Arts Organizations and Community Socioeconomic Development

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ABSTRACT

This paper studies the effects of arts organizations on local socioeconomic development at the U.S. ZIP code tabulation area (ZCTA) level. While prior studies have qualitatively examined the impact of the arts industry or artistic individuals on their communities, few have approached this question econometrically, and even fewer have investigated the effects of arts organizations specifically. My analysis examines data from Southern Methodist University's Cultural Data Profile, which contains financial and programmatic information through an online survey on nonprofit arts, culture, and humanities organizations, combined with American Community Survey 5-year estimates for a variety of ZCTA-level demographic and economic measures. First difference regressions estimate how the founding of arts organizations over recent five- and 10-year periods impacts gentrification, economic health, racial demographics, median home value, and resident displacement over the corresponding period. During 2012-2022, new arts organizations are estimated to affect all of these categories, most strongly in urban areas. This conclusion largely holds for both of the encompassed five-year periods as well. Specifically, when more arts organizations are founded, community gentrification levels, economic development, and home values all increase, but these socioeconomic improvements are accompanied by reduced racial diversity.

JEL Classification: J11, Z11

Keywords: Arts organizations, arts industry, community development, gentrification

INTRODUCTION

In 2022, there were over 100,000 arts and culture nonprofit organizations in the United States that generated an estimated $151.7 billion of economic activity, leading many to argue that investment in the arts is a necessary part of urban planning to promote not only cultural vitality, but also economic and social prosperity (Cohen, 2023). In the 1960s, public arts funding surged across the United States, coinciding with the establishment of the National Endowment for the Arts, among other state and city-based initiatives, through which arts policy sought to both expand cultural programming and revitalize communities (Markusen & Gadwa, 2010).

Arts organizations often focus on goals such as gentrification, defined from the "revitalization" perspective as re-investment in a given neighborhood and an increase in social status over time (Freeman, 2005; Ley, 1989). Even if not intended, the arts, broadly defined, can prospectively add value to local economies in the form of employment growth, reduced poverty, and increased housing values. However, longstanding dialogue argues that increased arts presence can inadvertently spur negative consequences such as decreasing racial and ethnic diversity and displacing current residents who can no longer afford to live in corresponding neighborhoods. These contradicting impacts can potentially occur simultaneously. Therefore, this paper seeks to examine the socioeconomic effects of arts organizations across the U.S., particularly those established over the last decade.

There exists a large body of research on the association between the arts and local economies, particularly regarding community developmental contributions of the arts. An "artistic dividend" from art and artists might accrue to local and regional economies through exports, improved productivity in non-artistic industries, and increased tourism (Markusen & Schrock, 2006). Through an artistic dividend, artists contribute to economic growth in other

sectors. The concept of the creative economy more broadly considers economic growth generated by the arts and creatives. As such, most literature examines the arts as a general term encompassing different audience targets and different arts groups (performing arts, fine arts, commercial arts, etc.). The lack of substantial formal inquiry into the effects of arts organizations and communities on economic development is what this paper attempts to reconcile.

Specifically, this paper estimates the social and economic effects of community arts organizations on their local neighborhoods. The focus is on arts organizations, defined as private nonprofit organizations that aim to promote the visual, performing, folk, and media arts; the humanities; history and historical events; and/or communications (Cultural Data Profile, 2022). Such an organization might include a community museum, a performing arts venue, or a media arts center. Importantly, the organizations studied here have a physical location. For example, MASS MoCA was established as an arts center in North Adams, Massachusetts, in 1999, and subsequently. Neighborhood property values rose by 20% with accompanying wealth effects.

However, two important questions remain. First, did the establishment of MASS MoCA actually cause the corresponding increase in property values and wealth, or rather, did the latter make the former more attractive or possible in the first place? Second, if the direction of causality does indeed run from MASS MoCA's founding to rising home prices, who benefited from this real estate appreciation, given the possibility that existing residents were priced out of their homes (Markusen & Gadwa, 2010)? Another example is the privately funded creation of Wynwood Walls in Wynwood, Miami, in 2009. Once composed of abandoned large-scale buildings, Wynwood became Miami's arts haven and even attracted the art fair Art Basel to the city.

These types of organizations are what this research explores, through examining neighborhood changes that accompanied the establishment of 1,170 arts and cultural organizations across the U.S. after 2012. Organizations are grouped by U.S. ZIP code tabulation area (ZCTA) and paired with data from the U.S. Census Bureau on corresponding ZCTA-level economic and demographic changes to identify whether these represent causal impacts on wages, property values, employment, and racial diversity, and to estimate the sizes of these impacts. With these data, I run first difference models to net out ZCTA-level fixed effects and thereby analyze the socioeconomic impacts of arts organization formation.

LITERATURE REVIEW

I. Artistic Dividend

Historically, the economic contribution of the arts has been viewed almost exclusively through the lens of arts organization revenues and associated expenditures by patrons. However, this understanding has of late been broadened to incorporate additional value levers. Specifically, the notion of the artistic dividend, defined as art's economic contribution to its community outside of the arts community itself, emerged in 2006 and has been heavily employed since then (Markusen & Gadwa, 2010; Markusen & Schrock, 2006; Silver & Miller, 2012). In this way, the artistic dividend becomes a public good that can be further cultivated through investment in the arts.

II. Key Variables

Using this definition, more recent research encompassing both sides of the gentrification debate has looked at the implications of the artistic dividend on indicators of community socioeconomic health, such as income, unemployment, resident displacement, demographic makeups, property values, and education levels (Noonan, 2013). Importantly, much of this

research does not quantitatively analyze the effects of specific forms of an arts presence on communities, but rather analyzes the presence of a broader arts industry or cluster, defined differently across studies (Grodach, 2010; Markusen & Gadwa, 2010; Markusen & Schrock, 2006).

Among statistically grounded papers, findings generally suggest that the presence of cultural clusters, defined as "formally designated or labeled areas with high concentrations of cultural activities and institutions" (Noonan, 2013, pp. 203; Stern & Seifert, 2010); public art (Serinshe et al., 2016); and arts organizations (Foster et al., 2016) are associated with greater population densities, higher housing values, employment growth, and lower poverty rates (Foster et al., 2016; Noonan, 2013; Seresinhe et al., 2016; Stern & Seifert, 2010). However, results do not consistently hold up against tests for causality and endogeneity, as described below, and these findings are not completely consistent. For example, Sands and Reese (2012) find a negative correlation between a creative class population and economic health, but their broad definition of a creative class includes: Education level, employment in creative occupations (ex. engineering, mathematics, arts, entertainment and design) and creative industries (ex. professional, scientific and technical services; arts, recreation and entertainment services), and immigrants.

Even among quantitative papers, many do not examine racial demographic effects (Foster et al., 2016; Markusen & Schrock, 2006; Plaza, 2008; Sands & Reese, 2012; Seresinhe et al., 2016; Stern & Seifert, 2010), and among those that do, the results are mixed. Grodach et al. (2014) find a positive but weak correlation between the commercial arts industries and the proportion of the population that is white. However, causality is difficult to determine, as these industries tend to be located in areas with already high levels of socioeconomic change

occurring. Conversely, for both simple comparison models and a more robust model that leverages neighborhoods' own trajectories, Noonan (2013) finds that cultural districts have no racial demographic effects on neighborhoods (pp. 203). However, his definition of cultural districting, as mentioned above, is purposefully general, and what constitutes culture is not standardized across studies.

Additionally, some research considers the relationship between the arts and tourism (Markusen & Gadwa, 2010; Plaza, 2008). Plaza (2008) argues that a heritage investment, defined as a large cultural investment in a developing a city (ex. a museum), only helps spur employment if it can increase tourism. However, others argue that a resident-focused policy enables the city to capture resident income that might otherwise be spent externally, thereby attracting new residents who prioritize quality of life (Markusen & Gadwa, 2010). This differing opinion thus raises the question of whether arts policy and organizations should prioritize residents or tourists. Even so, Plaza (2008) finds that while tourism is a requirement for a heritage investment to become an economic reactivator, it must occur in locations with high industry diversity and labor productivity and where most goods are produced locally, so that the new tourists consuming these goods are contributing to the local economy. Thus, given that past literature acknowledges the value of organizations focused both on residents and tourists, my analysis studies both types of organizations.

III. Neighborhoods Most Likely to Be Impacted by an Arts Presence

Moreover, some research examines the *types* of neighborhoods that are most likely to be receptive to the development of an artistic dividend (Foster et al., 2016; Grodach, 2010; Silver & Miller, 2012; Stern & Seifert, 2010). As for economic growth, the presence of artist concentrations is found to increase local wages more strongly in "more self-expressive,

glamorous, and charismatic scenes", defined by coding 1,800 local amenity categories into 16 qualitative dimensions (Silver & Miller, 2012). Similarly, neighborhoods with a pre-existing arts industry or arts and cultural activity are more likely to see increased housing prices and broader economic growth over time (Grodach, 2010; Stern & Seifert, 2010). Outside of pre-existing artist populations, Foster et al. (2016) find that the arts are most economically beneficial to neighborhoods with high levels of racial diversity and low levels of income and industry diversity, with economic health measuring the poverty rate, the unemployment rate, and the percentage of the population on public assistance. However, neighborhoods with moderate levels of racial diversity and high levels of income and industry diversity seem to most frequently have an arts presence.

Furthermore, diversity can be at odds with economic development. Notably, cities with high creative class populations often see higher levels of socioeconomic inequality, and there is a strong correlation between ethnic and racial diversity and economic disadvantage (Foster et al, 2016). Therefore, it becomes important to analyze economic, demographic, and other social outcomes separately. Whereas many studies create complex indices for gentrification, revitalization, and other neighborhood changes, this paper uses more conservative definitions to isolate specific impacts of arts organizations.

IV. Causality

Only a few studies in this area raise the issue of causality (Foster et al, 2016; Markusen & Gadwa, 2010; Markusen & Schrock, 2006; Noonan, 2013). While increased arts funding can contribute to the creation of an artistic dividend, causality might also or instead run in the opposite direction. Specifically, Markusen and Schrock (2006) theorize that arts funding increases may be tied to wealth growth, with pre-existing gentrification (and thus the presence of

wealthier individuals) catalyzing the arts industry rather than or in addition to arts presence raising median income (Markusen & Schrock, 2006).

However, few studies attempt to address this issue of causality statistically. One exception is Foster et al. (2016), finding that arts organizations tend to be located in areas with high industry diversity and thus neighborhoods that have already experienced some level of economic development. As such, the potential for further economic development is lower than that for disadvantaged neighborhoods, where arts organizations founding is thus associated with greater economic benefit. That being said, tests for a causal relationship hold. The study employs Hausman's test for endogeneity by first regressing change in neighborhood disadvantage on the presence of new arts organizations, incorporating the regression residuals into the original equation. Second, the study included an endogenous dummy treatment effect, with treatment defined as the establishment of new arts organizations as predicted by the presence of pre-existing arts and demographic measures. Both methods show insignificant results, thereby implying that arts organization founding can be seen as exogenous.

For a counterexample, Noonan (2013) divides his sample into three neighborhood block groups: blocks containing cultural districts, blocks adjacent to those with cultural districts, and all other blocks in that neighborhood. He hypothesizes that the first group should feel the effects of cultural districts the most, with the potential for effects to extend into adjacent blocks. As such, the third group acts as the comparison for the first two groups, thereby enabling comparison against the neighborhood's own trajectory and controlling for additional observed and unobserved factors. The study finds that while basic models suggest that cultural districts have significant positive effects on property values, employment, and income, these effects do not hold when controlling for neighborhoods' own trajectories, as described.

V. Place Versus People

Furthermore, changes enacted on *places* are prospectively different from those enacted on *people.* Seeming signs of economic development might instead indicate the displacement of current residents in favor of more affluent households (Grodach et al., 2014; Stern & Seifert, 2010). Some studies attempt to address this issue by introducing variables indicating population stability, such as the percentage of the population that has been in the same residence for 5+ years (Noonan, 2013).

VI. Types of Arts Activity

Lastly, most papers note the necessity for more specific terminology and categorizations around the arts (Grodach et al, 2014; Foster et al., 2016; Markusen & Schrock, 2006). As described, most past studies look at the presence of an arts industry or cultural clusters rather than investigating specific types of arts organizations, of which there are many.

For example, the commercial arts (ex. film, music, design-based industries) and fine arts (ex. performing arts companies, museums, art schools) might have different community impacts. Grodach et al. (2014) find the fine arts to better predict neighborhood revitalization, defined as "growth in income, employment rates, housing values, and the proportion of residents not living in poverty," as these variables indicate "neighborhood improvement without clear warning signs of displacement" (pp. 20). Conversely, the commercial arts are more associated with neighborhood gentrification, or change found in populations with "a growing rate of employed residents and a declining proportion of residents on public assistance along with a growing White population, highly educated residents, and residents in management occupations" (Grodach et al., 2014, pp. 20).

Even with these specifications, the study notes the need for more specificity in discussing arts activity, as well as the importance of accounting for the pace of change in a given neighborhood. As such, my analysis considers all types of arts organizations, as well as five- and 10-year changes. Finally, Grodach (2010), inspired by the widely publicized success of the Guggenheim Museum Bilbao in bringing economic development to the city of Bilbao, Spain, considers how other confounding factors such as funding, aesthetics (if a physical space or product), and organizational leadership impact arts initiatives and projects. While my analysis accounts for the number of years since organizations have been founded, further research is needed to develop proxies for these confounding factors.

THEORETICAL FOUNDATION

To analyze gentrification, this paper references three foundational papers that define gentrification (Freeman, 2005; Ley, 1986) or study related variables (Sands & Reese, 2012). Socially, gentrification can be defined as a change in household social status (Ley, 1986), for which Ley creates an index representing the average of (1) the percentage of the workforce employed in the management sector and (2) the percentage of the population with a university education. An increase in this social status index indicates gentrification. My analysis employs this gentrification construct.

Economically, gentrification can be seen as "the process by which decline and disinvestments in inner-city neighborhoods are reversed" (Freeman, 2005). Freeman examines the types of neighborhoods able to be gentrified and the process of gentrification itself. To be gentrified, a neighborhood must be low-income, which Freeman defines as a neighborhood with a median income less than that of their respective metropolitan area. For a neighborhood to be disadvantaged, the proportion of its housing stock built within the past 20 years must fall in the

bottom 40th percentile of its respective metropolitan area. As for the process of gentrification, Freeman uses education change instead of income, citing that young artists and professionals with relatively low incomes are oftentimes kick starters of gentrification. However, given the societal increase in educational attainment, a neighborhood must have an increase in educational attainment–or the percentage of those aged 25 years and older with at least four years of college–greater than or equal to the average increase in educational attainment in the neighborhood's respective metropolitan area. Lastly, as a second variable to examine reinvestment, Freeman uses the increase in housing prices. My analysis uses a version of this index (defined below), referred to as *Neighborhood Reinvestment Index*.

My analysis also measures effects on variables potentially correlated with gentrification. To look more broadly at economic health, Sands and Reese (2012) suggest an economic health index composed of average household income, employment rate, the proportion of the population not in poverty, and the proportion of households not receiving public assistance income. This paper uses the mean of the standardized median household income, the employment rate, and the proportion of the population not in poverty to measure economic health.

Furthermore, Ley examines three other correlates of gentrification. First, he looks at demographic change, as measured by a reduction in household size. This paper focuses on racial demographics. Second, he looks at increases in housing prices, given the movement of higher-status families and renters into the city and/or property value appreciation for pre-existing residents. This impact can be measured through median home price, which is a component of *Neighborhood Reinvestment Index*. Third, he examines "the value of the urban amenity," or the availability of a more diverse population, recreational and cultural activities, better jobs, and

higher wages. As such, this paper examines the dependent variables of racial diversity and jobs in the management sector, another component of *Neighborhood Reinvestment Index*. Conversely, I use the pre-existing proportion of the labor force employed in the arts industry as a control. Ley's study does not find any strong correlation between gentrification–as defined by a change in an area's social status–and these three other impacts, but I nevertheless separately analyze the correlation between arts organizations and each of them.

Lastly, Freeman's (2005) paper offers a definition of resident displacement that I use in my analysis. He uses two proxies for displacement: First is overall residential mobility, with the reasoning that any excess mobility in gentrifying neighborhoods versus non-gentrifying neighborhoods can be seen as causal. Second is residential mobility specifically among those who "wanted to consume less space, wanted to pay less rent, or moved in response to outside events including being evicted, health reasons, divorce, joining the armed services, or other involuntary reasons" (Freeman, 2005). While of course many of these reasons are inherently unrelated to gentrification, the study uses data from the Panel Study of Income Dynamics that does not allow for further breakdown. Thus, this proxy provides an upper bound to displacement's correlation with gentrification. I use a proxy similar to the former, with a measure of the median year that residents moved into their current residence. A similar variable is used by Noonan (2013). A positive correlation between arts organizations and this median year would mean that after treatment (the founding of an arts organization), residents have moved into the neighborhood more recently, thus displacing prior residents.

These three papers thus provide definitions of gentrification and a framework for examining other impacts of arts organizations. Therefore, with these papers, I use versions of Ley's (1986) and Freeman's (2005) gentrification definitions and Sands and Reese's (2012)

economic health definition, as outlined above; examine variables indicating demographic change (Ley, 1986); and measure resident displacement (Freeman, 2005).

Other literature supports the use of these variables and additionally suggests the use of other variables. I measure the proportion of the workforce employed in the arts industry to control for the preexisting presence of "creative individuals" and a broader arts industry (Plaza, 2008; Silver & Miller, 2012; Stern & Seifert, 2010). I use demographic variables as informed by many studies, such as Noonan's (2013) measure of changing demographic mix, which examines the change in the percentage of the population that is white.

DATA SECTION

I. Data Sets and Handling

To identify organizations, this paper utilizes data from Southern Methodist University's Cultural Data Profile (CDP), a nationwide online survey that collects financial and programmatic data from nonprofit arts, culture, and humanities organizations. As of 2021, over 19,000 organizations had contributed data, and 8,933 have contributed in the last five fiscal years, which is what this dataset includes. The dataset contains detailed information on organizations' industries, geographies, financials, and other identifying information.

The primary way organizations learn about the CDP is through a grantmaker that requires the survey be filled out. Additionally, some service organizations (ex. OPERA America, TCG) have their member organizations fill out the CDP, so that they can create sector-specific reports. With these data, organizations can apply for grants, get a clear picture of their progress, inform their decision-making, and make a stronger case to stakeholders. Organizations fill out the CDP using an online platform, with descriptions and videos to guide the process. Aside from these

individual incentives, organizations fill out the CDP to contribute to aggregate nationwide research to better understand the broader nonprofit sector.[1]

Given that there are over 100,000 arts organizations alone in the United States and this dataset is thus not comprehensive, there is the possibility for selection bias in that only "successful" or well-run organizations fill out this survey, thus potentially exaggerating the effect that these organizations have on their community in either direction. However, because completing the CDP is not entirely voluntary, this bias is partially mitigated.

The analysis sample is formed from the CDP as follows. First, only organizations with U.S. addresses are utilized. Second, 449 organizations are missing a founding year. For organizations with revenue above $200 million (13 organizations), I manually searched and coded the founding year. For the remaining organizations, the year incorporated is used in the roughly 10% of cases for which it was observed. Next, I generated a dummy variable equal to 1 if the organization is missing a founding year to use as a control to account for the potential underestimation of a ZCTA's arts presence. Third, 35 organizations listed a negative total revenue. After finding that these negative values have the same mean in absolute value as the mean amongst positive total revenues, I assumed that the "-" was a typo and thus converted these negative values to positive ones. These cleaning measures leave 8,139 organizations for analysis, and after dropping additional ZCTAs due to missing demographic variables, 8,048 organizations are ultimately studied.[2]

[1] Daniel Fonner, Associate Director of Research at SMU DataArts, email correspondence, 4/7/24

[2] While I considered restricting my analysis to organizations with a National Taxonomy of Exempt Entities' (NTEE) classification starting with an "A", which categorizes the organization under Arts, Culture, and Humanities, I decided against this specification because only 9% of organizations in the data set have classifications that do not begin with an "A", and many nonetheless fall under the definition of the types of arts organizations I seek to explore.

To gather demographic and economic data, this paper utilizes the United States Census Bureau's American Community Survey (ACS) 5-year estimates for their breadth of data on a national scale and down to the neighborhood level. As mentioned above, the ACS reports data for ZIP Code Tabulation Areas (ZCTAs), created by the U.S. Census Bureau to enable mapping, display, and geographic analyses of ZIP codes. Based on 2020 Census tabulation blocks, ZCTAs are generalized areal representations of the geographic extent and distribution of the point-based ZIP Codes. Therefore, my analysis uses ZCTAs by matching each organization's ZIP code to its appropriate ZCTA, based on data from the Health Center Program GeoCare Navigator - ZIP Code to ZCTA Crosswalk that contains this information for all U.S. ZIP codes.

The following cleaning measures are taken for the ACS data. First, populations of zero are dropped, with additional minimum population thresholds specified for regressions as discussed below. Second, social status indices are not counted for ZCTAs with labor force shares in the management sector (management labor force / overall labor force), a component of the social status index, that are above one for 2012, which is the case for 198 ZCTAs. Third, some ZCTAs report the median year that householders moved in as 0. Thus, these values are changed to missing. Similarly, median incomes below 0 are recoded as missing. Lastly, for ease of interpretation in regressions, median income is converted to tens of thousands of dollars, and population is converted to thousands. All dollar values are changed to 2022 inflation-adjusted dollars.

To determine ZCTAs' urbanness, I utilize The Missouri Data Center - Geographic Correspondence Engine, which reports for all ZCTAs the proportion of their population that is urban versus rural. An urban area is defined as one that "[comprises] a densely settled core of census blocks that meet minimum housing unit density and/or population density requirements.

This includes adjacent territory containing non-residential urban land uses. To qualify as an urban area, the territory identified according to criteria must encompass at least 2,000 housing units or a population of at least 5,000" (The Missouri Census Data Center, 2022).

After collapsing the CDP data to the ZCTA level, I merge all datasets using STATA. The datasets are described in *Appendix A*, and *Appendix B*, offers a snapshot into the Cultural Data Profile (not all variables are shown).

Appendix C lists the organization variables in use, and *Appendix D* shows summary statistics for this data. As will be described in the Empirical Methodology, the sample is restricted to 2012, 2017, and 2022 populations above 100 people, which eliminates 1,860 ZCTAs. This restriction is reflected in *Appendix D*. As the table shows, I examine 30,531 ZCTAs, 7.1% of which contain an arts organization. The most arts organizations founded in any ZCTA is 88 in Center City, Philadelphia, Pennsylvania. Specifically, 1.8% of ZCTAs contain an arts organization founded between 2012 and 2016, and 0.8% contain an arts organization founded between 2017 and 2021. The latter percentage is likely lower than the former due to the pandemic. Organizations are missing founding years in only 0.9% of ZCTAs.

The *Number of Organizations Founded* means shown in *Appendix D* encompass only ZCTAs with at least one organization founded during 2012-2021. Thus, among ZCTAs with an organization founded between 2012 and 2021, each ZCTA has on average 1.75 new organizations. *Total Years of New Organizational Activity* represents the total operational years of all arts organizations founded in that ZCTA over the corresponding five- or 10-year period.[3]

[3] I also created a similar variable, *Total New Organizational Revenue*, defined as the product of each new organization's total revenue and years active, summed within each ZCTA. However, the usefulness of this variable is limited, given that it represents only current revenue rather than cumulative revenue over time (see *Appendix G*).

For example, if a ZCTA contains two new organizations, one founded in 2012 and one founded in 2014, then its *Total Years of New Organizational Activity* as of 2022 is:

$$(2022 - 2012) + (2022 - 2014) = 18$$

As such, if a ZCTA has no arts organization in it, its *Total Years of New Organizational Activity* is 0. This calculation only sums organizations founded between 2012 and 2021. Among ZCTAs with an organization founded 2012-2021, each ZCTA has on average 12.2 years of new organizational activity.

Appendix E lists the demographic variables used, and *Appendix F* shows summary statistics of these demographic variables and the calculated change indices for each year, which serve as the dependent variables. This table again shows summary statistics only for ZCTAs with 2012, 2017, and 2022 populations greater than 100. To begin, the two demographic controls are the pre-treatment population and the pre-treatment proportion of the labor force in the arts industry. Population averages 10,236 per ZCTA, with a minimum of 100 and a maximum of 115,538. The proportion of the labor force in the arts industry ranges from 0 to 1. All subsequent variables in the table are the key demographic variables. The empirical analysis primarily uses five dependent variables, all of which are changes over the corresponding five- or 10-year windows. In terms of the full 10-year change, they are defined as follows:

First, the *Change in Gentrification Index* measures the change in the ZCTA's gentrification index between 2012 and 2022. A ZCTA's gentrification index is an average of the standardized proportion of the population with a bachelor's degree or higher and the standardized proportion of the labor force in the management sector (Ley, 1986). Components are standardized by subtracting their 2012 means from individual values and then dividing by their 2012 standard deviation, as in *Equation 1*:

Equation 1: Variable Standardization

$$Z_{2022} = \frac{X_{2022} - \mu_{2012}}{\sigma_{2012}}$$

For example, X_{2022} is the 2022 proportion of the population with a bachelor's degree or higher, μ_{2012} is the 2012 mean of this variable, and σ_{2012} is the 2012 standard deviation of this variable. As such, Z_{2022} is the 2022 standardized proportion of the population with a bachelor's degree or higher. This process follows for all indices, and all years are standardized using 2012 means and standard deviations. Because these indices are reported missing for ZCTAs with reported management sector proportions above 1, as outlined previously, these ZCTAs are not included in the analysis. All component values shown in *Appendix F* are not standardized, for ease of comprehension, but note that standardized component values can ultimately be negative. As such, *Change in Gentrification Index 2012-2022* ranges from -6.867 to 7.174, with a standard deviation of 0.613.

Second, *Neighborhood Reinvestment Index* is defined as the average of the standardized proportion of the population with a bachelor's degree or higher and the standardized median home value. Moreover, Freeman (2005) specifies that neighborhoods must start as economically disadvantaged (in the bottom 40th percentile) to be gentrified. Therefore, the analysis specifies for ZCTAs' 2012 median household income percentile (which ranges 0 to 1) below 0.4. While Freeman calculates percentiles within each metropolitan area, my analysis uses national percentiles.

Third, economic health is calculated as the sum of standardized median income (in 2022 inflation-adjusted $10,000s), the standardized proportion of the population not in poverty, and the standardized employment rate for a given ZCTA in a given year (Sands and Reese, 2012).

Fourth, the changes in the proportions of the population that are white and black are used as indicators of demographic change (Ley, 1986).

Fifth, resident displacement is measured as an increase in the median year the householder moved into their current unit (with an increase thus correlating to more recent changes in home ownership) (Freeman, 2005). For example, a mean of 4.5 for *Change in Median Year Moved In 2012-2022* implies that from 2012 and 2022, the median year homeowners moved into their current unit becomes on average 4.5 years more recent.[4]

II. Empirical Methodology

To evaluate the impact of arts organizations on community socioeconomic development, I utilize a first difference regression model. The unit of observation is the ZCTA. The explanatory factor of primary interest is *Total Years of New Organizational Activity*, shortened to *Total New Organization Years* in all regression tables. An additional independent variable, *Number of Organizations Founded 2012-2021*, counts the number of organizations founded in the past five or 10 years in each ZCTA. Results for this variable from all 10-year change models are reported in *Appendix H*.

Equation 2 gives a basic example of the regression model, again for the full 10-year change period:

Equation 2: Example Basic Regression

$$Y_{i(t+10)} - Y_{it} = \beta_0 + \beta_1 X_{1i(t+10)} + \beta_2 X_{2it}$$

$Y_{i(t+10)} - Y_{it}$ represents the change in the dependent variable, *Gentrification*, for ZCTA i between time t and time $(t + 10)$. β_0 represents the level of change in gentrification if all other

[4] The most extreme outliers are removed from the analysis by excluding populations below 100. Even so, the existing outliers tend to be concentrated in low-population ZCTAs, which are weighted less in the regressions due to population weighting, which will be described in the Empirical Methodology.

variables equal 0. $X_{1i(t+10)}$ represents the independent variable, *Total Years of New Organizational Activity*, for ZCTA *i* at time (*t + 10*). As such, β_1 represents the main coefficient of interest, the effect of *Total Years of New Organizational Activity* on the change in *Gentrification*.

X_{2it} represents all control variables. These variables include the baseline, pre-treatment proportion of the labor force employed in the Arts, Entertainment and Recreation, and Accommodation and Food Services industries (the closest ACS proxy to the art industry); the pre-treatment population, measured in thousands of people; and the number of organizations founded pre-treatment. The model also controls for the number of organizations missing a founding year. Relatedly, β_2 represents the coefficient for these controls and thus their effect on the change in *Gentrification*.

To avoid endogeneity, the model does not control for any variables that are components of other indices. Given that these variables are expected to be affected by arts organizations, accounting for any change they simultaneously undergo introduces mediator bias: Any resulting change that operated through effects of new arts organizations on the components included as regressors would be held constant. Similarly, because the model controls for the pre-existing presence of arts organizations and an arts industry through *Number of Organizations Pre-Treatment* and *Pre-Treatment Proportion of Labor Force in Arts Industry*, these controls pick up pre-treatment ZCTA characteristics that make the ZCTA more attractive to new arts organizations.[5]

[5] *Appendix I*, described in the Results and Discussion section, shows the baseline model with the addition of controls for the change in the white and black proportions of the population.

Regressions use 2012 ZCTA populations as analytic weights, which given that the ACS data represents five-year estimates, implies the average population during 2008-2012. These weights enable estimates to represent effects on the average person, rather than the average ZCTA. All regressions are restricted to 2012, 2017, and 2022 populations above 100, as extreme outliers are concentrated primarily in low-population ZCTAs. Regression estimates and inferences are similar when samples are restricted to populations above 500 and 1,000. Additionally, some forms of the regression specify for a certain level of urbanness or income percentile, with *Urban Proportion* indicating the proportion of the ZCTA that is considered urban, as defined above. Lastly, all regressions specify robust standard errors.

RESULTS AND DISCUSSION

I. Gentrification

Tables 1-4 report the results of regressions in which the change in gentrification is the outcome variable. While all tables also show estimates for five-year changes for comparison, my focus will be on the results for 10-year changes, as the effect of new arts organization activity is significant for each outcome measure in at least one of the five-year periods. It is important to note that the magnitude of the 2012-2022 coefficient should not equal the sum of the 2012-2017 and 2017-2022 coefficients. Rather, as per *Appendix D*, the average *Total Years of New Organizational Activity* for 2012-2022 is 12.20179, compared to 3.955157 and 1.77429 for 2012-2017 and 2017-2022, respectively. As will be shown below, all coefficients should be multiplied times these averages to determine the magnitude of their effects.

Table 1 shows the impact of *Total Years of New Organizational Activity* on gentrification. Among ZCTAs with an organization founded between 2012 and 2021, the average number of years of activity is 12.20179. Thus, multiplying the coefficient of 0.00681 times

12.20179 and dividing by the standard error of gentrification for this sample, 0.6126727, correlates to a 0.135 standard deviation increase in gentrification level, which is significant at the 1% level. This process will be replicated throughout the results discussion, using dependent variable standard deviations for each corresponding sample.

These results are consistent with past research on this topic, particularly as they relate to the positive impact of the arts on education levels, a component of the gentrification calculation (Foster et al., 2016; Noonan, 2013; Seresinhe et al., 2016; Stern & Seifert, 2010). Moreover, a 10% increase in the pretreatment proportion of the labor force employed in the arts industry predicts a 0.406 standard deviation increase in gentrification, which is also significant at the 1% level. Again, this result is in line with past work on the types of neighborhoods most affected by an artistic dividend, i.e., those with a pre-existing artist population tend to be more receptive to an artistic dividend. Since past work focuses more on economic impact, this extension into social changes adds another layer to that argument (Foster et al., 2016; Grodach, 2010; Silver & Miller, 2012; Stern & Seifert, 2010).

Table 1: The Impact of Total Years of New Organizational Activity on Gentrification

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.00681*** (0.00143)		
Total New Organization Years (5y)		0.00828*** (0.00214)	0.00640** (0.00324)
# of Organizations Founded Pre-Treatment	0.00853*** (0.00277)	0.00763*** (0.00140)	0.00347** (0.00143)
Pre-Treatment Proportion of Labor Force in Arts Industry	2.488*** (0.167)	1.208*** (0.108)	1.836*** (0.118)
Pre-Treatment Population (in 1,000s)	0.000121 (0.000168)	-0.000176* (0.000103)	0.000245** (0.000118)
# of Organizations Missing a Founding Year	-0.00364 (0.0240)	-0.00462 (0.0122)	0.00368 (0.0152)
Constant	0.282*** (0.00738)	0.0934*** (0.00506)	0.163*** (0.00543)
Observations	30,416	30,421	30,406
R-squared	0.054	0.030	0.025

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2 examines the same regression as above but specifically for the change in the proportion of the population with a bachelor's degree or higher. The other component of gentrification is the standardized proportion of the labor force in the management sector, the closest available measure of which in the ACS is those with "Management, business, science, and arts occupations." To establish whether increases in gentrification are due only to increases in arts employment, I separately estimate the response in the educational attainment component of the gentrification variable. The results are similarly significant, thus confirming that changes in gentrification are not driven entirely by an increase in the arts population. This conclusion is

bolstered by the fact that the 2012 proportion of people in the Arts, Entertainment and Recreation, and Accommodation and Food Services industry is an additional control in the regressions.

Table 2: The Impact of Total Years of New Organizational Activity on the Proportion of the Population With a Bachelor's Degree or Higher

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.000758*** (0.000159)		
Total New Organization Years (5y)		0.000955*** (0.000243)	0.000924*** (0.000358)
# of Organizations Founded Pre-Treatment	0.000879*** (0.000315)	0.000778*** (0.000157)	0.000367** (0.000168)
Pre-Treatment Proportion of Labor Force in Arts Industry	0.238*** (0.0188)	0.0940*** (0.0116)	0.190*** (0.0134)
Pre-Treatment Population (in 1,000s)	2.86e-05 (1.86e-05)	-1.96e-05* (1.12e-05)	4.41e-05*** (1.25e-05)
# of Organizations Missing a Founding Year	-0.000711 (0.00247)	-0.000910 (0.00127)	0.000474 (0.00175)
Constant	0.0312*** (0.000796)	0.0144*** (0.000504)	0.0145*** (0.000593)
Observations	30,534	30,534	30,534
R-squared	0.052	0.027	0.027

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix I shows estimates from the same model as *Table 1*, using gentrification as the dependent variable, but with the addition of controls for the change in the white and black proportions of the population. The coefficients align with those in *Table 1* and *Tables 9-10*,

which imply that new arts organizations are correlated positively with gentrification and negatively with racial diversity. Accordingly, *Appendix I* shows that additional *Total New Organization Years* predict greater *Gentrification*, with a slighter smaller magnitude than in *Table 1* due to holding constant *Change in White Proportion*, which is positively correlated with *Gentrification* (and increases with arts organization formation), and *Change in Black Proportion*, which is negatively correlated with *Gentrification* (and decreases with arts organization formation). Therefore, demographic changes are one pathway through which new arts organizations increase gentrification: Controlling for these changes mediates the overall effect of new arts organizations on gentrification, blocking one avenue through which this additional gentrification occurs. As such, these controls are not included in the main regressions.

Table 3 looks specifically at ZCTAs that are at least 80% urban in 2022 (the only year available for this variable). After running regressions for various thresholds, I find that the 80% mark best separates significant and insignificant levels of ZCTA urbanness. Given an average 12.5 years of activity for urban ZCTAs with organizations founded during 2012-2021 and a standard error of 0.461 for gentrification in this sample, this coefficient translates to a 0.189 standard deviation increase in gentrification level, which is again significant at the 1% level.

Table 3: The Impact of Total Years of New Organizational Activity on Gentrification for Urban ZCTAs

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.00696*** (0.00145)		
Total New Organization Years (5y)		0.00852*** (0.00218)	0.00631* (0.00328)
# of Organizations Founded Pre-Treatment	0.00839*** (0.00279)	0.00753*** (0.00141)	0.00350** (0.00144)
Pre-Treatment Proportion of Labor Force in Arts Industry	2.415*** (0.219)	1.288*** (0.143)	1.682*** (0.152)
Pre-Treatment Population (in 1,000s)	-0.000629*** (0.000231)	-0.000339** (0.000142)	-0.000194 (0.000154)
# of Organizations Missing a Founding Year	-0.0101 (0.0242)	-0.00685 (0.0123)	0.000737 (0.0154)
Constant	0.324*** (0.0126)	0.0985*** (0.00862)	0.194*** (0.00881)
Observations	9,394	9,396	9,392
R-squared	0.067	0.048	0.029

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Conversely, *Table 4* reports results for ZCTAs that are less than 80% urban. The effect of *Total New Organization Years* over 2012-2021 on gentrification is very small and no longer significant, with coefficients for the individual five-year periods that are opposite-signed but likewise small and insignificant, thus suggesting that urban neighborhood gentrification is driving the overall effect.

Table 4: The Impact of Total Years of New Organizational Activity on Gentrification for Rural and Suburban ZCTAs

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	9.85e-05 (0.00488)		
Total New Organization Years (5y)		-0.0110 (0.00771)	0.00252 (0.0116)
# of Organizations Founded Pre-Treatment	0.0138* (0.00783)	0.00516 (0.00508)	0.00753 (0.00625)
Pre-Treatment Proportion of Labor Force in Arts Industry	1.765*** (0.176)	0.765*** (0.145)	1.697*** (0.153)
Pre-Treatment Population (in 1,000s)	0.000341 (0.000293)	-0.000115 (0.000210)	0.000446* (0.000250)
# of Organizations Missing a Founding Year	0.0773** (0.0374)	0.0303 (0.0463)	0.0434 (0.0567)
Constant	0.275*** (0.00674)	0.101*** (0.00564)	0.148*** (0.00628)
Observations	21,022	21,025	21,014
R-squared	0.009	0.002	0.009

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

II. Neighborhood Reinvestment

Tables 5-8 examine Freeman's (2005) definition of gentrification, defined here as *Neighborhood Reinvestment*, as the dependent variable. *Table 5* shows the impact of *Total New Organization Years* on *Neighborhood Reinvestment*. Samples are restricted to ZCTAs under the national 40th median income percentile in 2012. Given 12.6 years of new organizational activity on average, this coefficient translates to a 0.410 standard deviation increase in the neighborhood reinvestment level. Moreover, a 10% increase in the pretreatment proportion of the labor force

employed in the arts industry predicts a 0.795 standard deviation increase in neighborhood reinvestment. Both of these effects are significant at the 1% level.

Table 5: The Impact of Total Years of New Organizational Activity on Neighborhood Reinvestment for ZCTAs Below the 40th Income Percentile

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.0110*** (0.00325)		
Total New Organization Years (5y)		0.00637* (0.00370)	0.0189** (0.00741)
# of Organizations Founded Pre-Treatment	0.0125** (0.00556)	0.0113*** (0.00219)	0.00707** (0.00347)
Pre-Treatment Proportion of Labor Force in Arts Industry	2.683*** (0.271)	0.624*** (0.129)	2.441*** (0.183)
Pre-Treatment Population (in 1,000s)	0.00244*** (0.000336)	-2.76e-05 (0.000179)	0.00237*** (0.000223)
# of Organizations Missing a Founding Year	0.0454 (0.0277)	-0.00853 (0.0138)	0.0529*** (0.0196)
Constant	0.0971*** (0.0103)	0.0298*** (0.00575)	0.0460*** (0.00743)
Observations	10,758	10,937	10,526
R-squared	0.196	0.068	0.200

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6 shows the impact of *Total Years of New Organizational Activity* on *Neighborhood Reinvestment*, identical to above except now also restricting the sample to ZCTAs that are at least 80% urban. The average *Total New Organizations Years* of 13.1 predicts a 0.407 standard deviation increase in neighborhood reinvestment level. This change is almost identical to that above, as is the predicted effect of a 10% increase in the pretreatment proportion of the labor force employed in the arts industry of a 0.902 standard deviation increase in neighborhood

reinvestment. Again, both are significant at the 1% level, in contrast with an insignificant effect of new organizations in ZCTAs that are under 80% urban (not reported), continuing to suggest that beneficial impacts of new arts organizations are concentrated in urban areas.

Table 6: The Impact of Total Years of New Organizational Activity on Neighborhood Reinvestment for Urban ZCTAs Below the 40th Income Percentile

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.0108***		
	(0.00329)		
Total New Organization Years (5y)		0.00615	0.0189**
		(0.00377)	(0.00743)
# of Organizations Founded Pre-Treatment	0.0121**	0.0114***	0.00630*
	(0.00565)	(0.00224)	(0.00347)
Pre-Treatment Proportion of Labor Force in Arts Industry	3.133***	0.972***	2.893***
	(0.417)	(0.203)	(0.279)
Pre-Treatment Population (in 1,000s)	0.00220***	0.000183	0.00214***
	(0.000471)	(0.000262)	(0.000306)
# of Organizations Missing a Founding Year	0.0358	-0.00876	0.0434**
	(0.0280)	(0.0143)	(0.0196)
Constant	0.102***	0.00337	0.0467***
	(0.0242)	(0.0136)	(0.0173)
Observations	2,244	2,262	2,237
R-squared	0.167	0.110	0.166

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7 shows the impact of *Total Years of New Organizational Activity* on *Neighborhood Reinvestment* in the full sample, no longer specifying a maximum pre-treatment median income percentile or degree of urbanness. Given 12.2 years of new organizational activity on average, this result correlates to an average neighborhood reinvestment level increase of 0.257 standard deviations. This change is smaller than above, as is the effect of a 10%

increase in the pretreatment proportion of the labor force employed in the arts industry of 0.548 standard deviations, but both maintain significance at the 1% level.[6] This is consistent with the claim of Freeman (2005) that neighborhood reinvestment occurs most strongly in neighborhoods that start as economically disadvantaged.

Table 7: The Impact of Total Years of New Organizational Activity on Neighborhood Reinvestment

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.00821*** (0.00233)		
Total New Organization Years (5y)		0.00634* (0.00362)	0.0123** (0.00539)
# of Organizations Founded Pre-Treatment	0.0137*** (0.00392)	0.0116*** (0.00241)	0.00585** (0.00236)
Pre-Treatment Proportion of Labor Force in Arts Industry	2.133*** (0.187)	0.362*** (0.0966)	2.238*** (0.137)
Pre-Treatment Population (in 1,000s)	0.00287*** (0.000231)	0.000390*** (0.000114)	0.00248*** (0.000152)
# of Organizations Missing a Founding Year	0.0232 (0.0312)	0.00891 (0.0156)	0.0190 (0.0187)
Constant	0.207*** (0.00798)	0.0620*** (0.00471)	0.117*** (0.00587)
Observations	29,204	29,472	28,789
R-squared	0.100	0.047	0.103

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

[6] Given that *Neighborhood Reinvestment* contains the standardized proportion of the population with a bachelor's degree or higher, which as described earlier is a component of *Gentrification* that is significantly affected individually by new arts organizational activity, *Appendix J-K* focus on the change in median home value. The *Total New Organization Years* effect remains significant at the 1% level, implying that the significance of Neighborhood Reinvestment is not solely attributable to an effect on bachelor's obtainment.

III. Economic Health

Table 8 examines economic health as a dependent variable. The average *Total Years of New Organizational Activity* for this sample is 12.2, predicting a 0.070 standard deviation increase in economic health level that is significant at the 1% level. This finding suggests a causal interpretation of past research findings of positive economic effects (Stern & Seifert, 2010; Noonan, 2013; Foster et al., 2016; Seresinhe et al., 2016). Again, the proportion of people in the arts industry pretreatment is significant at the 1% level. A 10% increase in the proportion of the labor force in the arts industry correlates to a 0.078 standard deviation increase in the economic health level, a result that is likewise significant at 1% and is in line with the previous literature (Foster et al., 2016; Noonan, 2013; Seresinhe et al., 2016; Stern and Seifert, 2010).

Table 8: The Impact of Total Years of New Organizational Activity on Economic Health

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.00459*** (0.00111)		
Total New Organization Years (5y)		0.00518*** (0.00195)	0.00571* (0.00310)
# of Organizations Founded Pre-Treatment	0.00768*** (0.00188)	0.00679*** (0.00105)	0.00277** (0.00133)
Pre-Treatment Proportion of Labor Force in Arts Industry	0.623*** (0.156)	0.450*** (0.104)	0.366*** (0.116)
Pre-Treatment Population (in 1,000s)	0.000527*** (0.000183)	-0.000158 (0.000121)	0.000582*** (0.000126)
# of Organizations Missing a Founding Year	0.00975 (0.0200)	0.00140 (0.0108)	0.0113 (0.0125)
Constant	0.346*** (0.00678)	0.123*** (0.00483)	0.217*** (0.00529)
Observations	29,802	30,001	29,568
R-squared	0.021	0.012	0.007

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

IV. Racial Demographics

Tables 9-10 look at the effect of arts organizations on racial demographics, specifically the changes in the white and black proportions of the population. *Table 9* shows that the average *Total New Organization Years* correlates to a 0.185 standard deviation increase in the white proportion of the population, significant at the 1% level. However, the coefficient for the pretreatment proportion of the labor force employed in the arts industry is insignificant, apparently the consequence of a negative effect during the first five-year period.

Table 9: The Impact of Total Years of New Organizational Activity on the Proportion White

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.00127*** (0.000219)		
Total New Organization Years (5y)		0.00185*** (0.000343)	0.000767 (0.000498)
# of Organizations Founded Pre-Treatment	0.00121*** (0.000451)	0.000708*** (0.000212)	0.000981*** (0.000257)
Pre-Treatment Proportion of Labor Force in Arts Industry	-0.000292 (0.0275)	-0.0378** (0.0166)	0.100*** (0.0202)
Pre-Treatment Population (in 1,000s)	-0.000236*** (3.47e-05)	-0.000173*** (1.89e-05)	-8.76e-05*** (2.19e-05)
# of Organizations Missing a Founding Year	-0.00273 (0.00339)	-0.00133 (0.00188)	-0.000652 (0.00182)
Constant	-0.0420*** (0.00120)	-0.0141*** (0.000737)	-0.0298*** (0.000899)
Observations	30,534	30,534	30,534
R-squared	0.025	0.018	0.009

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10 examines effects on the black population and finds a negative impact on this proportion, specifically a 0.152 standard deviation decrease in the proportion of the population that is black is predicted by an average number of new organizations. A 10% increase in the pre-treatment proportion of the labor force in the arts industry correlates to a 0.134 standard deviation increase in the proportion of the population that is black. Once again, both are significant at the 1% level.

Table 10: The Impact of Total Years of New Organizational Activity on the Proportion Black

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	-0.000633*** (0.000187)		
Total New Organization Years (5y)		-0.000861*** (0.000261)	-0.000195 (0.000391)
# of Organizations Founded Pre-Treatment	-0.000662** (0.000283)	-0.000469*** (0.000152)	-0.000457*** (0.000144)
Pre-Treatment Proportion of Labor Force in Arts Industry	0.0679*** (0.0171)	0.0332*** (0.0119)	0.0107 (0.0131)
Pre-Treatment Population (in 1,000s)	1.87e-05 (2.28e-05)	1.81e-05 (1.42e-05)	3.53e-06 (1.52e-05)
# of Organizations Missing a Founding Year	-0.00126 (0.00238)	-0.00100 (0.00130)	-0.000806 (0.00134)
Constant	-0.00130* (0.000754)	0.000472 (0.000556)	-0.00100* (0.000595)
Observations	30,534	30,534	30,534
R-squared	0.013	0.008	0.002

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

V. Resident Displacement

Finally, *Table 12* focuses on resident displacement, measured by the change in the median year that householders (owners and renters) moved into their current unit. An increase in this variable signifies that residents have moved in more recently, implying displacement of prior residents. However, the results for all year groups are insignificant. Most literature has yet to study the effect of arts organizations on people, versus a place, so this analysis adds to the narrative around whether the economic and social changes brought by arts organizations affect

pre-existing residents or displace them in favor of new, wealthier residents. This result suggests that the benefits of new arts organizations accrue at least in part to existing residents.

Table 12: The Impact of Total Years of New Organizational Activity on Resident Displacement

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	0.00270 (0.00422)		
Total New Organization Years (5y)		-0.00704 (0.0140)	-0.0225 (0.0169)
# of Organizations Founded Pre-Treatment	0.0331*** (0.00907)	0.0228** (0.00899)	0.0171*** (0.00531)
Pre-Treatment Proportion of Labor Force in Arts Industry	15.92*** (0.776)	20.39*** (0.745)	-5.999*** (0.571)
Pre-Treatment Population (in 1,000s)	-0.000473 (0.00105)	0.00891*** (0.000990)	-0.00840*** (0.000699)
# of Organizations Missing a Founding Year	0.239*** (0.0613)	0.295*** (0.0662)	-0.0242 (0.0499)
Constant	8.759*** (0.0364)	3.711*** (0.0358)	5.112*** (0.0302)
Observations	30,141	30,170	30,117
R-squared	0.039	0.083	0.017

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

CONCLUSION

This analysis shows that arts organization formation has socioeconomic effects in line with what the previous literature qualitatively theorized. Specifically, this study finds that arts organizations have a positive impact on gentrification, neighborhood reinvestment, and economic development. More granularly, this result implies a positive impact on bachelor's degree obtainment, employment in the management sector, median home value, median income,

and employment rate, and a negative effect on poverty rate. Moreover, it appears that arts organizations in urban ZCTAs are driving most of these socioeconomic changes, as opposed to those in rural and suburban ZCTAs. Effect sizes are nontrivial, in that the average level of new arts activity almost always predicts increases of over 0.1 standard deviations and are sometimes much larger.

Additionally, estimates indicate a positive correlation with the percentage change in the white population and a negative correlation with the percentage change in the black population, suggesting some displacement of black residents in favor of white residents. However, this displacement is likely small, based on the effect on median year moved in being insignificant.

One specific potential aim of further research might be to identify a more accurate measure of organizational revenue that varies over time, so that organizational size could be taken into account. Moreover, the Cultural Data Profile provides detailed category identifiers for organizations. Differentiating between certain categories, such as museums and performing arts centers, would provide useful information for prioritizing arts investments. Lastly, studying the determinants of where new arts organizations locate, would complement and potentially corroborate the findings of my analysis that once founded, these organizations have largely beneficial socioeconomic effects.

REFERENCES

Cohen, R. (2023). Arts and Economic Prosperity 6: The Economic & Social Impact Study of Nonprofit Arts & Culture Organizations & Their Audiences. *Americans for the Arts.* https://www.newmexicoculture.org/assets/files/reports/AEP6_NationalReport.pdf

Freeman, L. (2005). Displacement or Succession? Residential Mobility in Gentrifying Neighborhoods. *Urban Affairs Review*, 40(4), 419-568. https://doi.org/10.1177/1078087404273341

Foster, N., Grodach, C., Murdoch, J. (2016). Neighborhood Diversity, Economic Health, and The Role Of The Arts. *Journal of Urban Affairs*, 38(5), 623-642. https://doi.org/10.1111/juaf.12278

Grodach, C. (2010). Beyond Bilbao: Rethinking flagship cultural development and planning in three California cities. *Journal of Planning Education and Research*, 29(3), 353-366. https://doi.org/10.1177/0739456X09354452

Grodach, C., Foster, N., Murdoch, J. (2014). Gentrification and the artistic dividend: The role of the arts in neighborhood change. *Journal of the American Planning Association*, 80(1), 21-35. https://doi.org/10.1080/01944363.2014.928584

Health Center Program GeoCare Navigator. (2022). *ZIP Code to ZCTA Crosswalk* [Data set]. Retrieved from https://geocarenavigator.hrsa.gov/

Ley, D. (1986). Alternative Explanations for Inner-City Gentrification: A Canadian Assessment. *Annals of the Association of American Geographers*, 74(4), 521-535. https://www.jstor.org/stable/2562708

Markusen, A., Gadwa, A. (2010). Arts and Culture in Urban or Regional Planning: A Review and Research Agenda. *Journal of Planning Education and Research*, 29(3), 379-391. https://doi-org.proxy.lib.duke.edu/10.1177/0739456X09354380

Markusen, A., Schrock, G. (2006). The Artistic Dividend: Urban Artistic Specialization and Economic Development Implications. *Urban Studies*, 40(10), 1661-1686. https://doi.org/10.1080/00420980600888478

Noonan, D. (2013). How U.S. Cultural Districts Reshape Neighborhoods." *Contemporary Issues in U.S. Cultural Policy: Research Articles*, 22(3-4), 203-212. https://doi.org/10.1080/09548963.2013.817652

Plaza, B. (2008). On Some Challenges and Conditions for the Guggenheim Museum Bilbao to be an Effective Economic Re-activator. *International Journal of Urban and Regional Research* 32(2), 506-517. https://doi.org/10.1111/j.1468-2427.2008.00796.x

Sands, G., Reese, L. (2012). Fair Weather Friends? The Impact of the Creative Class on the Economic Health of Mid-sized U.S. Metropolitan Areas, 1990–2009. *Cambridge Journal of Regions, Economy and Society* 6(1), 71-91. https://doi.org/10.1093/cjres/rss013

Seresinhe, C. I., Preis, T., Moat, H. S. (2016). Quantifying the Link Between Art and Property Prices in Urban Neighborhoods. *Royal Society Open Science* 3(4). https://doi.org/10.1098/rsos.160146

Silver, D., Miller, D. (2012). Contextualizing the Artistic Dividend. *Journal of Urban Affairs* 35(5), 591-606. https://doi.org/10.1111/j.1467-9906.2012.00642.x

SMU DataArts. (2022). *Cultural Data Profile* [Data set]. Retrieved from https://culturaldata.org/what-we-do/for-arts-cultural-organizations/the-cultural-data-profile/

Stern, M., Seifert, S. (2010). Cultural Clusters: The Implications of Cultural Assets Agglomeration for Neighborhood Revitalization. *Journal of Planning Education and Research* 29(3), 262-279. https://doi.org/10.1177/0739456X09358555

The Missouri Census Data Center. (2022). *Geocorr 2022: Geographic Correspondence Engine* [Data set]. Received from https://mcdc.missouri.edu/applications/geocorr2022.html2

U.S. Census Bureau. (2012). *2008-2012 American Community Survey 5-Year Detailed Tables* [Data set]. Retrieved from https://api.census.gov/data.html

U.S. Census Bureau. (2017). *2013-2017 American Community Survey 5-Year Detailed Tables* [Data set]. Retrieved from https://api.census.gov/data.html

U.S. Census Bureau. (2022). *2018-2022 American Community Survey 5-Year Detailed Tables* [Data set]. Retrieved from https://api.census.gov/data.html

APPENDIX

Appendix A: Datasets Used

Dataset	Years Available	Years Utilized	# Obs Utilized	Use	Frequency of Collection	Region Units	Authors Used By
US Census Bureau - American Community Survey 5-year estimates	2007, 2012, 2017, 2022	2012, 2017, 2022	32,391 ZCTAs	Year 2012, 2017, 2022 5-year demographic estimates	The ACS creates period estimates, which means they represent the characteristics of the population and housing over a specific data collection period. For 5-year estimates, the ACS has 60 months of data.	ZIP Code Tabulation Areas (ZCTAs), generalized areal representations of the geographic extent and distribution of point-based ZIP Codes	Grodach et al., 2014; Markusen and Gadwa, 2010; Markusen and Schrock, 2006
SMU DataArts - Cultural Data Profile (CDP)	Profiles collected in 2017-2022 for organizations founded 1676-2022	All years utilized	8,048 ZCTAs	Financial, operational, and programmatic information from thousands of nonprofit arts and cultural organizations nationwide	Annual	8,933 private, nonprofit organizations	Foster et al., 2016
Health Center Program GeoCare Navigator - ZIP Code to ZCTA Crosswalk	2022	2022	41,059 ZIP codes	2022 ZIP code-to-ZCTA pairings	2022 associations between ZIP codes and ZCTAs were collected	Point-based ZIP codes are aligned to their associated ZCTA	N/A
The Missouri Data Center - Geographic Correspondence Engine	2022	2022	33,632 ZCTAs	2022 ZCTA-to-county pairings, percent of population that is urban	2022 associations between ZCTAs and counties and urban percentages were collected	ZCTAs	N/A

Appendix B: Cultural Data Profile Snapshot

Organization Address ZIP Code	Organization Address ZCTA	Fiscal Year	Organization Name	Organization Address City	Organization Address State	Organization Year Founded
20814	20814	2017	NIH Philharmonia	Bethesda	MD	2005

10001	10001	2017	The Time In Children's Arts Initiative	New York	NY	2006
10001	10001	2018	CUE Art Foundation	New York	NY	2002
10001	10001	2019	ArtBridge Projects, INC	New York	NY	2009
10001	10001	2018	Queer Urban Orchestra, Inc.	New York	NY	2009
10001	10001	2019	No Longer Empty	New York	NY	2009
10001	10001	2022	Ripple Effect Artists Inc.	New York	NY	2009
10001	10001	2018	Topical Cream	New York	NY	2013
10001	10001	2019	Winter Film Awards	New York	NY	2011
10001	10001	2018	The Possibility Project	New York	NY	2000

This table gives an example of some of the data for 10 organizations in the Cultural Data Profile.

Appendix C: Organization Variables Used

Variable	Label	Type	Source	Description	Interpretation
Organization ZCTA	ZCTA	string		Organization address ZCTA	Used to identify the neighborhood in U.S. Census data and as the **unit of observation**
Organization ZIP code	organizations_addr_zip	string	Cultural Data Profile	Organization address ZIP code	Used to match the organization to a ZCTA
Organization year founded	organizations_year_founded	integer	Cultural Data Profile	Organization founding year	Used as the "treatment" date to determine an organization's years of activity, which contributes to the **primary explanatory variable**
Total revenue	total_revenue_formula	currency	Cultural Data Profile	Organization's total revenue - earned, investment, and contributing	Used to determine usable dollars for operations

Appendix D: Organization Summary Statistics Table (Population > 100)

Variable	Obs	Mean	Std. Dev.	Min	Max
Organization Dummy	30,531	.0711081	.2570095	0	1
# of Organizations	30,531	.2634044	1.943315	0	88
Dummy: # of Organizations Founded 2012-2016	30,531	.0177197	.1319329	0	1
Dummy: # of Organizations Founded 2017-2021	30,531	.0078609	.0883138	0	1
Dummy: # of Organizations Founded 2012-2021	30,531	.0219122	.1463992	0	1
Dummy: ZCTA Contains Organization Missing Founding Year	30,531	.0087125	.0929346	0	1
# of Organizations Founded 2012-2016	669	1.294469	1.250742	0	14
# of Organizations Founded 2017-2021	669	.4544096	.7481109	0	7
# of Organizations Founded 2012-2021	669	1.748879	1.55912	1	21
Total Years of New Organizational Activity 2012-2017	669	3.955157	4.200202	0	46
Total Years of New Organizational Activity 2017-2022	669	1.77429	3.001227	0	26
Total Years of New Organizational Activity 2012-2022	669	12.20179	11.16773	1	142
# of Organizations Founded Pre-2012	669	5.276532	8.438385	0	62
# of Organizations Missing a Founding Year	669	.2167414	.796298	0	13

Appendix E: Demographic Variables Used

Variable	Label	Type	Source	Description	Interpretation	Predicted Relationship
Population (in 1,000s)	Population1k	int	ACS 5-Year Detailed Tables	Population of individuals residing in the specified area (measured in 1,000s)	Used as a **control** and as a **weight**	N/A
Proportion of Labor Force in Arts Industry	proparts	scale	ACS 5-Year Detailed Tables	The proportion of individuals in the labor force who report a profession as Arts, entertainment, and recreation, and accommodation and food services	Used as a **control** for the pre-treatment proportion of the labor force in the arts industry and thus for non-time dependent factors of a ZCTA that	N/A

					make it attractive for the arts	
Proportion of Population With a Bachelor's Degree or Higher	propbachelors	scale	ACS 5-Year Detailed Tables	The proportion of the population with a bachelor's degree or higher	Used as part of the gentrification index, a **dependent variable**	**(+)**
Proportion of Labor Force in Management Sector	propmanagement	scale	ACS 5-Year Detailed Tables	The proportion of individuals in the labor force who report a profession as Management, business, science, and arts occupations	Used as part of the gentrification index, a **dependent variable**	**(+)**
Median Home Value	MedHomeValue	int	ACS 5-Year Detailed Tables	The median value of owner-occupied units, where an individual value is determined as the respondent's estimate of how much the property would sell for if it were for sale	Used as part of the neighborhood reinvestment index, a **dependent variable**	**(+)**
Median Income (in 10,000s)	MedIncome10k	int	ACS 5-Year Detailed Tables	Median income (in 10,000s) using income in the past 12 months, in 2022 inflation-adjusted dollars	Used as part of the economic health index and as a parameter in the neighborhood reinvestment index, **dependent variables**	**(+)**
Not-In-Poverty Rate	NotInPovRate	scale	ACS 5-Year Detailed Tables	The proportion of the population that did not report a poverty status in the past 12 months	Used as part of the economic health index, a **dependent variable**	**(+)**
# in Labor Force	NInLaborForce	int	ACS 5-Year Detailed Tables	The number of individauls aged 16+ in the labor force	Used to calculate proportions for various industries and the unemployment rate	N/A
Employment Rate	Employment Rate	scale	ACS 5-Year Detailed Tables	The proportion of the labor force that is employed	Used as part of the economic health index, a **dependent variable**	**(+)**

White Proportion	PWhite	scale	ACS 5-Year Detailed Tables	The proportion of the population that reports as White alone	Used as a **dependent variable** to determine changes in racial demographics	**(+)**
Black Proportion	PBlack	scale	ACS 5-Year Detailed Tables	The proportion of the population that reports as Black or African American alone	Used as a **dependent variable** to determine changes in racial demographics	**(-)**
Median Year Moved In	MedYearMovedIn	int	ACS 5-Year Detailed Tables	The median year the current householder moved into the unit	Used as a **dependent variable** to determine displacement of prior residents	**(+)**

Appendix F: Demographic Summary Statistics Table (Population > 100)

Variable	Obs	Mean	Std. Dev.	Min	Max
Population (in 1,000s) 2012	30,534	10.23609	14.09953	.1	115.538
Population (in 1,000s) 2017	30,534	10.61673	14.8247	.1	119.204
Population (in 1,000s) 2022	30,534	10.91235	15.31196	.1	134.008
Proportion of Labor Force in Arts Industry 2012	30,534	.034757	.0288313	0	.8250951
Proportion of Labor Force in Arts Industry 2017	30,534	.0365428	0.0297412	0	0.665
Proportion of Labor Force in Arts Industry 2022	30,495	.3356464	.1381435	0	1
Proportion of Labor Force in Management Sector 2012	30,436	.2917325	.1242701	0	1
Proportion of Labor Force in Management Sector 2017	30,498	.3034795	.1251336	0	1
Proportion of Labor Force in Management Sector 2022	30,416	.3360238	.1377363	0	1
Proportion of Population With a Bachelor's Degree or Higher 2012	30,436	.1514196	.1090478	0	.8942731
Proportion of Population With a Bachelor's Degree or Higher 2017	30,436	.1673634	.1154326	0	1
Proportion of Population With a Bachelor's Degree or Higher 2022	30,436	.1887047	.1253454	0	1
Gentrification Index 2012	30,436	-1.58e-10	.9389804	-1.868064	5.491127

Gentrification Index 2017	30,421	.1222752	.9737726	-1.867998	5.799825
Gentrification Index 2022	30,416	.3492889	1.058362	-1.867998	5.938741
Change in Gentrification Index 2012-2022	30,416	.3487791	.6126727	-6.866927	6.837368
Change in Gentrification Index 2012-2017	30,421	.1217992	.5312207	-6.866927	7.173646
Change in Gentrification 2017-2022	30,406	.2266444	.5888561	-6.475727	5.963223
Median Income (in 10,000s) 2012	30,408	3.247974	1.17103	.309876	18.89066
Median Income (in 10,000s) 2017	30,106	3.309028	1.172739	.289884	18.45131
Median Income (in 10,000s) 2022	29,910	3.697566	1.336318	.2499	25.0001
Median Home Value 2012	30,147	216,478	178,620.10	12,398.76	1,240,001
Median Home Value 2017	29,492	218,105.10	197,460.30	11,598.84	2,320,001
Median Home Value 2022	29,237	260,650	229,091.90	11,598.84	2,320,001
Neighborhood Reinvestment Index 2012	30,140	.0030762	.926664	-1.265921	5.7245
Neighborhood Reinvestment Index 2017	29,488	.0861684	.996549	-1.268111	9.252499
Neighborhood Reinvestment Index 2022	29,233	.3072063	1.1124	-1.272593	8.267857
Change in Neighborhood Reinvestment Index 2012-2022	29,204	.2913711	.3891426	-3.294438	4.392201
Change in Neighborhood Reinvestment Index 2012-2017	29,472	.0756045	.2945697	-2.837617	5.84011
Change in Neighborhood Reinvestment Index 2017-2022	28,789	.2148642	.3335726	-5.599161	4.079549
Poverty Rate 2012	30,409	.1414727	.0998443	0	1
Poverty Rate 2017	30,409	.1403575	.0988328	0	1
Poverty Rate 2022	30,409	.1254136	.0945819	0	1
Employment Rate 2012	30,47	.9129879	.0634426	0	1
Employment Rate 2017	30,498	.9345052	.0548678	0	1
Employment Rate 2022	30,488	.9479688	.0533103	0	1

Economic Health Index 2012	30,312	.0020424	.7912344	-7.774175	4.882523
Economic Health Index 2017	30,001	.1398698	.7504798	-6.322061	5.165192
Change in Economic Health Index 2022	29,802	.3733412	.7320699	-6.689559	7.042515
Change in Economic Health Index 2012-2022	29,802	.367725	.5849375	-7.269097	6.990275
Change in Economic Health Index 2012-2017	30,001	.133939	.5280771	-6.058138	7.178773
Change in Economic Health Index 2017-2022	29,568	.230496	.5232446	-6.824438	6.481333
White Proportion 2012	30,534	.7795404	.2522499	0	1
White Proportion 2017	30,534	.7661156	.2548837	0	1
White Proportion 2022	30,534	.7437934	.2556078	0	1
Change in White Proportion 2012-2022	30,534	-.035747	.0837008	-1	.763953
Change in White Proportion 2012-2017	30,534	-.0134248	.0684555	-1	.7801324
Change in White Proportion 2017-2022	30,534	-.0223222	.0779508	-.8723404	.9541284
Black Proportion 2012	30,534	.0783292	.159522	0	1
Black Proportion 2017	30,534	.0789005	.1578163	0	1
Black Proportion 2022	30,534	.077763	.154289	0	1
Change in Black Proportion 2012-2022	30,534	-.0005662	.0506508	-.8955224	.8148148
Change in Black Proportion 2012-2017	30,534	.0005713	.0412055	-.8955224	.7690632
Change in Black Proportion 2017-2022	30,534	-.0011375	.0466209	-.9541284	.8148148
Median Year Moved In 2012	30,203	2008.904	4.821581	1989	2022
Median Year Moved In 2017	30,220	2004.37	4.249939	1979	2016
Median Year Moved In 2022	30,277	2000.048	3.805763	1969	2011
Change in Median Year Moved In 2012-2022	30,141	8.855147	4.241865	-22	47
Change in Median Year Moved In 2012-2017	30,17	4.325953	3.654819	-29	42

Change in Median Year Moved In 2017-2022	30,117	4.530896	4.132929	-25	40

Appendix G: The Effect of Total Organizational Years Active and Revenue for Organizations Founded In 2012-2021 on Gentrification 2012-2022

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organizational Revenue Years (10y)	0.000314		
	(0.000330)		
Total New Organizational Revenue Years (5y)		0.000341	-3.22e-05
		(0.000219)	(0.000232)
# of Organizations Founded Pre-Treatment	0.0142***	0.00972***	0.00430***
	(0.00251)	(0.00128)	(0.00134)
Pre-Treatment Proportion of Labor Force in Arts Industry	2.534***	1.227***	1.841***
	(0.168)	(0.108)	(0.118)
Pre-Treatment Population (in 1,000s)	0.000229	-0.000129	0.000249**
	(0.000172)	(0.000104)	(0.000118)
# of Organizations Missing a Founding Year	0.0103	0.000465	0.00519
	(0.0219)	(0.0114)	(0.0151)
Constant	0.279***	0.0918***	0.163***
	(0.00747)	(0.00509)	(0.00543)
Observations	30,416	30,421	30,406
R-squared	0.050	0.028	0.025

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix H: The Impact of the Number of New Organizations Founded on All Dependent Variables

DEPENDENT VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Gentrification	0.0477***	0.0291***	0.0307**
	(0.0103)	(0.00692)	(0.0145)
Neighborhood Reinvestment	0.0796***	0.0171	0.0887***
	(0.0227)	(0.0129)	(0.0306)
Economic Health	0.0310***	0.0177***	0.0190
	(0.00832)	(0.00635)	(0.0139)
Change in White Proportion	0.00914***	0.00650***	0.00900***
	(0.00158)	(0.00109)	(0.00345)
Change in Black Proportion	-0.00436***	-0.00296***	-0.000416
	(0.00130)	(0.000813)	(0.00169)
Resident Displacement	0.0402	0.0138	-0.0590
	(0.0293)	(0.0457)	(0.0658)

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Each value represents the coefficient for *Total Number of New Organizations Founded* for the corresponding column change period and corresponding row dependent variable.

Appendix I: The Impact of Total Years of New Organizational Activity on Gentrification, Neighborhood Reinvestment, and Economic Health 2012-2022, With Change in White and Black Proportion Controls

VARIABLES	(1) Gentrification	(2) Neighborhood Reinvestment	(3) Economic Health
Total New Organization Years (10y)	0.00539***	0.00762***	0.00653***
	(0.00127)	(0.00226)	(0.00243)
# of Organizations Founded Pre-Treatment	0.00715***	0.0131***	0.0262***
	(0.00236)	(0.00380)	(0.00392)
Pre-Treatment Proportion of Labor Force in Arts Industry	2.520***	2.212***	1.491***
	(0.157)	(0.186)	(0.259)
Change in White Proportion (10y)	0.889***	-0.114	0.841***
	(0.0711)	(0.0948)	(0.117)
Change in Black Proportion (10y)	-0.455***	-1.168***	-1.088***
	(0.0999)	(0.125)	(0.153)
Pre-Treatment Population (in 1,000s)	0.000340**	0.00286***	-0.000581**
	(0.000167)	(0.000233)	(0.000258)
# of Organizations Missing a Founding Year	-0.00179	0.0213	0.0105
	(0.0211)	(0.0299)	(0.0384)
Constant	0.319***	0.200***	0.517***
	(0.00725)	(0.00786)	(0.0114)
Observations	30,416	29,204	29,835
R-squared	0.086	0.112	0.075

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix J: The Impact of Total Years of New Organizational Activity on Median Home Value

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	1,690** (710.7)		
Total New Organization Years (5y)		700.8 (1,145)	2,903* (1,708)
# of Organizations Founded Pre-Treatment	3,448*** (1,122)	2,872*** (753.6)	1,485** (717.2)
Pre-Treatment Proportion of Labor Force in Arts Industry	366,008*** (49,953)	-28,531 (26,018)	484,232*** (37,681)
Pre-Treatment Population (in 1,000s)	985.9*** (70.16)	175.3*** (33.68)	819.4*** (45.61)
# of Organizations Missing a Founding Year	9,510 (8,333)	4,701 (4,355)	6,034 (5,203)
Constant	22,523*** (2,240)	-1,353 (1,389)	17,740*** (1,632)
Observations	29,207	29,475	28,793
R-squared	0.085	0.032	0.106

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix K: The Impact of Total Years of New Organizational Activity on Median Home Value, If Below 40th Income Percentile

VARIABLES	(1) 2012-2022	(2) 2012-2017	(3) 2017-2022
Total New Organization Years (10y)	1,839** (877.4)		
Total New Organization Years (5y)		-16.31 (982.2)	4,770** (2,309)
# of Organizations Founded Pre-Treatment	1,572 (1,491)	1,744*** (532.6)	910.6 (1,019)
Pre-Treatment Proportion of Labor Force in Arts Industry	426,109*** (67,718)	40,480 (30,370)	463,991*** (48,862)
Pre-Treatment Population (in 1,000s)	977.8*** (105.0)	112.5** (53.07)	(70.65)
# of Organizations Missing a Founding Year	19,149** (8,064)	5,475 (4,126)	13,435** (6,220)
Constant	1,749 (2,707)	-5,608*** (1,501)	2,926 (1,994)
Observations	10,758	10,937	10,527
R-squared	0.176	0.037	0.217

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1