas than in the remainder of nearly every other city. The four exceptions (Boston, Columbus, Fort Worth, San Antonio) are instances where the opera house has fewer people because of a combination of adjacent parkland and land use dominated by non-residential commercial buildings and the highways that serve them.

Housing built since 1960 is less prevalent in the opera areas than in their host cities (median ratio of 0.93). The flood risk data show that these redeveloped areas are slightly at higher risk of a serious flood than their entire cities (median ratio 1.10). Newer housing construction and flood risk are discussed in greater detail in the city comparison section below because there is a clear regional pattern to the results.

The findings for the variables that measure demographic and health characteristics are largely as expected. We note that the number of measures used was limited because of limited health data. For example, in small geographical areas, the data sometimes are not released because government analysts do not trust their reliability. We did find data for some of the opera areas, but it was skewed. In seven cities, the opera house area/city ratios exceeded 2.5, and in six others, it was less than 0.10. These are clear signs of extreme values associated with small population size.

We expected that residents in the opera house areas would be advantaged in health outcomes compared to those in the rest of the city. This shows up in the health insurance numbers where the opera areas are estimated to have a lower rate of not having health insurance (median ratio 0.69). It is less apparent in the asthma rate (median ratio 0.97). We find evidence of population size issue challenges with small populations in the asthma data set, especially in the opera areas in the least populated cities.

As expected, the opera house areas have lower proportions of young children than their host cities. We posit this is because the high cost of housing in the opera house areas is problematic for many families with young children (median ratio 0.49). We also expected that poor persons would be displaced in the areas proximate to the opera houses. Across the set of 25 cities, this is the case, but not as consistently as we had expected (see city comparisons below).

4.4. Comparisons of Cities by Region

Table 4 compares the metrics from the seven opera house areas in the Northeast

and Midwest cities with the 18 in the Southern and Western cities with the median test. Three of the 14 are statistically significant. The largest difference is the distance from a convention center. The Southern and Western city opera houses are notably closer to their convention centers than their counterparts in the Northeast and Midwest ($P < 0.05$). This is also the case for distance from the city hall ($P < 0.30$). Assuming people can walk a mile in 20 minutes, they can walk from the Charlotte, Denver, Fort Worth, Houston, Phoenix, San Antonio, San Diego, and San Jose opera houses to their city halls and convention centers in 20 minutes or less. This is only the case in one of the Northeast and Midwest cities (Columbus).

Table 4. Comparisons of the opera-house areas in the northeast and midwest u.s. cities compared to the southern and western ones.

Variable	Median value: Northeast and Midwest Cities (n = 7)	Median value: Southern and Western Cities (n = 18)
Distance measured in minutes by automobile from opera house to the following assets		
City hall	8	5***
Convention center	13	5*
Nearest Marriott hotel	7	8
Highest ranked museum	8	11
Most expensive restaurant	10	15
Most expensive clothing store	13	11
Environmental Measures		
Traffic density, 2020	1.09	1.17
Population density ratio, 2018-2022, compared to host city	1.71	1.93**
Housing built after 1960, 2018-2022	0.60	0.98
Flood risk location, 2022	0.73	1.25
Demographic Measures		
Asthma rate, percentile, 2022	0.98	0.97
Lacking health insurance, <65 years old, percentile, 2022	0.56	0.71
Age less than 5 years, percentile, 2018-2022	0.72	0.41
Poverty, percentile, 2018-2022	0.87	1.00

Source: EJSscreen, Sign test: ** P -value < 0.01, * P -value < 0.05.

The results for distances from the highest-ranked museum, expensive restaurant, and clothing store differed from those to the convention centers and city halls. The Southern and Western cities tended to be slightly more distant. Charlotte, Denver, and Fort Worth have been the most successful at clustering these six assets with their opera houses. Suffice it to say that people who want to see an

opera may apply different weights to this portfolio of attractions.

The environmental and demographic results in **Table 4** begin with population density. Boston, Chicago, New York City, Philadelphia, San Francisco, and Washington D.C. have gross population densities exceeding 10,000 people per square mile. Yet their host cities also have high population densities. Their population density ratio is 1.71. Among the 18 Southern and Western cities, only San Francisco has a density of 10,000 or more per square mile. Yet the ratio for the Southern-Western cities was 1.93. The ratio in **Table 4** is higher for the Southern and Western cities because the downtown areas that host the opera houses are relatively low compared to the outskirts of these cities. This is not the case in the Northeast or Midwest. For example, Charlotte, Oklahoma City, and San Diego have higher opera house area/city population density ratios than New York City.

Regional differences are found in several other rows in **Table 4**. Housing construction has markedly increased in Austin, Charlotte, Jacksonville, Las Vegas, Nashville, and Seattle. The ratio of new housing in the opera areas is almost as high as in the remainder of their host cities (median ratio 0.98). In contrast, the median ratio in the seven Northeast-Midwest cities is only 0.60. In other words, considerable investment in new housing occurred in the Southern and Western cities compared to their Northeast-Midwest counterparts.

Table 4 shows a flood risk ratio of 1.25 in the Southern and Western cities, that is, the opera area risks of flood exceed that of the remainder of the host Southern and Western cities. Visible on maps, many of these cities are constructing new housing near rivers in the downtown areas to build out their planned land uses. The comparable ratio for the Northeast-Midwest cities was 0.73.

Regarding the demographic measures, the metric that stands out is the low ratios for young children, especially in the Southern and Western cities (median ratio 0.49). These areas have become places for working people with no young children or few children who need or want access to these valuable downtown spaces.

5. Discussion

We asked three research questions. The first asked if opera houses have become a standard asset in downtown redevelopment for large U.S. cities. The answer is yes for all within walking distance of a city hall and a convention center. They are a short automobile ride from other cultural and retail attractions. The second question asked how the demographic and environmental characteristics of the areas surrounding opera houses in large U.S. cities compare to their host cities. The areas are marked by high population density and high automobile traffic density. Young children are notably underrepresented in the opera areas compared to their host cities, and their current population has favorable health metrics. The third question asked if there are differences in the opera areas between Northwest and Mideast cities on the one hand and their Southern or Western counterparts in clustering of cultural and upscale attractions. We found that Charlotte, Denver,

and Fort Worth have achieved the most clustering of leisure-based cultural and retailing attractions among the 25 cities. Several other Southern and Western cities also demonstrate a considerable degree of clustering of these attributes, including their main opera house. The Northeast and Midwest cities do not show the same degree of concentration of these land uses.

6. Conclusion

While opera has been stereotyped as leisurely entertainment for older and wealthy non-Hispanic Whites in the United States, the reality is that it has diffused as a magnet, along with other cultural and retail amenities across American cities, and has had salience in rural areas as well. In all these locations, opera venues remind locals and outsiders that their city is successful and a good place to invest and live. The main conclusion from this study is that all 25 of the most populated U.S. cities include opera houses that suburban residents and tourists can attend, as well as visit museums, dine in expensive restaurants, and shop in upscale places concentrated in “cultural districts”. The areas are surrounded by highways and accessible systems that allow visitors quick entry and egress. Some may choose to stay in a nearby upscale hotel; others may decide to relocate so they can reside near these amenities. While we may consider the opera houses in New York City, Los Angeles, Chicago, Boston, and Washington D.C. as the most prominent because of their size and elegance, the tighter clustering of opera houses with other attractions in the newer Southern and Western cities gives these cities an advantage of easier access to multiple cultural and retailing venues. Given the purposes of this study, we cannot say which set of cities is more or less advantaged.

Limitations of the Study

A limitation of this study is that empirical data and city and business plans can lead to misleading conclusions about what has happened in these areas. We think that opera supporters have prioritized including opera in city plans, master plans, and strategic plans. Likely, some of the same people who have pushed for opera as a centerpiece are also involved in pushing for the location of the best hotels, restaurants, and other assets. It is also possible that each asset has a history and development trajectory independent of the others. Written plans and media reports we read may accurately report reality. However, the bottom line is having key players, especially proponents of the siting process, willing to share those details. In short, we can connect the dots between case, master, and strategic plans, but not to the extent needed to draw definitive conclusions about the players and their contributions.

Future Recommendations

If we want to know the precise role of opera in innovative designs for building or rebuilding leisure-oriented downtown areas, economic impact assessments are required to estimate the costs and benefits associated with investing in the art form.

The report on the Sydney Opera House (Deloitte Report, n.d.) illustrates the kind of studies needed. However, as developers of economic impact studies, we emphasize that considerable care needs to be taken to pick an economic approach that is not biased toward overstating or understating the impact of the opera facility compared to other investments. The second and perhaps more challenging recommendation is to interview key players to determine the application of economic and political power to determine what triggered and implemented project, master, and strategic plans for opera houses and related projects. Case studies would produce valuable lessons learned about opera's direct role in these area-wide efforts, but ultimately depend upon cooperation from the facilities and their developers.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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