

**Two Cities, Five Industries: Similarities and Differences Within and
Between Cultural Industries in New York and Los Angeles**

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WORKING PAPER

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Abstract

Recent work has pointed towards the possibility that industries are not tied to their specific urban location as much as to their linkages with particular types of infrastructure and to their social and economic networks. Industries have similar clustering patterns even in very different cities. Using Bureau of Labor Statistics data, we conducted GIS analysis to compare Los Angeles and New York City, two very different types of geographies and urban environments. Three distinct findings emerged: 1) When the cultural industries are disaggregated into distinct industrial sectors (art, fashion, music), important differences between them emerge. 2) Each type of cultural industry "behaves" similarly in LA and NYC despite differences in scale, geography and urban configuration. 3) Some cultural industries tend to co-locate (e.g. art with design), and this co-location remains constant in both locations. The analysis enables us to suggest ways in which cultural industries can aid in economic development.

Introduction

Planners and geographers have long been interested in how space (and place) impacts economic functions and vice versa (Massey 1984; Piore and Sable 1984; Storper 1994). It has long been assumed that geography shapes industrial dynamics. Yet recent work has pointed towards the possibility that industries are not tied to the urban form as much as to their distinct linkages with particular types of infrastructure and their social and economic networks (Saxenian 1994; Porter 1998). Instead, industries have similar clustering patterns even in cities that have very diverse overall typologies (Currid and Connelly 2008).

Such relationships are particularly clear in the industrial patterns of artistic and cultural industries. Recent work emphasizes that cultural industries exhibit intense concentration patterns in a handful of metropolitan areas (Rantisi 2004; Scott 2005; Currid and Connelly 2008). While some work on arts and culture indicates that different metro areas possess different degrees of and specialty in the arts, cultural industries and producers still tend to cluster in close proximity to one another (Markusen and King 2004; Markusen and Schrock 2006a, 2006b; Currid 2006).

The patterns of cultural industry clustering have become increasingly significant in economic development literature and practice, as arts and culture have become central players in the revitalization of urban centers. Cities and regions seek to maximize their “artistic dividend” (Markusen and King 2004; Markusen and Schrock 2006a) through both localized community focused arts development and large-scale institution building (Strom 2002). Recent efforts to cultivate arts and culture have stemmed largely from three arguments: 1) The arts are a means by which to establish urban or regional “distinction” (Markusen and Schrock 2006a) 2) The arts act as an important lure for drawing high-skilled human capital (Florida 2002; Clark 2004) 3) The arts are a significant revenue driver in their own right (Markusen and King 2003; Currid 2006; Alliance for the Arts 2007). As such, contemporary economic development efforts have incorporated the arts as a keystone in local urban and regional policy initiatives.

While the film and multi-media industries are the recipients of tax breaks, relocation packages, space allocation and other targeted incentives, the visual and performing arts are viewed as sectors that need subsidies but rarely turn a profit or give back to the community in the form of jobs or tax revenue. For example, New Mexico, New York,

North Carolina and Canada have aggressive film industry incentives (LA Times 2008; Baker 2008). So much so, that as a *Los Angeles Times* (2008) editorial reported, Hollywood's hit show *Ugly Betty* relocated filming to New York City because New York State tripled its tax incentives directed towards the film and TV sectors. Contrast this approach to that towards performing and fine arts, where subsidies are given to mega-arts projects in the hopes that they will catalyze other development, but with the understanding that these initiatives will not necessarily pay for themselves (Wakin 2006). Projects that could fall underneath this umbrella include the Milwaukee Art Museum, the Madison, Wisconsin performing arts center by Cesar Pelli and New Jersey's performing arts center in downtown Newark (Smothers 2006).

In economic terms, the arts are characterized as market failures (producing Baumol's dreaded "cost disease" (Baumol and Bowen 1965)), which need subsidies; as opposed to producing viable markets in their own right. More recently (as noted above), the arts have been seen in more favorable light as the first step in a two step model: they are attractors of foot traffic and the human capital that will bring revenue, jobs and so forth to a locality. As such, efforts towards "the arts" tend to be coupled with philanthropic efforts (as opposed to local or state-level industrial policy), involving the community and regional partnerships as opposed to economic development corporations. Many of these initiatives utilize the arts for producing spin-off effects (e.g. attracting the creative class) rather than as sectors bringing in tangible profits in their own right. But much economic development literature and practice targets consumers of cultural goods (e.g. providing music venues, cultivating bohemian downtowns for the "creative class"), rather than the needs of the cultural industries themselves.

Despite the unique, taste-driven nature of cultural industries and their goods and services, like other sectors, the arts depend heavily on agglomeration and the external economies that are associated with high concentrations of labor pools, firms and industry-specific resources that produce important benefits to physically “being there” (Becker 1982; Storper 1994; Porter 1998; Gertler 2004; See also Marshall 1890 for the seminal discussion of the benefits of agglomeration). Becker’s (1982) seminal work on “art worlds” documents the way in which artists rely on codified organizational structures and networks to create, evaluate and distribute cultural goods, a finding corroborated in subsequent work on the arts (Faulkner and Anderson 1987; Rantisi 2004; Currid 2007, among others). And thus, despite the current consumer-oriented approach towards cultural development, economic development for the arts may be most effective if the arts are targeted like any other industry by focusing on how the industry works and organizes itself, in addition to the study of how it is consumed.

Recent work looking at the industrial patterns of cultural industries indicates that they exhibit mono-nucleated tendencies across metropolitan regions. Even in urban areas that tend to possess multi-nodal tendencies in other industries (e.g. finance, professional services), art and culture remain significantly clustered and concentrated in the urban core (Currid and Connelly 2008). In the aggregate, more than any other industrial sector, cultural industries (fashion, art, music and design) produce strong "hot" spots within the broader metropolitan area.

While this initial work on artistic industrial patterns points to the prominence of certain metro areas as centers of cultural production in general, in this paper we sought to see how such clustering dynamics played out on a more micro level and to compare the

clustering patterns of each distinct sector. One key point of inquiry was explored: How do the cultural industries cluster by sector and by scale? In other words, while the cultural industries have been looked at as a whole sector, how do these distinct industries interact similarly or dissimilarly from each other on the scale of a city neighborhood?

Understanding these patterns is important for determining how the spatial agglomeration of creative industries affects the economic development of cities and how to best target development policy towards the arts. The analysis helps inform local economic development and allows us to provide some suggestions for how cities can take advantage or encourage the use of creative industries for development purposes.

Using 2005 Bureau of Labor Statistics data on the zip code level, we conducted Geographical Information Systems (GIS) analysis, including spatial-auto and Pearson correlations to compare Los Angeles and New York City, two very different types of geographies and urban environments that are significant centers of artistic and cultural production in the United States. Three distinct findings emerged: 1) While in recent years, the cultural industries have been studied in the aggregate, when they are disaggregated into distinct industrial sectors (art, fashion, music, design), important differences between them emerge. 2) Each type of cultural industry "behaves" similarly in Los Angeles and New York City despite differences in scale, geography and urban configuration. 3) Some cultural industries tend to co-locate (e.g. art with design; music with film) with others, and this co-location remains constant in both locations.

Qualitative work studying the dynamics of creativity and the cultural industries may inform these industrial spatial patterns (Becker 1974; Faulkner and Anderson 1987; Florida 2002, Rantisi 2004, Scott 2005, Currid 2007). Cultural industries desire dense

industrial and social networks that rely on ad hoc labor pools and informal social exchanges for career mobilization. Cultural industries tend to seek out and cluster around particular types of high-value infrastructure (e.g. recording studios, film sets). Due to the taste-driven nature of cultural goods and services, being in the same place and in close proximity to create, evaluate and distribute may matter more to cultural production than other industrial groups (Caves 2000; Currid 2007). We briefly discuss these attributes and consider how unpacking the spatial configurations and social and economic dynamics associated with cultural production may help inform local economic development of art and culture.

Theories and Concepts

Art and Human Capital

Art and culture have long been considered a vital part of urban life. Cities are the central node for artistic expression, production and consumption; they are the places where great orchestras' play, symphony halls are built, starving (and famous) artists congregate and world renowned museums are situated. Yet while art and culture are positive amenities in the urban composition, they have been considered more as "extras" rather than as critical components of city development. More recently, however, the perspective has shifted and art and culture have become key players in the economic development arms race as cities and regions seek to define their uniqueness and "distinction" (Markusen 2004) and attract high-skilled human capital (Florida 2002).

This latter angle has been of particular import as urban economies have evolved from being centers of manufacturing and physical production to being powered by human

capital and ideas (Hoover and Vernon 1962; Bell 1973; Florida 2002; Glaeser 2003). As this line of argument goes, cities compete with one another to attract footloose human capital and firms. Such efforts involve a broader strategy of amenity building (Clark 2004) and consumption-driven development which is argued to be significant in the location decisions of high-skilled human capital (Brooks 2000; Florida 2002). Glaeser et al (2001) found that cities that possess greater levels of amenities grow faster and are more productive than those possessing fewer amenities. Clark (2004) argues that not only are amenities significant in attracting human capital but that specific types of amenities are of interest to different kinds of human capital.

Art as Development Tool: Benefits and Backlash

As a result, economic development strategies have increasingly sought to cultivate quality-of-life initiatives, in which art and culture play a significant role. With regard to the arts, these strategies appear to fall into two distinct categories: 1) Constructed arts and culture institution building 2) Cultivation of local cultural “authenticity”. It should be noted that both types of initiatives also have the spillover effect (sometimes intentional and sometimes not) of tourism generation and gentrification¹.

Constructed efforts to infuse cities with arts and culture tend to come in the form of large scale redevelopment and high-end institution building (Strom 2002), producing what has been called the “Bilbao effect”, in reference to the Frank Gehry-designed Guggenheim museum in Bilbao, Spain (Plaza 2006; Grodach 2007). Such use of “the arts” as revitalization agents has manifested itself in big ticket development such as Los Angeles’ Gehry-designed Disney Music Hall, which has been estimated to cost \$236 million and

Miami's \$225 million Performing Art Center (Russell 1999). Perhaps one of the most famous applications of cultural development is the revitalization of New York's Times Square. This revitalization effort, which at once is a business, political and cultural initiative, reinserted Broadway's relevance and introduced Disney as the cultural and corporate juggernaut of the district. Simultaneously, the Times Square redevelopment wiped out the crime, pornography and other forms of urban blight that long plagued the neighborhood, which was precisely the point (Fainstein 2001; Sassen and Roost 1999). However, on the whole, these constructed efforts towards cultural development have been met with ambivalent response (including those aforementioned). On the one hand, the ability for arts and culture to redevelop blighted areas, attract new residents, and also produce spillover tourist effects has been widely hailed. On the other, constructed cultural developments are decried as creating simulacrum of real places. Hannigan (1998) argues that cultural development is part and parcel of the new urban economy that is nestled snugly between commodification, consumption, and entertainment, or what he calls the "fantasy city". Sorkin (1992) and Evans (2003) are less charitable noting that such redevelopment efforts end up producing places embedded in corporate interests that look exactly the same as one another, or what Sorkin calls "Disneyfication".

Almost antithetically, economic development of arts and culture has also become significantly focused on the establishment of "authenticity", which takes the form of smaller-scale initiatives that emphasize a city or neighborhood's localized uniqueness. Carr and Servon (2007) identify a typology of "vernacular culture" by which cultural authenticity is cultivated through local markets, ethnic neighborhoods and historical or "heritage" sites, and promotion of indigenous arts and culture. Zukin (1989) and Lloyd

(2005) document the process by which local artists acted as redevelopment elixirs (in New York City's Soho and Chicago's Wicker Park, respectively), both improving the economic vitality of their neighborhoods while also establishing place-specific cultural identity, which, as it turns out, proves to be a potent lure for attracting highly skilled human capital that seeks out culturally vibrant environs (Florida 2002; Lloyd 2005).ⁱⁱ While these latter examples are primarily organic (in that the artists' agency is what propelled the development), the revitalization impact of artists has been noted, and subsequently much recent economic development has involved boosterism of local arts communities and music scenes, of which the longstanding impact remains to be seen. In his study of Philadelphia, Stern (2002) argues that place with cultural institutions and artistic activity are three times more likely to see poverty rates decrease and population increase, concluding that increases in urban vitality are strongly correlated with the presence of cultural activity. Markusen (2004) and Markusen and Schrock (2006b) make the case that in the current climate of homogenized development and economic base the arts are a means for urban centers to establish "distinction" from other places. As such, cultivating (and making known) a city's local artistic uniqueness can be an effective economic development scheme that challenges the often criticized homogenization and "Disneyfication" that is present in current strategies.

It must be noted however that much of economic development's focus on arts and culture has been targeted toward consumers and market interests, as opposed to the immediate needs of the industries, particularly because as Mommaas (2004) articulates, cultural production has become increasingly aligned with the market. Undoubtedly, artists have long received housing subsidies and the film industry receives tax breaks, for example

New York City's artists-in-residence program which rezones manufacturing areas as artists' work-live spaces. Yet in terms of general economic development, arts and culture are much less likely to be the recipients of conventional industrial policy, and more likely to be incorporated into strategies for local and tourist consumption. Part of this has to do with the hybrid and unique position that the arts occupy in urban economies. At once the arts produce goods and services that can be produced and distributed on a global marketplace while also being locally consumed (Pratt 1997; McCarthy 2006). There is also the almost intangible attraction of the arts as a desirable neighborhood or city attribute (even if, as Florida (2002) points out, inhabitants seek to be near the arts even if they choose not to actually consume them). Certainly, in this respect, law and financial firms do not have quite the same appeal. Thus, economic development of the arts tends to wrestle with the tension between the arts as targets of economic development in their own right (similar to finance or biotechnology) or whether the arts should be cultivated as an ancillary actor to attract firms and human capital. Certainly, the latter approach has been adopted more ubiquitously, in part, because development of cultural amenities has been hailed (and criticized) as being perceived as a magic, cost-effective elixir of urban blight and attractor of the "creative class" (See for example Florida 2002 but also critics Peck 2005; Kotkin 2006; Markusen 2006; Trip 2007).

But there is reason to believe that the rationale behind making the arts targets of economic development needs to be reexamined, or at least expanded. First, there has been significant research outlining the notable economic impact of the arts with regards to generating revenue, jobs and competitive advantage (Markusen and Schrock 2006a, 2006b; Currid 2006; Alliance for the Arts 2007; LAEDC 2007). Second, recent work

studying the cultural industries indicates that their location decisions are reflective of a desire to cluster with likeminded firms and in places that offer thick labor markets, ability to cross fertilize with other cultural fields and in places that have other industries that may seek out artistic skills on an ad hoc basis (Caves 2000; Markusen and King 2003; Rantisi 2004; Scott 2005; Currid 2007). Thus, arts and culture sectors reflect the same economic dynamics that have been observed in other industries, particularly the desire to cluster firms, labor and other forms of capital (Saxenian 1994; Storper 1997; Porter 1998).

Industrial Clustering and Development

Clustering has long been understood as a central part of economic development. The concentration of industry (and related industries) has the potential to produce, what Castells and Hall (1994) call, “perpetual innovation”, resulting in new divisions of labor, additional revenue streams and increased productivity (For a more detailed account of the agglomeration literature, please see Marshall 1890; Piore and Sabel 1984; Storper 1997, 1990; Scott 1993; Porter 1998; Martin 1999). Several significant benefits outlined in the literature are the ease of buy-sell relationships (Hill and Brennan 2000; Thompson 1965), the ability for firms to diffuse innovation risk by sharing infrastructure, technology, R&D responsibilities and resources (Jacobs 1969; Piore and Sabel 1984, Saxenian 1994) along with being able to act as support systems for one another, as Sassen (1991) puts forth in the case of high level producer services and finance in “global cities”.

More recently, research on industrial clustering has sought to articulate the precise dynamics and patterns of industrial geography and location. Audretsch and Feldman

(1996) argue that industries tend to spatially concentrate their innovation practices in different locations from their production processes (and that innovation activities must be concentrated to maximize benefits), a result that Massey (1984) also found in her study of the electronics and automobile industries. Saxenian (1994) documents the way in which Silicon Valley was able to produce such rapid innovations through the geographic linkages between the labor pools generated from Stanford University, the financial resources of San Francisco and the entrepreneurial startups emerging from San Jose. Porter (1998) notes similar geographic-dependent industrial clusters in his now seminal study of the Northern California wine industry. Rantisi (2004) observes similar types of co-location in her study of New York City's cultural industries, particularly linkages between the major art and design institutes, the fashion industry's Seventh Avenue (and the establishment of the MoMA and the Metropolitan Museum of Art) and the subsequent clustering of fashion and art media, the latter being a significant conduit in cultivating the "New York" brand, thus solidifying the city's position as one of the world's leading centers of artistic production. Molotch (1996; 2002, 2003) argues that the agglomeration of innovation and production processes within one geography generates place-based reputation or "place in product". This dynamic has pronounced implications for development as cultivating this reputation enables one place to gain advantage in production (and selling) of a particular good (e.g. wine, art, designer shoes) over other places specifically because it was produced in that place.

As such, economic development of the arts may be particularly effective if it focuses on the industry (production) dynamics as well as the consumer side. In order to develop effective industrial policy, understanding the clustering patterns of arts and culture is an

important first step. Currid and Connelly's (2008) study of "advanced services" highlights the distinctly different types of industrial clustering that finance, professional services and the arts have across different metropolitan areas, indicating that industrial policy ought to be both sector and place specific, and that previous conceptions of clustering may in fact be inaccurate and thus policy less effective (e.g. Contrary to our anecdotal evidence of finance's central city clustering, the industry actually tends to have many different nodes throughout the region, which may explain why tax breaks to keep financial firms in the central city are unsuccessful).

In this paper, we seek to look at how the industrial patterns of the arts and culture sector may help inform economic development. Particularly, we build on previous work studying industrial patterns on a macro level and the qualitative research conducted on the social and economic attributes of the cultural industries, both of which have been documented above. Merging these two streams of research, we look at the micro and neighborhood level clustering patterns of the cultural industries in Los Angeles and New York City, two cities that are simultaneously the most concentrated centers of artistic activity in the United States (Markusen and Schrock 2006a; Currid 2006) and also paradoxically exhibit opposing urban and spatial configurations (e.g. Los Angeles' sprawl, large geography and automobile-dominated metropolis versus New York's density and public-transit oriented emphasis). We seek to understand some basic tenets of cultural industry clustering that we hope will inform previous qualitative research and future economic development policy towards the arts.

Data and Methods

This research builds on previous research that shows that arts and culture industries tend to have more mono-nodal clustering tendencies, than other human capital and high-skilled, “advanced” industries. This finding was significant because these clustering tendencies occurred across all ten cities that were analyzed, even though, many of these cities exhibited very different clustering patterns among other industry typologies (Currid and Connelly)ⁱⁱⁱ. Given these findings we speculate that the consistent mono-nodal tendency of the arts and culture industry, across various cities, is likely the result of industry behavior that tends to overcome spatial and geographical differentiations of different metropolitan areas. In order to understand these spatial patterns this research study breaks the industry data down in two ways: 1) By industry: Disaggregating the art and culture industries into their respective sectors (e.g. fashion, art, music, film, design) 2) By scale: Looking at these cultural sectors on a more fine-grained geographical scale, using zip codes as a proxy for neighborhood or district. We believe analyzing industries in more detailed subsets might illustrate and further explain the overarching mono-nodal clustering patterns. Focusing on two distinctive cities became an important approach for this study because it would allow for a more detailed analysis of how arts industries operate given each city’s unique spatial dynamics. Los Angeles and New York City were chosen because they are both important centers of artistic and cultural activity in the United States (Markusen and Schrock 2006b; Currid 2006) and yet exhibit distinctly different spatial, political, urban and geographic configurations. Thus, we believe that these two cases offer counterfactuals to each other, enabling us to study whether cultural industries are a function of unique place-specific spatial conditions or a function of larger industrial socio-economic dynamics that manifest despite differences in place.

Given the interest in understanding the local relationships of the art and culture industry we chose zip code level data as a proxy for measuring industrial clustering on the neighborhood or district scale. While zip codes are not a perfect match to neighborhood, in densely populated cities they are a good proxy for this scale of analysis. Spatially statistics were employed to determine the extent in which the different sectors of the arts industries cluster overall and to identify particular hot-spots, or localities in which there was a significantly higher presence of a particular industry. The Global Moran's I method was used to identify the tendency of the industry to cluster overall while the Getis-Ord (G-stat) to measure industrial clustering "hot spots". High value Moran's I coupled with a "hot spot" represented a nonrandom, highly clustered area. Techniques were also employed to analyze the interplay of the arts and culture industries themselves. Spatial correlations tests, using the Pearson correlation method, were developed to measure whether the arts industries tended to co-locate. The scale of the study's analysis, both geographically and in terms of the industry variables, allowed for a neighborhood level investigation, in which localities within cities were identified as having high concentrations of particular arts and culture industries themselves.

Geographic Focus: Los Angeles and New York

This study chose to look more closely at the arts and culture industries in New York and Los Angeles because of these cities similarities and differences. Both cities are known for their arts based economies and both cities have similar mono-nodal clustering tendencies with the arts and culture industries. At the same time New York and LA exhibit very different urban forms and disparate regional clustering patterns in their other industries – with New York being mono-nodal and LA being multi-nodal. (Currid and Connolly,

2008). The focus of the arts industry in both cities is also different, LA is dominated by film and music and New York is dominated by art and design (Markusen and Schrock 2006b; Currid 2006). These two cities similar distribution of the arts industries on a macro scale coupled with their distinctly opposing spatial configurations (urban form) make these two cases a useful tool for understanding what local or economic conditions might cause that art and culture industry to exhibit similar overall spatial clustering patterns despite their different urban configurations.

Defining the Study Area: What of the Boundaries of Los Angeles and New York?

The boundaries of New York and Los Angeles were chosen as the study area because we were interested in the center-city focused clustering patterns exhibited in both cities as opposed to a regional expression of these patterns. While New York City's urban boundaries are easily defined by the boroughs, Los Angeles is a more complicated geography.^{iv} We choose to identify New York City as the five boroughs; Brooklyn, Queens, Bronx, Manhattan, and Staten Island. Studies of New York City often focus on Manhattan because of the extent to which the economy is centered in this locality. While a study of Manhattan would help illustrate how concentrations of industries interact it would miss industry spill over to the five boroughs.^v Defining what is considered the city of Los Angeles is harder than New York because of its sprawling development patterns. We choose to define LA as Los Angeles County because it is a widely accepted definition in various studies of the city and includes cities such as Beverly Hills, Santa Monica and West Hollywood, areas that have their own political jurisdiction but are

economically and socially tied to Los Angeles and each other (See for example Dear 2003; Ethnington 2006, 2008).

Industry Variables: Layers Industry Development

We collected 2005 industry data from the Bureau of Labor Statistics on the zip code level. Industry codes provided by the Bureau of Labor Statistics (BLS) were analyzed and those industries relating to art and culture were identified (See Appendix).^{vi} **Table 1** illustrates how industry codes were broken down for each arts industry category.^{vii}

[INSERT - Table 1: Distribution of Firm Type by Sector]

Spatial Statistic Employed

Given the hypothesis that distinct spatial patterns may be exhibited in the sub-categories of the arts and culture industries and the questions revolving around spatial clustering as it relates to industry research in general, the arts and culture categories were tested to establish whether clustering patterns occur in each sub-category. The research had no pre-determined clustering foci, but rather was interested in identifying localities that exhibited clustering patterns in order to determine conditions that might have caused these results. The Global Moran's I statistic was employed first to test whether the data exhibited any clustering patterns overall. The Global Moran's I statistic tests whether spatial autocorrelations occurs based on feature locations and attributes and provides a result that explains the level of clustering, dispersion, or random nature of the data.^{viii} The calculation produces a Moran's I value, where a value near +1.0 indicates clustering and a value near -1.0 indicates dispersion.^{ix} The results of our analysis showed that

spatial clustering occurred for all arts industries typologies. While some typologies clustered slightly more than others overall we found that the patterns for both the region and the city showed tendencies to cluster.

While Moran's I is useful in identifying whether geographies exhibit patterns that illustrate non-random distributions the Getis-Ord or G^*i statistic is commonly used to look at the more localized nature of the data. The Getis-Ord G^*i is often referred to as the hot-spot test because of its ability to determine hot-spots in the data. The Getis-Ord G^*i method was employed to determine whether localized geographies in New York and Los Angeles had "hot-spots" or areas that have values higher than you might expect to find by random chance. (Statistical significance)^x The output of the calculation produces a Z score which represents a significance of clustering at a specified distance.^{xi} Areas identified as hotspots in the G^*i statistic not only explain that values in a particular area are high, but they also explain that given the values surrounding that area it is significant that high values are appearing at that location.^{xii}

After performing the Getis-Ord analysis, zip codes which exhibited the highest Z scores for each arts category were identified as hot-spots. We then identified the neighborhoods in which these hot-spots existed, the identification highlighted that particular industries had tendencies to co-locate. For example in Los Angeles it appears that neighborhoods identified as high for music were also high for film. Patterns began to emerge from the neighborhood identification suggesting a spatial correlation between hot-spots and different arts industries. In order to determine whether this co-location was significant a Pearson's correlation test was performed to identify the relationship between the hot-spots and industries sub categories.^{xiii}

The identification of localities through the hot-spots analysis and the correlation test allowed for the identification of neighborhoods that are particularly relevant to certain arts and culture communities. Neighborhoods correlated to particular arts industries were then analyzed across the cities (New York and Los Angeles) to identify similarities and differences. The analysis showed that specific industry sub-types operated in very similar ways in both cities. Arts industries that co-located in New York also did so in Los Angeles highlighting the fact that the industries operate in similar ways regardless of the spatial configuration. These cross comparisons also looked more closely at the localities themselves to compare physical and social elements that might have contributed towards their identification as industry hot-spots.

Results: Neighborhoods and Cultural Clustering

Cultural industries tend to cluster in central locations within Los Angeles and New York City. This finding corroborates previous research on the concentration of cultural industry activity in U.S. metropolitan regions (Markusen and Schrock 2006b; Currid 2006; Currid and Connelly 2008) and also work done on the cultural industries in the UK (Pratt 1997; McCarthy 2006) and the Netherlands (Mommaas 2004). When the cultural industries are disaggregated, however, discrete patterns emerge amongst the different cultural sectors. In particular, three key findings emerge: 1) The distinct cultural sectors of fashion, art, film, music, design and performing arts produce different geographic clustering patterns from one another 2) These different clustering patterns do remain consistent in Los Angeles and New York City 3) Some cultural industries tend to co-locate with others and this co-location can be seen in their clustering patterns in both places. We will discuss these in turn.

The Geography of Culture: Different Industries, Different Patterns

While all cultural industries tend to exhibit densely concentrated industrial patterns, this concentration varies both in degree and number of industrial nodes throughout the city. Overall, both New York and Los Angeles possess neighborhoods that are particularly endowed in cultural industry concentration. Within Los Angeles, Beverly Hills, Santa Monica, and West Hollywood possess the greatest number of high concentrations of cultural industry location. In New York City, Midtown on the west side, Chelsea and Soho are the most concentrated cultural neighborhoods.

We believe there are two plausible explanations (both of which will be discussed in more detail later). First, cultural industries unlike other post-industrial, high-skilled industries require an immediate consumer base, which means that the industries tend to locate where demand is concentrated. Thus cultural production and consumption often occur simultaneously. Consumers of cultural goods tend to be those possessing enough disposable income that they are able to purchase “post-scarcity” goods (Inglehart 2000), such as the arts. Thus, neighborhoods possessing high concentrations of cultural activity are also neighborhoods with high-income residents.^{xiv} Second, cultural industries also seek out particular types of infrastructure that enable them to “produce” their art, which includes concert halls, theaters, museums and so forth. As such, cultural industries tend to locate in places where cultural performance infrastructures are also present, the latter again being located in neighborhoods where demand for their goods and services is high. Underneath this broader pattern of clustering, however, each industry exhibits its own unique clustering tendencies that appear consistent in Los Angeles and New York. We will discuss some of the important findings of this analysis.

Music, art and film produce similar types of industrial clustering patterns, though these patterns do not necessarily show up in the same neighborhoods. All of these industries tend to produce two large nodes of concentration that encompass several congruent zip codes. For example, Los Angeles' film industry exhibits a dual-nodal clustering pattern that shows up in two distinct zip code clusters: the West side of Los Angeles and the San Fernando Valley (e.g. "the Valley"), which includes Burbank and Encino. This clustering pattern demonstrates the evolution of the city's film industry and its natural extension into the Valley in recent years (Scott 2005). Again, in New York City, the film industry has two distinct nodes (Midtown and Chelsea), each of these clusters are large representing two zip codes and several Manhattan neighborhoods. While in both cities, the film industry locates in just two nodes, these centers spill over into several different neighborhoods (e.g. zip codes), creating large industrial districts. Overall, these industrial patterns exhibit the need to be around a consumer base and high-value infrastructure necessary to their cultural production (e.g. stages, music halls, recording studios and galleries) also located within these districts. For example, New York's midtown is home to some of the most significant cultural infrastructures in the city (e.g. Carnegie Hall, Broadway Theaters, and Lincoln Center) and also is the most concentrated center of music and performing arts activity. These clustering patterns also demonstrate the evolution of the industry over time and its migration towards other parts of the city that are able to facilitate cultural production. Case in point: as has long been documented, New York City's art district was initially in Soho as a result of the abundant and inexpensive warehouse space left over from the manufacturing industry. Artists flocked to this infrastructure as it offered the ample space they needed to do their work

(Zukin 1989; Molotch 2007). Later, as the price of real estate increased, artists moved northwest (but not too far away) to Chelsea which also offered copious amounts of old manufacturing space that could be converted into studios and galleries. Los Angeles' film industry, once dominating the west side of the city moved to "the Valley" in part as a result of needing more space.^{xv} The San Fernando Valley has long been an instrumental part of the Los Angeles region's economy, while still being less cost-prohibitive than Los Angeles' other districts.

[Insert Maps 1 & 2: New York and Los Angeles Film Industry Maps]

Design and fashion exhibit converse clustering patterns that capture more extreme types of clustering behavior than exhibited by music, film or art. Fashion is mono-nucleated in New York City and has two small nodes in Los Angeles, in both cities these centers are represented by a much smaller geography (e.g. only one zip code per node) than other cultural industries. In New York City, fashion's only hotspot resides in the Clinton zip code which is a part of the city's historical Garment District area. In Los Angeles, while the fashion industry is both in the West side neighborhoods of West Hollywood and Beverly Hills and also in the downtown Fashion District, both nodes are remarkably small in comparison to the other studied industries. We believe fashion has a unique clustering pattern due to its hybrid position as an art form but also a commodity with a traditional production process. Fashion runway shows are very theatrical and are often referred to as a type of theater, and in this respect fashion tends to cluster in high-end districts (e.g. Beverly Hills). At the same time, clothing design and production tends to tie into manufacturing, and thus even though much of "fashion" is more design-driven in both cities, the heritage of the Garment District in Manhattan and downtown Los Angeles

as a manufacturing centers remains. Further, while New York's fashion manufacturing is almost nonexistent (and replaced by high-end fashion design studios), Los Angeles is still a notable center of clothing manufacturing, much of which is produced in downtown Los Angeles (LAEDC 2007).

[Insert Maps 3 & 4 Here New York City and Los Angeles Fashion Maps HERE]

If fashion represents the most concentrated type of cultural industry, design is certainly the most ubiquitous. Design industry in both New York City and Los Angeles tends to locate not just in a multiple of nodes but also across vast swaths of the cities' geographies. While most of its industrial activity can be found in the mid to lower part of Manhattan (indeed as is the case with all of the cultural industries), design's presence is pronounced in zip codes that spill east, west, north and south. Similarly, in Los Angeles, while design does not appear significantly in the Valley, its presence can be found in neighborhoods stretching all the way West to Venice Beach into East side neighborhoods such as Pasadena. We believe that the ever-present clustering of the design industry is a function of the universal need for design skills in many different industries and also in residential needs. Further, while design firms certainly need studios and infrastructure to do their work, a significant part of design is contract work whereby a design firm (or designer) works on a site-specific project, which both allows and encourages design industry clustering in multiple neighborhoods where its services would be in demand.

[INSERT Maps 5 & 6 : New York City and Los Angeles Design Maps Here]

Co-Location of Cultural Industries

On a general level, cultural industries tend to cluster in the same neighborhoods which can be explained by both demand and supply factors. Anecdotally we can observe that certain neighborhoods are “hip” or “hot” and often part of these districts’ appeal are their abundance of cultural consumption from music venues to art galleries. Part of this trend is a result of the shared need to locate near a cultural consumer base, and likely those who go to the theater may also be inclined to visit galleries, attend the opera and so forth. Thus, the cultural agglomeration is also a consumption agglomeration or what Clark (2004) has called the “city as entertainment machine.” There is also agreement that cultural industries tend to form symbiotic relationships with one another, whereby they share labor pools, resources and infrastructure (Becker 1982; Pratt 1997; Caves 2000; Markusen et al 2006; Currid 2007) or what Bordieu (1993) called more broadly the “field of cultural production”. While these generalizations tell us something about the symbiotic and reinforcing nature of a cultural and artistic milieu, they are not enough to explain the nuances amongst neighborhoods and exactly which types of cultural industries may actively seek to co-locate with others. We wanted to further understand this pattern of cultural production co-location in a tangible and detailed sense so that we could make better sense of why such co-location occurs and how such understanding might inform development of art and culture industries.

Using the Pearson correlation, we measured the extent to which specific cultural sectors co-located with one another. Overall, we found that while, on the whole, cultural industries tended to co-locate, particular cultural industries exhibited statistically significant co-location patterns. The strongly geographically correlated industries are performing arts and music; music and film; art and design; and art and film, all of which

have correlations over 0.75 (See Table 1). We believe there are strong social and economic explanations for these relationships, many of which have been qualitatively reported in the literature.^{xvi} Design and art, music and film, and performing arts and music are the most salient linkages. Each of these sectors tends to borrow and exchange skills from their co-locating counterpart. Performing arts and music are at times interchangeable (one could easily argue that music is a performing art), and performing arts (like film) needs music in many forms of its cultural production. Design and art not only share skills but design is often considered art. Artists unable to make a living solely as fine artists often use their skills to work in design firms and there is an increasing trend towards more design-oriented art forms that can be more easily commodified (Currid 2007). More broadly, these relationships indicate the cross fertilization of skill sets in cultural industries, what Markusen et al (2006) have called “crossover” and Currid the “flexible career path”. Thus, the geographical concentration of industries and labor pools both seeking and supplying artistic skills makes such exchanges far more efficient and facile.

[INSERT Table 2 : Los Angeles County : Arts Industry Correlations]

[INSERT Table 3: New York City: Arts Industry Correlations]

Finally, cultural industries tend to do business in both formal and informal nodes, with the latter being particularly useful in the exchange of ideas and skills across industries, thus co-location of industry enables these informal production networks to occur, an

observation Saxenian (1994) made with regard to the high technology industry. Further, many of these industries physically use the same necessary infrastructure and institutions for their cultural production and performance and concurrently cultural consumption. Thus, the clustering of music and performing arts and music and film in Midtown New York may be explained by the presence of Carnegie Hall and the Lincoln Center, which are important places for musical, film and performing arts events. Conversely, as fashion is unique to all other industries in its production, infrastructure needs and relationship to the market, it does not exhibit any strong correlations with other industries, with design being its closest brethren at 0.65. Again, such results make sense: Of all of the industries, design by far is the most like fashion in its production and market dynamics. Both industries are fundamentally market driven (as opposed to “art for art’s sake” Bourdieu (1993)) and both produce physical, tangible goods for the most part.

We believe that these results provide some significant implications for economic development and policy. Particularly, these implications give us new directions for how to form development targeted both at geography and industry. In this final section, we will discuss our conclusions.

Implications for Economic Development

In recent years, developers and planners have become particularly focused on the importance of the arts in the revitalization of blighted and depressed areas, luring of high-end labor pools and firms, and generation of tourism revenue. Many of these efforts implicitly (if not explicitly) are aimed at boosting consumer demand, drawing well-heeled and highly-skilled residents, and facilitating the marketplace. Industrial policy

towards the arts often comes in the forms of tax breaks for film, subsidies for artists' dwellings and grants for public art. Again, such efforts are important. However, in the newfound interest in the arts as a mechanism for development and the acknowledgement that the arts are significant job and revenue generators, planners and policymakers also ought to consider the central means by which cultural industries organize themselves and their production processes and how this organization is reflected spatially, thus impacting the neighborhoods and cities in which these industries set up shop.

Such analysis has been done on the cultural industries in general and their impact on the region as a whole. Yet as this paper demonstrates, when cultural industries are disaggregated and looked at on a micro-level their industrial organization and clustering patterns are quite different from each other and shed light on why economic development towards "the arts" may be less effective than policy that is directed towards each sector and its unique industrial organization. We say this because, as long documented in the literature, the clustering of industrial activity has significant impact on the ease of knowledge transmission, access to labor markets and ability to advance R&D efforts. These important "tacit" and "uncodified" benefits to co-location are notable in their impact on economic development (Porter 1998; Gertler 2003). Becker (1974; 1982) and later Pratt (1997) and Currid (2007) note that the arts are not produced by lone individuals, but instead rely on a context and organization of cultural production that is significantly "embedded", to use Granovetter's (1985) term, within a social infrastructure and milieu. Thus, understanding the pattern of clustering that an industry exhibits is a necessary aspect of cultivating industrial policy. As this paper has shown, however, in order to be effective, policy towards "the arts" should actually be policy towards film,

music, fashion and design as separate spheres. These industries have their own clustering patterns much the same way finance clusters differently from law or the wine industry.

That said, our work also demonstrates that certain industries (like music and film) appear to seek out similar types of places and spatial configurations no matter where they locate.

We believe that this tendency largely has to do with these industries' unique dependency on high-value infrastructure that is necessary in the production and consumption of their goods and services. Such symbiotic relationships need to be accounted for in policy and planning. For example, Philadelphia's Avenue of the Arts is a mile-long section of the city's Broad Street where 11 cultural and education institutions and 7 performing arts are located, in addition to redeveloped warehouse space into residential use and the clustering of bars, restaurants and retail. The creation of this arts district has had the added benefit of drawing in private investment and the generation of almost 4000 jobs and over \$150 million in revenue (NGA, 2001).

Similarly, the statistical significance of industry co-location between certain sectors suggests that economic development policy ought to also consider how some industries establish symbiotic relationships with each other. For example, the most successful development policy towards art should likely include initiatives for the design industry, as the two sectors have a strong tendency to co-locate (which we believe is due to their sharing of skills, resources, labor markets and consumer bases). Such an approach might build off of Pratt's (1997) Cultural Industry Production System model, whereby interaction across cultural sectors along with the maximizing links between their production processes and local tourism and development efforts can produce positive economic outcomes. So while on the one hand, we are advocating that development

towards the arts must actually be policy designed specifically for each sector, we also note that arts industries appear to have mutually beneficial outcomes in co-locating, which, as previously discussed, is an observation long documented in the qualitative research conducted on cultural industries.

We also believe that cultural industries depend significantly on an immediate consumer base, which is a condition unique with regard to other post-industrial sectors which often transmit their goods immediately to a global marketplace. While cultural industries also have a global market, many of them involve performance, whether gallery openings or music shows, which means they need patronage in their immediate surroundings (whether this comes in the form of local residents or a constant flow of tourists). As such, development of these industries may also mean being sensitive to the micro-socio-economics of the places in which the arts are being cultivated. On the one hand, many of the cultural industries already tend to cluster in well-heeled neighborhoods. On the other, those using the artistic industries (different from “artists” per se) as a revitalization tool should adopt a broader approach that includes improving the many aspects of neighborhood blight. The arts are important but they are not a silver bullet in their own right, and may be more effective if tied to broader development goals of increasing jobs, improving housing stock and so forth. For example, as the New York City Arts Coalition points out, the arts could be a crucial aspect to the complete rebuilding of Lower Manhattan in the wake of September 11th, tied into other efforts to bring investment, residents and firms downtown (Cornwill 2003).

Finally, as place-specific as cultural production is and as different as Los Angeles art is to New York art, ironically, the cultural sectors tend to have consistent ways of organizing

themselves. Los Angeles and New York City could not be more different in terms of their geographical size, public transportation (or lack thereof in Los Angeles) and means by which the political system is run (consider that Beverly Hills, Santa Monica, West Hollywood and Pasadena all have their own governments, municipalities and budgets and yet are all a part of Los Angeles County and seamlessly linked in economic, cultural and social norms to our idea of “Los Angeles”). Those who study cultural industries may remark on the distinctly different forms of symbolic capital produced in the two cities (e.g. West Coast rap versus East Coast rap; sportswear fashion in LA versus prêt-à-porter in New York). Yet despite these very stark differences, cultural industries produce consistent organization patterns and exhibit remarkably similar clustering and co-location characteristics in the two metropolises. We believe that these results are indicative of some of the basic properties of cultural industries which include their need for ad hoc, instantaneous labor pools, the ways in which they cross-fertilize skills and careers in multiple sectors and the embedded nature of their economic actions in their social institutions and networks (See Becker 1982; Faulkner and Anderson 1987; Caves 2000 and Currid 2007 for more precise accounts of the social and economic dynamics of cultural industries).

Our results indicate that while industrial policy towards the cultural industries needs to consider each sector uniquely, there may be overarching policies to employ that are independent of place-specific geography. Art tends to cluster the same in New York as in Los Angeles, as does music and film, and in that respect, if developers can sort out how to aid these sectors such initiatives can be applied in many different metropolitan areas, as opposed to catering such policy individually to each city or region.

Arts and culture have always been a significant part of the urban experience but more recently their impact has been more tangible and measured in concrete economic terms. Consequently, the arts should be recipients of and incorporated into economic development policy much the same way that other industries are targeted. This paper has sought to articulate some of the important industrial clustering patterns that cultural sectors exhibit with the hopes that these results will help inform economic development and industrial policy towards the arts. Fundamentally, the arts operate simultaneously as generators of economic vitality in and of themselves and as catalysts of urban development as a whole. As such, art and culture should be incorporated as a critical part of economic development. We hope to have aided in shedding light on some avenues for achieving this goal.

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TABLES AND FIGURES (END NOTES AFTER)

Table 1: Distribution of Firms Type by Sector]

ART	DESIGN	FASHION	MUSIC	PERFORMING	FILM	INDEPENDENT
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				ARTS		ARTISTS
Museums	Architecture	Other Specialized Design	Musical Groups	Theater Companies	Motion Picture and Video Production	Independent Arts, Writers, and Performers
Fine Arts Dealers	Landscape Architecture		Record Publications	Dinner Theaters	Tele-Production and other Post Production Services	
Fine Arts Schools	Interior Design		Music Publishers	Dance Companies	Motion Picture and Video Industries	
Commercial Photography	Industrial Design		Sound Recording Studios	Other Performing Arts Companies		
	Graphic			Dance Companies		

Table 2 : Los Angeles County : Arts Industry Correlations]

	ART	DESIGN	PERFORMING ART	MUSIC	FILM	FASHION
ART	1	0.781*	0.505	0.501	0.645	0.294
DESIGN	0.7801*	1	0.545	0.534	0.687	0.362
PERFORMING ART	0.505	0.545	1	0.863*	0.847	0.302*
MUSIC	0.501	0.534	0.863*	1	0.901*	0.231
FILM	0.645	0.687	0.847	0.901	1	0.298
FASHION	0.294	0.362	0.302	0.231	0.298	1

[* represents the highest value for each comparison. All values were found significant using a two tail significance test.]

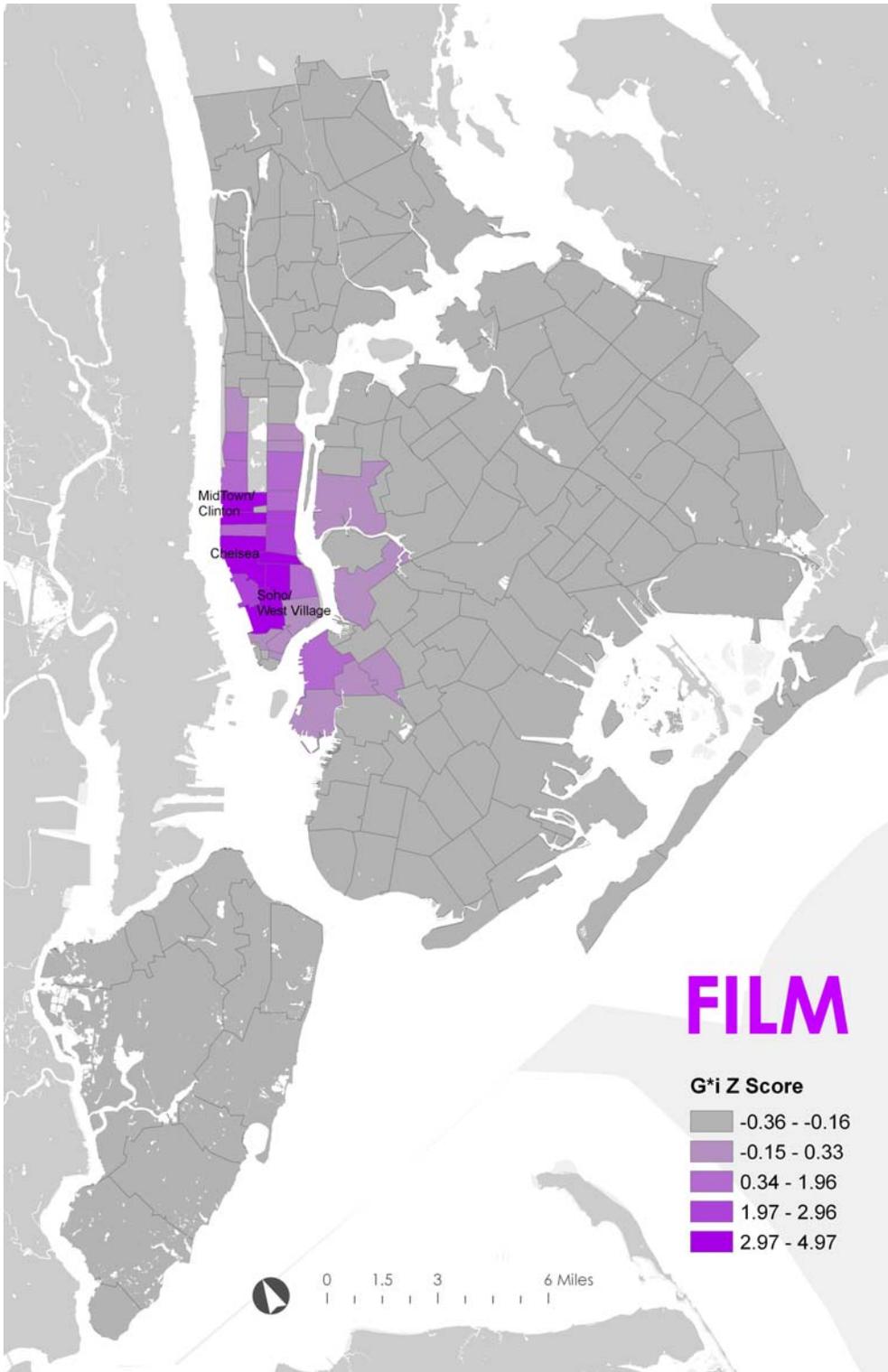
Table 3: New York City: Arts Industry Correlations

	DESIGN	PERFORMING ART	MUSIC	FILM	ART	FASHION
DESIGN	1	0.382	0.579	0.79	0.761	0.653
PERFORMING ART	0.382	1	0.767	0.697	0.394	0.487
MUSIC	0.579	0.767*	1	0.854*	0.587	0.404
FILM	0.79*	0.697	0.854*	1	0.805*	0.566*

ART	0.761	0.394	0.587	0.805	1	0.518
FASHION	0.653	0.487	0.404	0.566	0.518	1

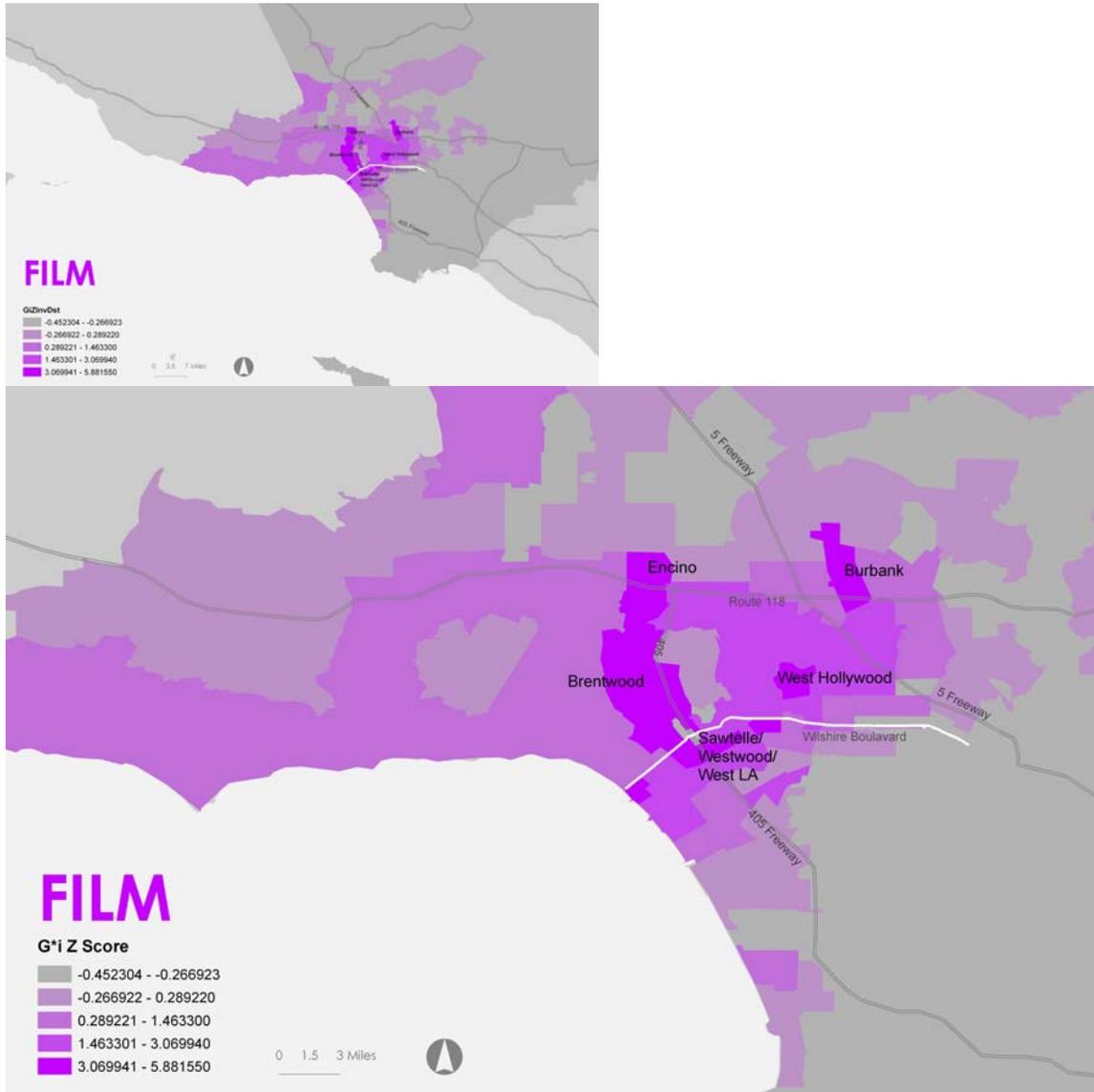
[* represents the highest value for each comparison. All values were found significant using a two tail significance test.]

MAP 1 : New York City Film Industry Maps



[The map above represents the Getis-Ord G*I Z Score values for the film industry in New York City. The zip codes with the top 5 values are indicated by neighborhood name on the map.]

MAP 2: Los Angeles Film Industry Maps



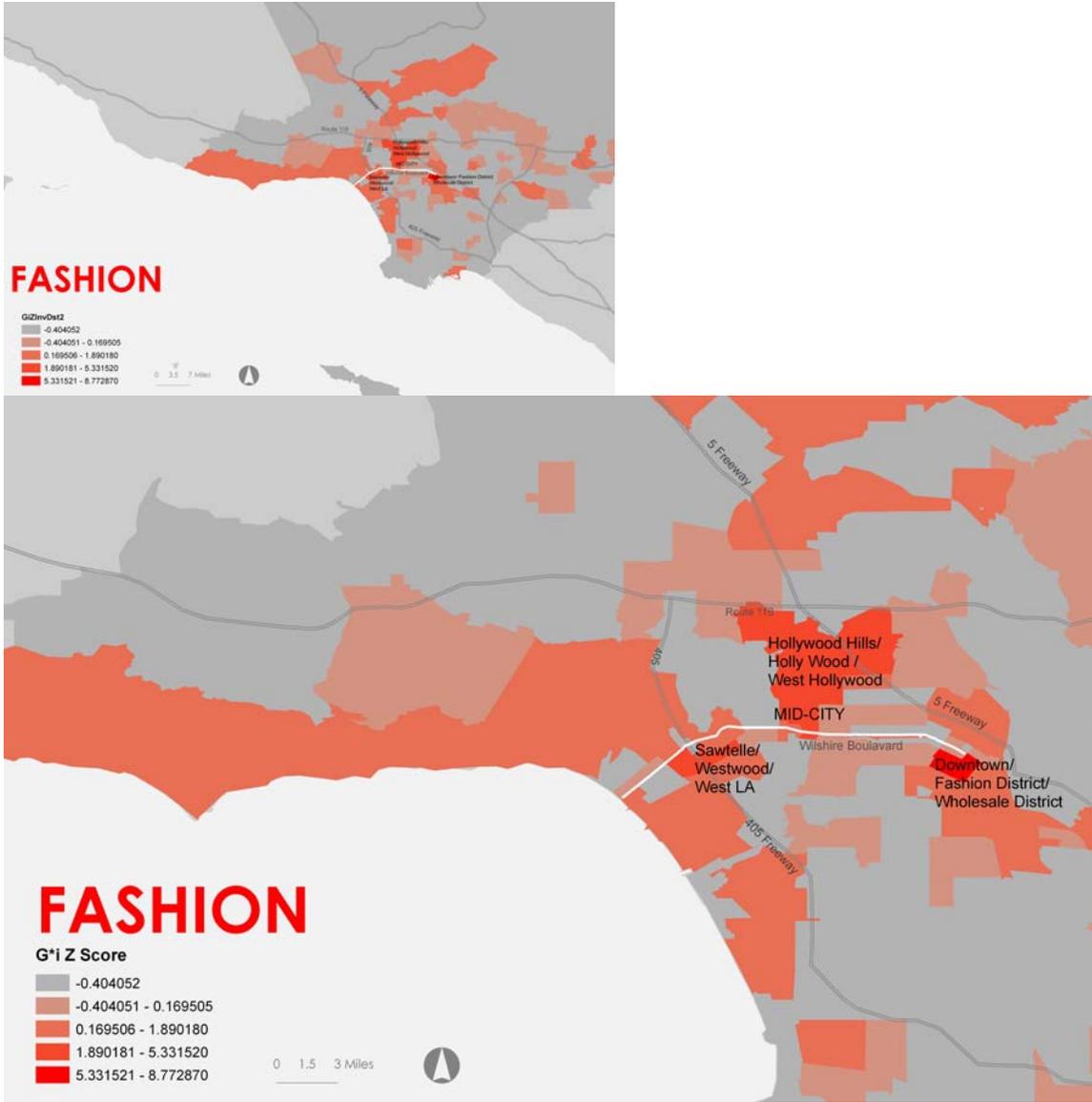
[The map above represents the Getis-Ord G*I Z Score values for the film industry in Los Angeles. The zip codes with the top five values are indicated by neighborhood name on the map.]

MAP 3: New York City Fashion Industry Map



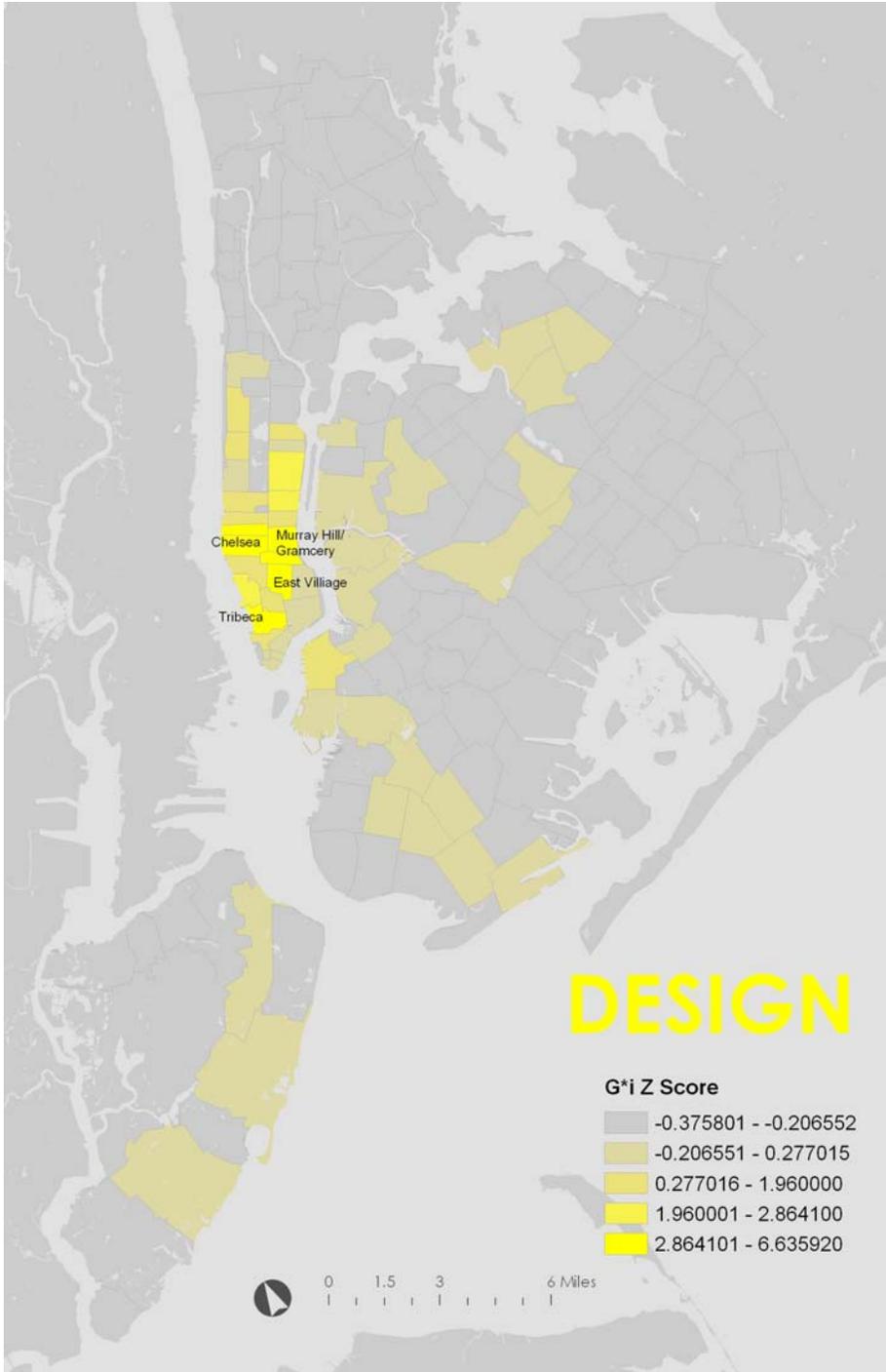
[The map above represents the Getis-Ord G*I Z Score values for the fashion industry in New York City. The zip codes with the top five values are indicated by neighborhood name on the map.]

MAP 4 : Los Angeles Fashion Industry Map



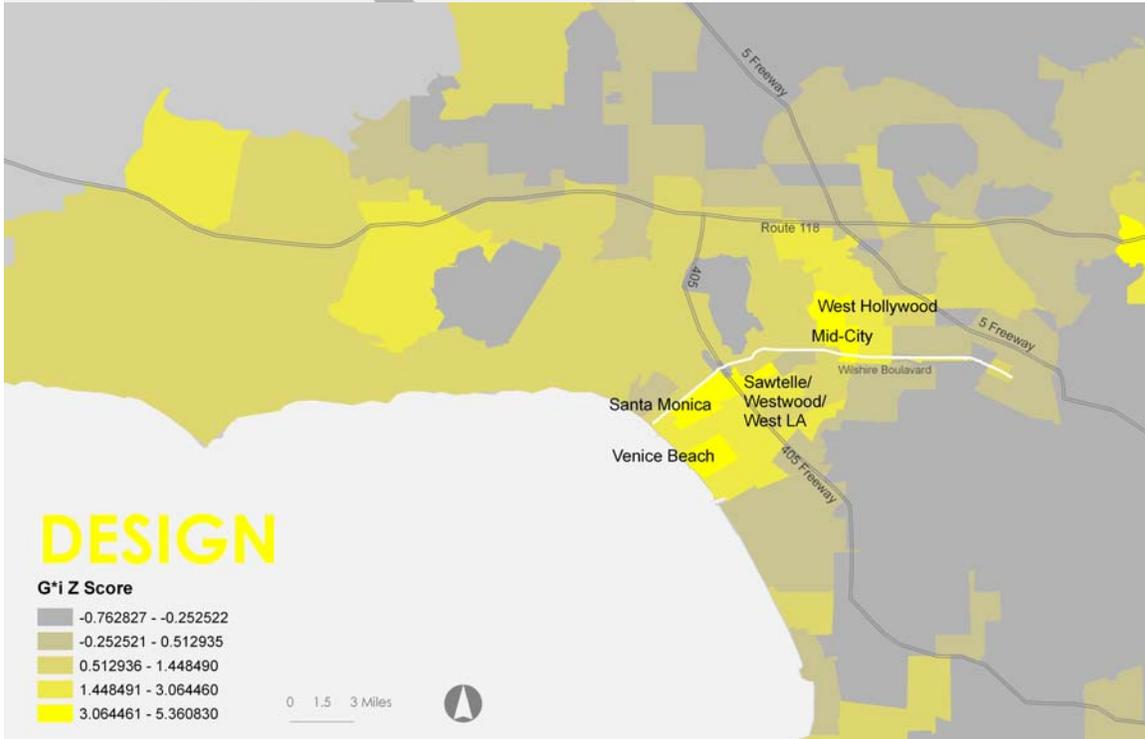
[The map above represents the Getis-Ord G*I Z Score values for the fashion industry in Los Angeles. The zip codes with the top five values are indicated by neighborhood name on the map.]

MAP 5: New York City Design Industry



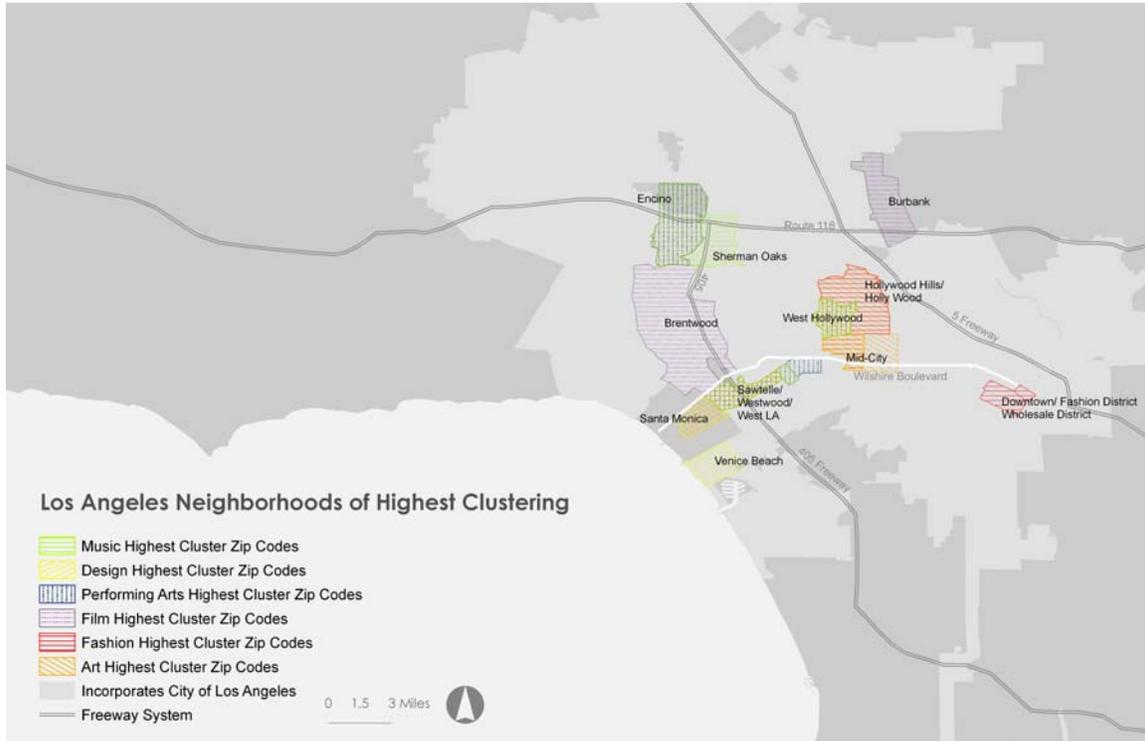
[The map above represents the Getis-Ord G^*i Z Score values for the design industry in New York City. The zip codes with the top five values are indicated by neighborhood name on the map.]

MAP 6: Los Angeles Design Industry Map



[The map above represents the Getis-Ord $G^* i$ Z Score values for the design industry in Los Angeles. The zip codes with the top five values are indicated by neighborhood name on the map.]

MAP 7 : Los Angeles Hot Spot Neighborhoods



[The map shows those areas in each arts industry (music, design, performing arts, film, fashion, art) where the G*I values were the highest. In other words this map shows the hot-spots for each industry. The illustration shows the overlap between some the industries in particular localities.]

APPENDICES (END NOTES AFTER – 2 TOTAL Appendices)

Appendix 1 :

Summary of Art and Culture Industry Categorizations Based on NAICS codes:

- Our study of industry location analyzes advanced service sector industries for Art and Culture in New York City and Los Angeles. This study selects only industries that substantially employ advanced service worker, defined as professional workers with relatively high levels of training, education and job-specific skills. The following criteria are used to select advanced services industries:
- All applicable industries from the above categories were tabulated to create our own advance services industry groupings that differ from the NAICS categorizations because we seek to specifically separate “creative” industries from other advanced service industries, a priority that the NAICS coding system does not necessarily share.
- The six categories we use for this study are titled *Art, Design, Fashion, Music, Performing Arts, Film, And Independent Artist*. For definitions of each category please see below.
- Data is from 2005 and is based on 6-digit codes from the 2002 NAICS coding system.

ART

712110 Museums
611610 Fine Art Schools
453920 Art Dealers
541922 Commercial Photography

DESIGN

541310 Architectural Services
541320 Landscape Architectural Services
541410 Interior Design Services
541420 Industrial Design Services
541430 Graphic Design Services

FASHION

541490 Other Specialized Design Services

Other Specialized Design Services included the following:

Clothing design services
Costume design services (except independent theatrical costume designers)
Fashion design services
Fashion designer services
Float design services

Fur design services
Jewelry design services
Shoe design services
Textile design services

MUSIC

711130 Musical Groups and Artists
512210 Record Production
512220 Integrated Record Production/Distribution
512230 Music Publishers
512240 Sound Recording Studios

PERFORMING ARTS

711110 Theater Companies and Dinner Theaters
711120 Dance Companies
711190 Other Performing Arts Companies

FILM

512110 Motion Picture and Video Production
512191 Tele-Production and Other Postproduction Services
512199 Other Motion Picture and Video Industries

INDEPENDENT ARTIST

711510 Independent Artists, Writers, and Performers

Appendix 2 :

Working Paper

Summary of G*i Z scores for Hot Spot Neighborhoods in New York & Los Angeles

	New York City Top Neighborhood Hot-Spot Locations	
Zip Code	Approximate Neighborhood Description	G*i Z Score
DESIGN		
10001	Chelsea	6.635
10013	Tribeca	4.77
10010	Gramercy	4.38
10003	East Village	4.24
10016	Gramercy/Murray Hill	4.02
PERFORMING ARTS		
10036	Clinton	10.66
10019	Midtown	5.2
10003	10003 Greenwich/East Village	2.55*
10018	Clinton	2.47*
10013	SoHo/Tribeca	1.81*
MUSIC		
10019	Midtown	8.5
10036	Clinton/Midtown	4.5
10023	Upper West Side	3.4
10010	Gramercy	2.9
10017	Midtown/Murray Hill	2.6*
FILM		
10001	Chelsea	4.97
10011	Chelsea	4.67
10019	Midtown	4.62
10036	Clinton/Midtown	4.17
10012	SoHo/West Village	3.57
FASHION		
10018	Clinton	10.68
10001	Chelsea	5.09
10036	Clinton/Midtown	2.96
10011	Chelsea	2.48*
10003	East Village	1.89*

ART		
10001	Chelsea	6.21
10011	Chelsea	5.76
10021	Upper East Side	5.41
10012	Soho/West Village	5.01
10013	SoHo/Tribeca	3.94

[* next to the Z score represents a 95% confidence that the values were not a result of random chance. If there is not a * next to a number it represents a 99% confidence that the values were not a result of random chance.]

Los Angeles County Top Neighborhood Hot-Spot Locations		
Zip Code	Approximate Neighborhood Description	G*i Z Score
DESIGN		
90404	Santa Monica	5.3
90291	Venice	4.76
90069	West Hollywood	4.5
90025	Sawtelle/Westwood/West LA	4
90048	MID-CITY	3.8
PERFORMING ARTS		
90212	Beverly Hills	7.22
91436	Encino	6.74
90025	Sawtelle/Westwood/West LA	4.81
90067	Century City	3.85
90069	West Hollywood	3.85
MUSIC		
91403	Encino	8.3
91436	Sherman Oaks	5.2
90025	Sawtelle/Westwood/West LA	4.9
90067	Century City	4.6
90069	West Hollywood	4
FILM		
91436	Encino	5.8
90025	Sawtelle/Westwood/West LA	5.1

91505	Burbank	5
90069	West Hollywood	3.5
90049	Brentwood (small part of Bel air and Westwood)	3.5
FASHION		
90014	Downtown /Fashion District / Wholesale District -Skid Row)	8.7
90015	Fashion District / South Par (very small part of Westlake)	8.7
90046	Hollywood Hills/ Holly Wood /West Hollywood	5.3
90025	Sawtelle/Westwood/West LA	3.3
90048	MID-CITY	2.46
ART		
90404	Santa Monica	7.02
90036	Mid- CITY WEST / (Part of Mid Wilshire)	5.4
90069	West Hollywood	5.4
90048	MID-CITY	4.3
90046	Hollywood Hills/ Holly Wood /West Hollywood	3.6

ⁱ While this article will not go into detail on the topics of gentrification and tourism, please see Fainstein and Judd 1999 and Harrill 2004 for discussions on tourism development. Please see Zukin 1989 and Lloyd 2006 for discussions on the impact of arts on development and ensuing gentrification.

ⁱⁱ What Zukin and Lloyd also note is that such transformation paradoxically priced-out those very artists from the neighborhoods they helped create.

ⁱⁱⁱ See Currid and Connelly 2008 for a complete analysis of this finding

^{iv} While a regional approach similar to the previous study was contemplated and even performed for both Los Angeles and New York City as mentioned previously one of the key components of the study was to understand the mono-nodal clusters themselves. It was therefore important to use a geographic definition for these study areas that represents the more localized nature in which the arts industries operate in each city. Given that Los Angeles and New York have very different historical development patterns and therefore represent examples of very different urban forms this identification was easier to perform in New York City.

^v While including parts of New Jersey was contemplated it was determined that the politically defined geography of New York City was more appropriate. New Jersey has different state policies, transportation connections, and economic directives that might make a localized analysis harder to interpret. It would also be hard to find a systematic way to define the geographic extent in which communities in New Jersey should be identified.

^{vi} It is important to note that retail sectors of the industries were not included, as this sector would have identified the market place for arts and culture rather than where the industry's production activities occur. Once the codes were identified they were grouped into distinct categories that represented identifiable sub-sectors of the arts and culture industry.

^{vii} It is important to note that Independent Artist category included what BLS refers to as “Independent Artist, Writers, and Performers”. Given that this category includes independent artists across all the different arts and culture industry sub-categories, it was difficult to attribute it to any one industrial subtype. The geographical patterns this category exhibited are very similar to those found when all the arts and culture industries sectors are combined. This shows that the category is more illustrative of the overall patterns in each city than any specific sub-type. Breaking the arts and culture industries down into these sub categories allows for a more detailed spatial analysis of how the different industry sub-types interact with each other to affect the overall art and culture industry clustering patterns in each city.

^{viii} Spatial autocorrelation tells us whether there are spatial associations among geographic entities and it helps to explain how random these connections may be. According to Harvey Miller spatial autocorrelation is essentially based on Tobler’s first law of geography “that everything is related to everything else, but near things are more related than distant things” (Miller, 2004) .

^{ix} The calculation also typically includes a measure of statistical significant, or a Z score, which allows one to determine whether a null hypothesis can be rejected or confirmed. In this case the null-hypothesis states that "there is no spatial clustering" so a higher measure Z score indicates a greater ability to reject this null-hypothesis.

^x It should be noted that G^*i is also good at identifying those localities that have significantly lower values than might occur by random chance or low-spots. Low-spots tell us it is significant that a particular locality is missing a specific characteristic.

^{xi} In order to interpret whether the Z score is statistically significant is should be compared to the range of values for a particular confidence level. For example, at a significance level of 0.05, a z score would have to be less than -1.96 or greater than 1.96 to be statistically significant.

^{xii} Essentially it tells us there is a spatial connection associated with the high values appearing at that locality. It is generally thought that when global spatial statistics tests like the Moran’s I illustrate patterns of clustering, local statistics such as the Getis-Ord G^*i , can than be employed to help decipher whether the same study areas are homogeneous or contain particular locations or “hot-spots”. Local Statistics like the Getis-Ord G^*i also help to test whether the global statistic employed contained significant outliers that could skew the initial results. (Rogerson, 2001). Using a combination of global and local spatial statistics allows for more confidence in identifying specific clustering patterns.

^{xiii} In order to test this spatial correlation a bi-variant correlation analysis was applied using the Pearson’s correlation method. The method measures the degrees two which two variables tested against each other are related and reflects the degree of a linear relationship between two variables. The values that are returned from this type of analysis range from $+1$ to -1 . A value of -1 represents a negative linear correlation, a value of $+1$ represents a positive linear correlation, and a value of 0 represents no relationship. So the closer a number is to 0 the more likely there is no correlation between the two variables being observed. In this research we used the Pearson correlation with a two tailed significance test. The results of the test illustrated the co-location of several art industries it also identified that fashion appeared to have a weaker link to other arts industries.

^{xiv} Interestingly, such a relationship seems to challenge the conventional wisdom that artists reside in poor neighborhoods. This discrepancy can be explained by the difference between artists and art industries. The former can be freelance, unemployed, “starving artists” so to speak, while arts industries are the actual firms and establishments involved in cultural production. The former is captured by Census data, the latter by Bureau of Labor Statistics and they measure very different things: the individual versus the firm, which of course complicates measuring cultural activity. Please see Markusen and King 2003 for a good discussion on problems with data collection on the arts.

^{xv} It should also be noted that the San Fernando Valley is the pornography industry’s headquarters which conflates our results somewhat. Bureau of Labor Statistics data does not make distinctions as to what type of film is being produced and thus the Valley’s film concentration is indicative of both the natural extension of Hollywood and also highlights the porn industry’s concentration.

^{xvi} It’s worth noting that film’s correlation with most industries may also be a result of its industrial concentration in many different zips, thus skewing the results somewhat.