European Journal of Geography

Research Article

Towards a methodology for the assessment of culture-derived spatial economic development: The case of visual artists in the United States

Alkistis **DALKAVOUKI**[1][*]

[1] *National Technical University of Athens, Greece*

Keywords

Artist,
Artistic dividend,
Exploratory spatial data analysis,
Cultural geography,
Creative city,
Creative cluster,
United States

Abstract

The discourse of economic development through culture and its applications have increasingly received more attention in geographic academia. However, there has been little insight into how the breakthroughs and paradigms of more successful experiments could be sensitively and carefully used for the benefit of less experienced areas. This paper presents an attempt to rectify this, by proposing the use of tangible data from the United States, a country with extensive experience in cultural development and governance. It presents a piece of that research, in the form of a trial methodology for assessing significant clusters of cultural development and identifying their causes. After briefly overviewing the development of the theory of cultural development and defining some basic terms –artists and their definition for quantitative research, (creative) clusters, and creative cities–, a methodology will be proposed and showcased. It will depend on exploratory spatial analysis and the concept of the "artistic dividend", a method of more directly measuring artists' contributions to their local economies by counting their numbers and aggregating their income. Data will be taken from the American Community Survey for its thematic and spatial detail, with visual artists being used as an example category. The decennial evolution of clusters will also be inspected and displayed. Finally, the methodology's further applications, possible evolutions (use of further literature review and regression methods for discovering factors), and distilled focus (improvements by qualitative methods) will be assessed, for its implementation in the final thesis.

Highlights:

- An empirical definition of the artist for quantitative research

- Spatially-applied artistic dividend examined via exploratory spatial data analysis

- Use of American Community Survey data

- Discovery of hierarchy in centers of cultural development in the US

- Discovery of good spatial unit for exploratory data analysis (PUMA, region-level)

1. INTRODUCTION

Although the discourse of economic development through culture and its applications has been increasingly receiving more attention in geographic academia, there has been little insight into how the breakthroughs and paradigms of more successful experiments could be sensitively and carefully used for the benefit of areas with less expertise. This paper presents an attempt to rectify this, by proposing the exploratory use of tangible data from the United States, a country with significant experience in cultural development and governance. It presents a piece of that research, in the form of a trial methodology for assessing significant clusters of cultural development.

The paper will start by briefly overviewing the development of the theory of cultural development and defining some basic terms –artists and their definition for quantitative research, (creative) clusters, and creative cities– in the "Literature Review". In the section entitled "Methodology and Data", a methodology is proposed and showcased with an example. This employs known exploratory spatial data analysis tools and draws from the concept of the "artistic dividend", a method of more directly measuring artists' contributions to their local economies by counting their numbers. Data is taken from the American Community Survey (ACS) for its thematic and spatial detail, and visual artists (and designers) are used as an example category. In the "Results" section, the methodology is applied to the data and the outcome is visualized, discussed, and summarized. Finally, in "Discussion and Further Work", several possible improvements –both theoretical and practical–are proposed for further research.

2. LITERATURE REVIEW

2.1. The creative city and cluster

The discourse surrounding the arts and development may be relatively recent, but it stems from much older contemplations on urban decay. Jane Jacobs (2016) is often considered to be one of the first theorists to consider this problem. Her solution hinged on urban renewal through creativity and multiculturalism, an emphasis on a city's character, and the union of economy, culture, and innovation for the attraction of new inhabitants. Later scholars contributed to this stream of thought in new ways: Hall (2000) considered the city to be a primary producer of wealth and a center of creativity, while Brooks (2018) and Kotkin (2000) described a "new economy" less reliant on physical labor and place but more on knowledge and genius, depending on the development of online/media business and the service sector and utilizing highly skilled staff ("scientists, engineers, and other professionals").

However, it was Richard Florida's (2004) work that truly cemented the concept into both academic and greater use. In his book, Florida observed that the 1970s and 1980s saw a transformation of advanced capitalist societies, with the service sector in particular booming. He argued that this could pave the way for a new way of approaching growth, in which knowledge, ideas, and innovation would be more powerful than capital, resources, and physical labor, while also employing Schumpeter's (1942) "creative destruction" concept. At the same time, the bohemian lifestyle was becoming more approachable to all. All the above could create both a vibrant economy as well as a more just and meritocratic society. His final proposition was that the development of the "creative city" would come with the attraction of specific workers whom he named the "creative class". They were defined as young, adventurous, and mobile, highly qualified and paid knowledge workers specializing in science and medicine, engineering, education, and the arts and tasked with the invention of new concepts, technologies, and creative content.

The theory has enjoyed a polarizing reputation. On the one hand, it was embraced by the artists themselves –as it gave them significant visibility and rehabilitated their image after the 1990s–and was widely applied to multiple cities worldwide by local politicians and scientists

for developmental reasons, especially in the USA. At the same time, the concept has been considered a failure by other researchers, for lacking credible analysis (Markusen, 2006), deepening existing social and economic inequality through superficial executive decisions (Peck, 2005; 2007), and promoting destructive neoliberal ideas (Hatuka et al, 2018). Despite the backlash, the concept's success, impact on similar ideas –e.g., the smart city (Graziano, 2014)–, and spread are undeniable, so studying the impact it has had on planning and policy is imperative.

With Florida's work depending on the idea of aggregation economies –already identified by Jacobs (2016)–, another popular way of conceptualizing artistic concentration that emerged was that of the creative cluster. Michael Porter (1990) considered that industrial clusters, which he defined as "geographical concentrations of interconnected companies and institutions in a particular field", played a pivotal role in economic development, and popularized the concept. That said, subsequent discussions –Florida's being one of them– have included the human factor, and so clusters have been defined as occupational concentrations as well (Currid & Stolarick, 2010). Since then, and despite confusion surrounding the term's exact definition (Chen, 2012), the pivot from concentrations of firms to individuals has been fruitful.

2.2. Defining the artist

The need arises, therefore, for a definition of the artist that is compatible with quantitative research. Although philosophical examinations had been accepted for decades (Rilke, 2013), art as a phenomenon has been sociologically examined only since the 1980s (Becker, 2008). Even then, a variety of factors complicated the solidification of a single definition: artists tended to create open groups, without detailed registries or strict certifications; the practice of art itself "correspond[ed] ill to our normal conception of work as gainful employment", as it could often be part-time and non-exclusive; self-description was a frequently-used indicator (Karttunen, 1998); and surveys were plagued by small samples with nonresponse biases (Filer, 1986), a multiplicity of sources and insufficient filtering (Wassall & Alper, 1985; Karttunen, 1998; Throsby, 2001). As a result, each researcher or group used their own based on their methodology (Bille, 2012).

Still, the artist has to be conceptualized and "operationalized" on an empirical level (Karttunen, 1998); for this paper, a census definition was used for that purpose. Markusen (2006)'s research proved particularly useful in that regard, as it was compatible with US census and Bureau of Labor Statistics codes. Artists were thusly defined as "those currently employed who report in government census and labor surveys that artwork is their primary occupation by numbers of hours worked a week and including self-employment" (Markusen, 2013). The census definition has some drawbacks – the exclusion of those whose primary occupation was not art-related (Wassall & Alper, 1992) or full-time (Filer, 1986)– as well as the rejection of some types of creative labor -advertising, antiques, crafts, fashion, and tourism- that could result in underestimations of the labor force (Menger, 1999)–, but its advantages –its compatibility with large, official databases– are undeniable.

From the above, it is apparent that there is a considerable, robust body of literature discussing the possibility and viability of development through culture. However, inspecting practical schemes has proven significantly harder, with significantly fewer alternatives. The next part will detail the formulation of a practical way of inspecting artistic development based on pre-existing schemes and their geographic application.

3. METHODOLOGY AND DATA

3.1. The Artistic Dividend as Starting Template

For our trial assessment of culture-derived development, we employ a pre-existing tool in the field of geography: an operationalization of the artistic dividend. This method of making assumptions about specific groups was proposed by Ann Markusen and Greg Schrock (2006) to discover the exact economic contributions of the arts to local and regional economies. They used "artistic concentrations across American cities as proxies for the size and presence of an artistic dividend", in place of nonexistent data about the value of their labor, innovation, and exports from regional databases and due to the artists' own inability to make such estimations. They assumed that "artistic overrepresentation in an economy" would serve as "an indicator of the presence and rough size of an artistic dividend". Moreover, their choice of an occupation-oriented approach –instead of relying on patronage and sales figures data from previous research–, served to deeply inspect the contributions of laborers, their capital generation, and multidimensional community support, while also being part of a broader shift towards an emphasis on labor in regional development (Thompson & Thompson, 1985; Feser, 2003).

The above work by Markusen and Schrock (2006) provided us with a good guideline for our methodology; however, some alterations had to be made to fit the new needs of our specific research. The researchers opted to use the 5 Per Cent Public Use Micro-data sample for its definition of the artist based on working hours and the ability to capture "many more artists" than "studies based on employers' reporting of employment by occupation", even with caveats. That said, they listed and categorized several individual occupations – "performing artists (actors, directors, dancers, choreographers), musicians, writers and visual artists (painters, photographers, filmmakers, ceramicists, textile artists, sculptors, printmakers)"–, to examine the emergence of different patterns of concentration. For this paper, we instead choose to focus on one occupation –visual artists–, for three reasons: to capture the behavior of particular groups of workers in detail; to avoid the possible changes in the system of occupational definitions that Markusen and Schrock faced; and to follow newer literature encouraging the use of discreet occupations in analysis (Markusen, 2006). Furthermore, Markusen and Schrock studied both the absolute number of artists as well as their location quotient (Miller, Gibson & Wright, 1991), which will be abbreviated to LQ for the rest of the text. We focused only on the latter, as we aimed for specific insights and wished to uncover non-traditional clusters and smaller pockets of activity as well. Finally, while their focus was on metropolitan areas, the constant boundary changes (Gardner, 2021) the team had to accommodate for and our need for greater detail in our research led us to pick a smaller unit of spatial analysis. Even with these changes, the groundwork laid by Markusen and Schrock (2006) was especially useful for this paper, as, in essence, both projects ask very similar research questions about artists –their concentrations across space and time, the patterns formed by their activities.

Finally, the discipline used to examine the spatially-applied artistic dividend is exploratory spatial data analysis, referred to for the rest of this paper as ESDA. The nature of spatial data, with their relation between distance and similarity (Tobler, 1970) means that most observations are not independent, thus negating some conventional analysis methods (Anselin & Griffith, 1988). As a result, ESDA, defined broadly as "the statistical study of phenomena that manifest themselves in space", is used to describe and visualize spatial distributions, outliers, and clusters, by relying on the idea of spatial autocorrelation (Anselin, 1996). Two very important metrics are the (Global) Moran's I (Cliff & Ord, 1981), an official indicator of total spatial autocorrelation in an area and used alongside a scatterplot (Anselin, 1994), and Local Indicators of Spatial Association (LISA), a way to inspect the contributions of individual areas into the overall value, as well as discover hot spots and other points of interest (Anselin, 1995; Le Gallo & Ertur, 2003). Those last two will also be used below and applied to our own data set.

3.2. Case Study Choice and Data Set Creation

After choosing a basic methodological tool, we decided on a case study to inspect; for several reasons, the country chosen was the United States. First of all, the US is both one of the most important producers of culture worldwide (De Propris & Hypponen, 2008) and one of the intellectual epicenters of creativity-led economic development discourse, having provided multiple theoretical proposals and practical applications of ideas regarding the creative city and economic prosperity through culture alike (see above), however varied that success might be (Cuesta, Gillespie & Lillis, 2005; Peck, 2007; Zimmerman, 2008). Secondly, the specific group of workers measured and analyzed has also been extensively studied by other researchers (Markusen & Shrock, 2006; Markusen, 2013), so basic facts about their behaviors, incomes, and distributions are not unknown. The above is a reassurance that the research will progress on solid foundations and be easily cross-referenced.

One last but vital reason for choosing the United States as a case study was for its abundance of easily-available yet detailed data, and so some elaboration on its traits is needed. Most of them are provided from the American Community Survey (ACS), which has replaced the long-form, decennial census as the primary source of detailed geographic information in the country since 2010, easily available through the Integrated Public Use Microdata Series and its respective website. As a census tool, the ACS processes significant advantages: its high-frequency nature –it is a continuous survey on a rolling basis (Kish, 1990), with estimates being released yearly– allows for the constant measurement of the population; its occupational descriptions are quite detailed and internally compatible throughout the years (USCB, 2016; IPUMS, 2022b); and its use of small areas as geographical units allows for great detail when studying them. Even with certain issues –sampling errors, increased uncertainty around smaller areas compared to the census, the complex (and possibly biased) application of weights, and the socio-economic variations in data quality–, the ACS is at present "the best available resource for geographers seeking to study small area social and demographic variation" (Spielman, Folch & Nagle, 2014).

The choice of data from this vast depository was deliberate and careful. As a spatial unit, the PUMA (Public Use Microdata Area) is a contiguous geographic area "defined specifically for the dissemination of PUMS data", is redrawn after every decennial census, and contains a population of between 100,000 and 200,000 people at the time of delineation (USCB, 2021a). As a result, it was the preferred, most accurate choice. Moreover, the unit has been used in a variety of spatial analyses of growth and concentration (Banzhaf & Farooque, 2013; Sturtevant, 2014; McKinnish, 2017). To analyze how the patterns changed with time, three moments –2012, 2016, and 2019– were selected, to both match the given PUMA configuration and to avoid the complications caused by the Covid-19 pandemic in 2020 (Larue, 2020). As a result of the above, we decided on using the one-year samples of the ACS, as they prioritized currency and focused on smaller geographies (USCB, 2021b). An exception was made for the states of Alaska and Hawaii, which were excluded, to avoid isolated "islands" that would create some methodological problems (Le Gallo & Ertur, 2003).

An overview of the data set creation process is also included. Data were selected from the IPUMS website using only a small number of ACS occupation codes (2600, 2630), to avoid complications with changing categorizations. Using the corresponding state (two-digit) and PUMA (five-digit) codes, a unique number was generated for each polygon; the number of artists on that tract was calculated using the PERWT (person weight) variable. The result was joined to a map of the country provided by the IPUMS website. Additional data was retrieved from the Census website, to gauge the total workforce of each PUMA and thus computed each area's LQ. Finally, all subsequent analysis –with some additional data created only for it (see below)– was completed on the GeoDa software, a free and open-source tool for spatial analysis.

The weight matrix used to connect the data also required some thought. There is little theoretical backing to justify any matric choice, although certain researchers advise picking the one that produces the largest spatial autocorrelation value (Voss & Chi, 2006; Chi & Zhu,

2008). Another method is the experimental use of several matrices, with the final choice depending on its impact on the ESDA results –the smaller the differences, the better the choice (Gallo & Ertur, 2003; Anselin, Sridharan & Gholston, 2007). The final pick was a first order queen contiguity weight matrix, which yielded the most satisfactory results after multiple tries.

The above section showed the formulation of a methodology based on the work of previous geographers and its adaptation to different needs, the selection of appropriate data, and the creation of a particular data set. The next part showcases and analyses their results.

4. RESULTS

4.1. An overall impression: The United States

To move forward with analyzing the spatial patterns of artistic activity in the United States, a depiction is firstly needed. The LQs of visual artists for each year of study are mapped and depicted below (Figures 1, 2, and 3).

The above shows that development –as measured by concentrations of artists– is unsteady and selective. There is a gradual fall in the number of areas that do not specialize in the arts –with an LQ value of less than 0.56– throughout the decade, while the inverse is true of the areas that match the nationwide rate of participation –an LQ value of around 1.2. A bubble is observed for the areas with a higher-than-average LQ, between 1.2 and 2: there is a rise in the number of PUMAs with a significant presence of artists in 2016, but the next year sees the levels fall to before their 2012 values. Areas with a significant LQ value –above 2– experience an inverse bubble, with their 2019 values being higher than the respective ones in 2012. This flux even appears in areas with extremely high values. In 2012, only four places have a value higher than 7.7: a few Manhattan neighborhoods. For the next two years, their LQs decrease; instead, only one place has a value higher than 7.7 systematically: the center of Los Angeles. From the above, we can see that development is unsteady: more small-to-medium-sized centers emerge, while medium-to-larger-sized ones face uncertainty.

What is of particular interest is the geographic distribution of the areas where the LQ is above 2.0, a good practical metric to indicate a significant specialization (Carroll, Reid & Smith, 2008). Almost all states –except for Dakota, Wyoming, Louisiana, Mississippi, Arkansas, and Nebraska– have a center of activity, which might not necessarily be the state capital. Although the largest centers of artistic activity are Los Angeles and New York City, these also witness the most fickle development: areas such as Sacramento and New Jersey that are peripheral to very large centers, and thus generally unstable. Some smaller, stable urban centers of artistic activity include Dallas, Chicago, Atlanta, Nashville, Orlando, Boston, Miami, and the District of Columbia. More interesting is the rise of peripheral centers, both in a central urban hub as well as its surrounding area. Such examples include Seattle, Austin and Huston, Minneapolis and St. Paul, Albuquerque and Santa Fe, and Salt Lake City, which remain relatively stable, even if the populations of particular PUMAs shift in time. Finally, there are some areas with uneven concentrations, such as Phoenix and Tuscon, St. Louis City, the coast of Maine, Oklahoma City, Indianapolis, the Texas-Mexico border, and Las Vegas. It is once again apparent that development is scattershot, yet new centers emerge continuously and stability can be observed; however, the attraction of very large concentrations tends to obscure our view.

Another useful statistic to examine would be the Moran's I, a basic indicator of global spatial autocorrelation. Using the pre-existing capabilities of the GeoDa software and for a pseudo-p-value of 0.001, we produce the following results (Table 1).

Figure 1. Map of the Location Quotients of artists in the United States (2012).
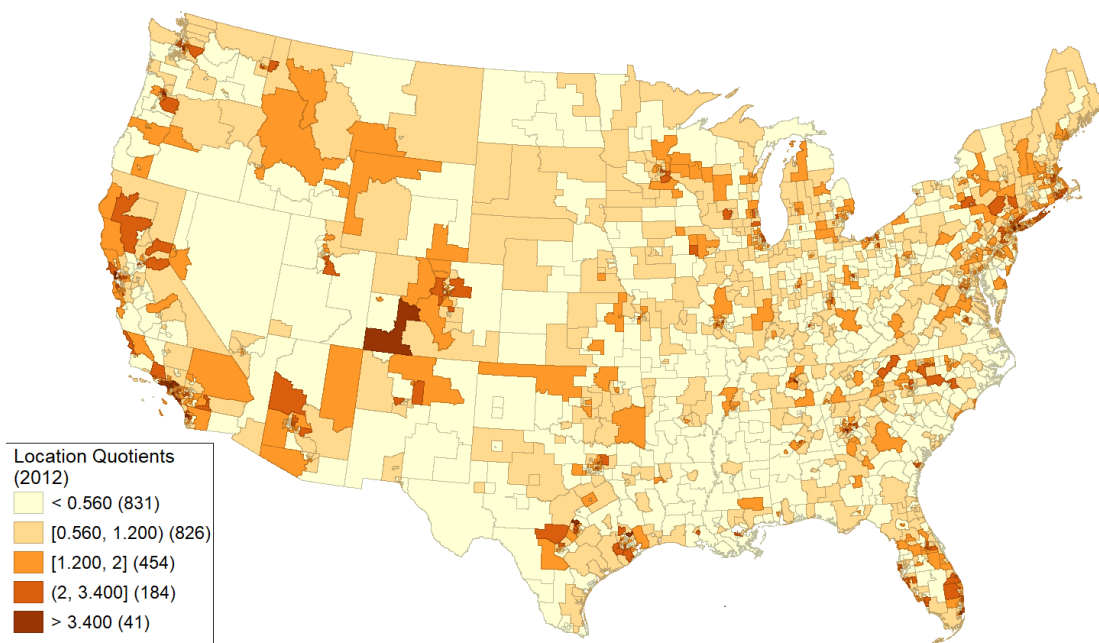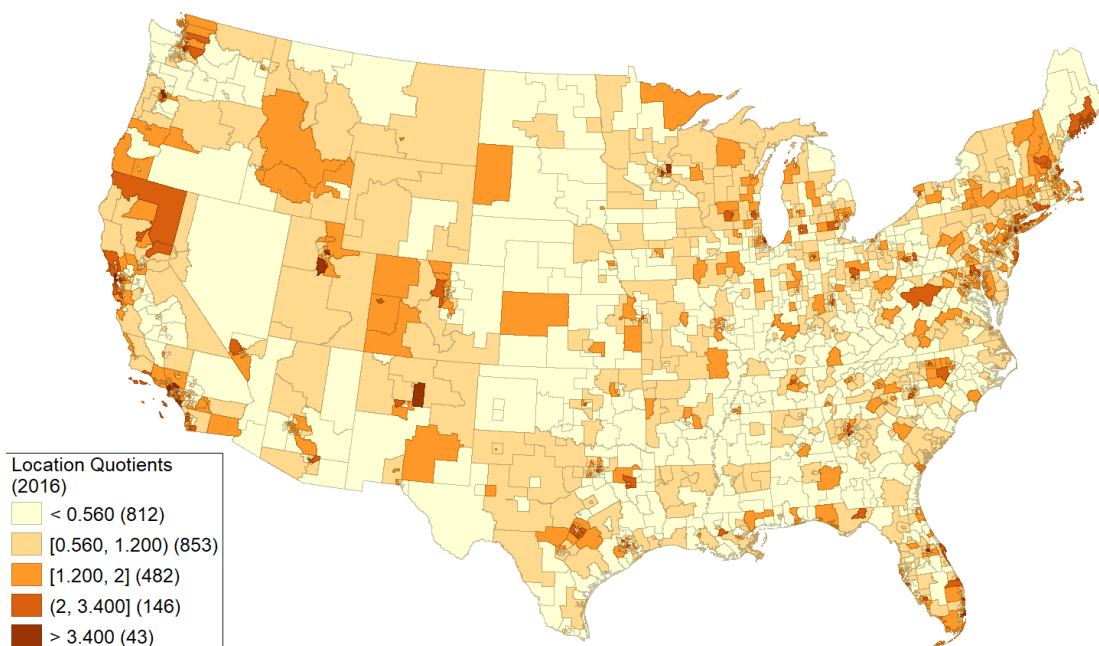

Figure 2. Map of the Location Quotients of artists in the United States (2016).

Since all values are non-zero, above the theoretically expected value of -0.004, and with a positive z-score, we can confidently reject the null hypothesis of Complete Spatial Randomness for a p-value of 0.001 (Messner et al, 1999). Moreover, the varianc in the value of the statistic throughout the years shows a changing power relation (Wilson & Greenlee, 2016) but also general stability, confirming the pattern and indicating a larger trend (López-Bazo et al, 1999; Le Gallo & Ertur, 2003; Anselin, Sridharan & Gholston, 2007). However, there could be a potential problem in all future analyses: the very high z-score values. Although

they do appear in the literature (Wang et al, 2015), they could be an indicator of a scale problem; the result would be that the autocorrelation shown in the value would partly result from the area's own structure (Le Gallo & Ertur, 2003). As a result, despite receiving satisfactory results for this metric, we begin to formulate future research steps.

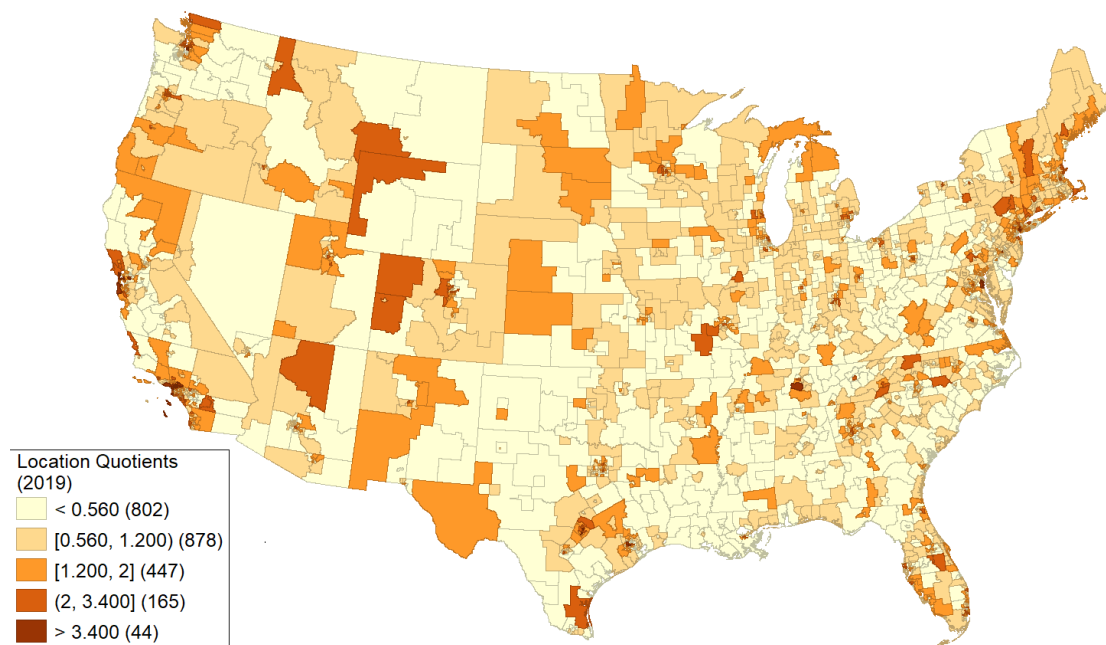**Figure 3.** Map of the Location Quotients of artists in the United States (2019).

Location Quotients (2019)
- < 0.560 (802)
- [0.560, 1.200) (878)
- [1.200, 2] (447)
- (2, 3.400] (165)
- > 3.400 (44)

Table 1. Moran's I results for the United States

Year	Moran's I	SD	z-score
2012	0.389	0.0134	29.1484
2016	0.386	0.0135	28.6458
2019	0.414	0.0131	31.7479

Source: National Technical University of Athens

We also produced three cluster maps using GeoDa's LISA (Anselin, 1995) capabilities. By limiting our view to the most significant clusters (with a p-value of 0.005) and in conjunction with the Moran scatterplots provided by GeoDa, we get the following (Figures 4, 5, and 6).

Analyzing the scatterplots (Chi & Zhu, 2008), we spot the unsteady increase of more high-high clusters, with a peak in 2016; the dominance of low-low clusters, which increase slowly; and the fall of both low-high and high-low points. The gradual rise of significant high-high clusters is paired with the permanent appearance of well-known centers –New York City, Los Angeles, San Francisco– and the intermittent appearance of aforementioned, minor epicenters –Austin and Huston, the Twin Cities, Seattle, Portland, Chicago, Atlanta, Salt Lake City, etc. The significant low-low clusters, on the other hand, decrease unsteadily; moreover, despite select centers in mid-western, eastern, and western territories –e.g. the Oklahoma-Texas and California borders-, their largest concentration appeared most prominently in the South. That said, it appeared to have disintegrated from 2016 onwards, with 2019 showing

the possibility of the creation of a new formation. The above map, despite offering confirmation of the emergence of new centers of activity, appears to be far too general, contains too much information, and prioritizes extreme values (Anselin, 2020); focusing on a smaller area could solve these issues.

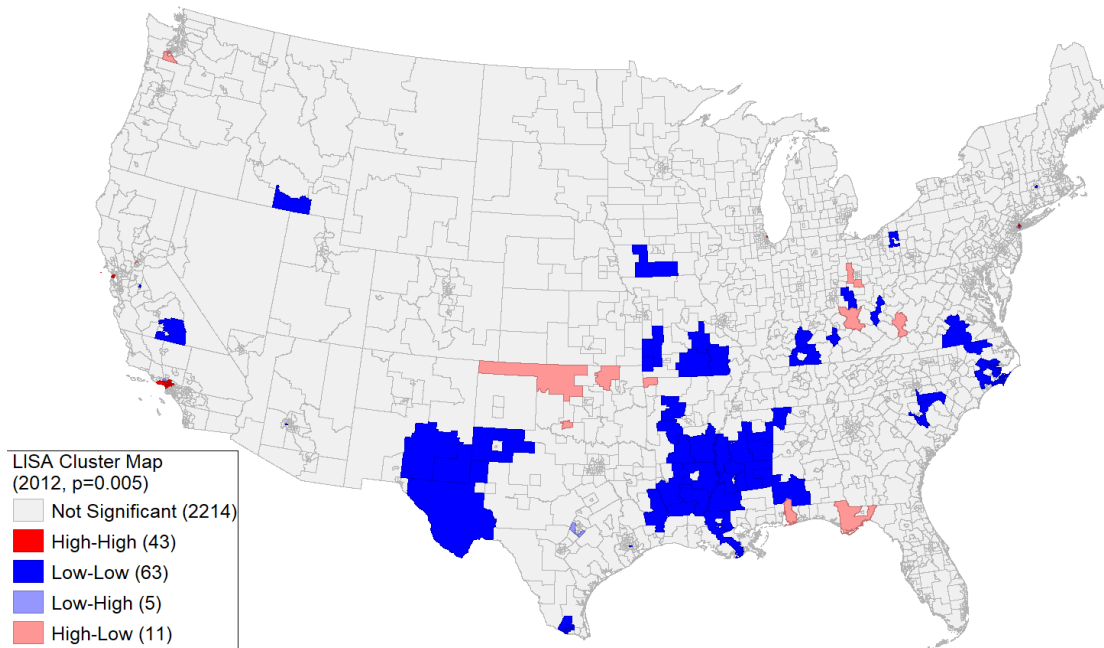**Figure 4.** LISA cluster map for the LQs of artists in the United states (2012, p=0.005).

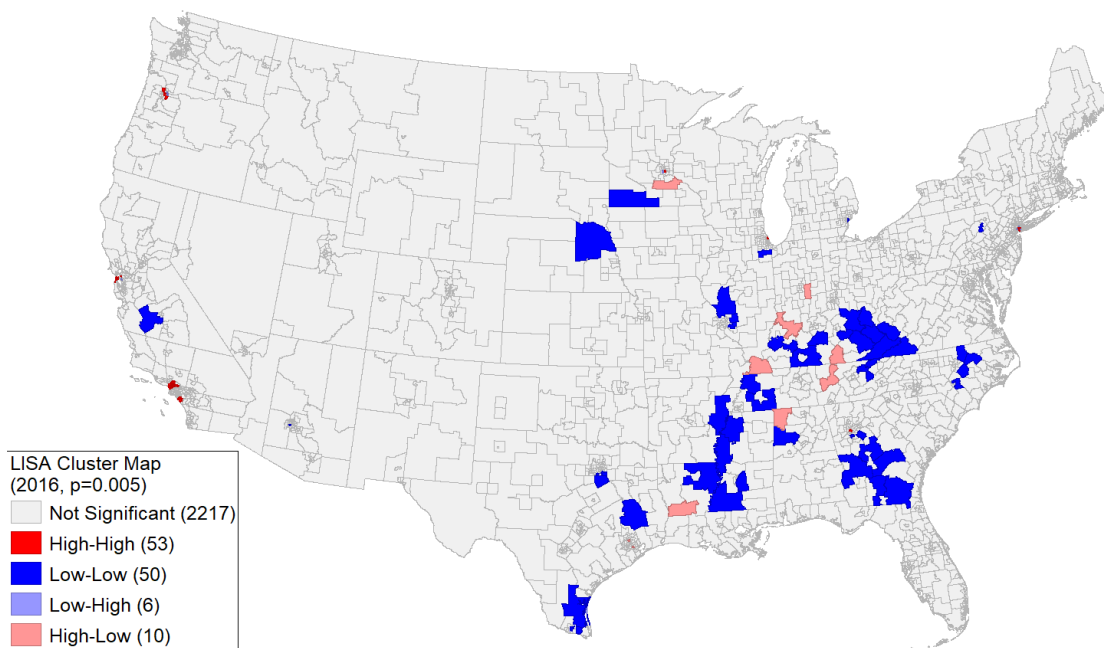**Figure 5.** LISA cluster map for the LQs of artists in the United states (2016, p=0.005).
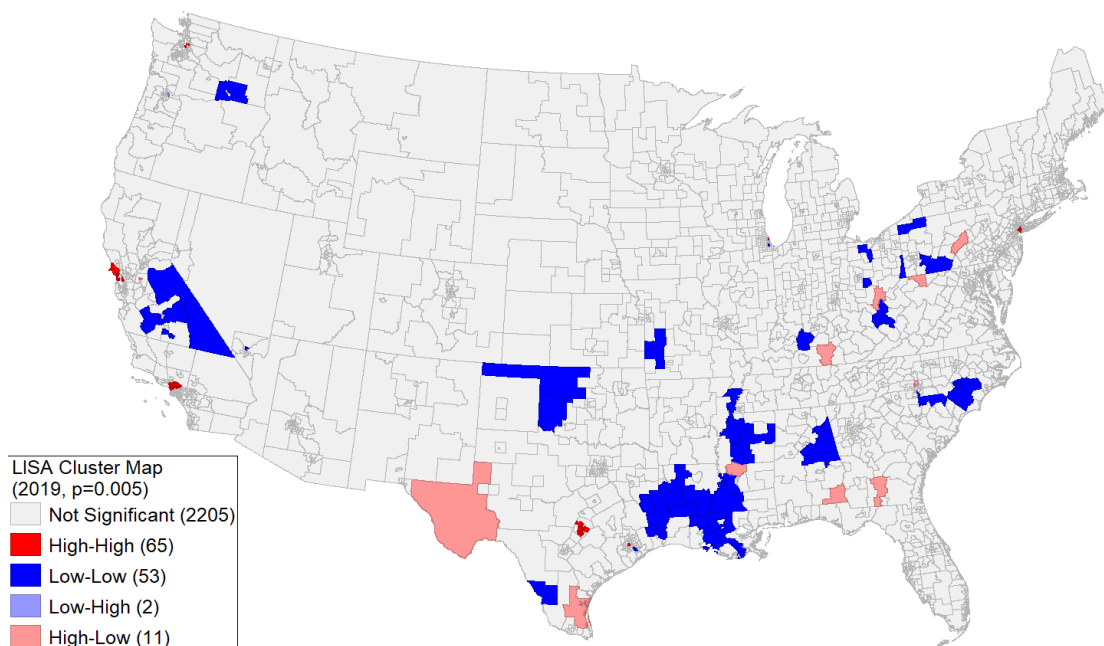
Figure 6. LISA cluster map for the LQs of artists in the United states (2019, p=0.005).

4.2. Focusing on a smaller area in the Southern United States

The above issues lead to the second round of analysis, with the focus shifting to a smaller, more specific sub-area. We chose the Southern United States as the new case study, prompted by the interesting and consistent low-low clusters witnessed above, as well as the area's precarious state following the 2008/2009 recession (Suitts, 2010; Connaughton & Madsen, 2012).

The first metric calculated, the Moran's I statistic, supports this assessment (Table 2):

Table 2. Moran's I results for the southern United States.

Year	Moran's I	SD	z-score
2012	0.195	0.0217	9.0665
2016	0.201	0.0214	9.4893
2019	0.219	0.0216	10.1654

Source: National Technical University of Athens

With all values above zero and higher than the theoretically expected value of -0.0011, as well as positive but smaller z-scores, the results are similar and on a scale that leaves no ambiguities about the results and makes the analysis more trustworthy.

Focusing on the area more intently and with the use of the same legend as the overall US maps, the following LQ maps are produced (Figures 7, 8, and 9):

Figure 7. Map of the Location Quotients of artists in the southern United States (2012).
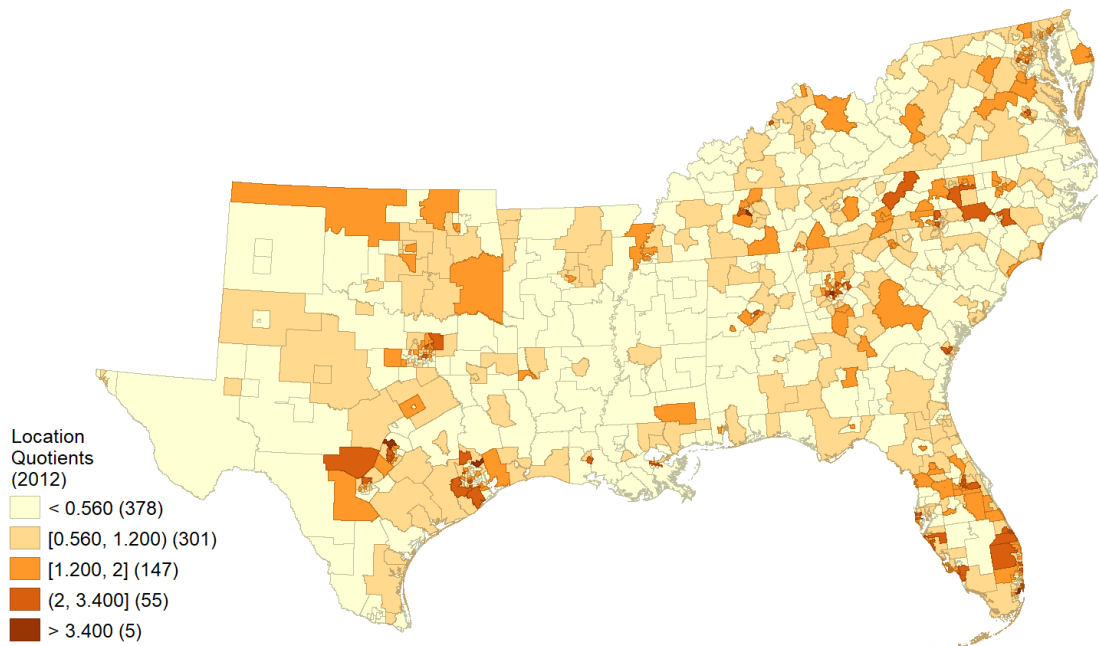

Location
Quotients
(2012)

< 0.560 (378)
[0.560, 1.200) (301)
[1.200, 2] (147)
(2, 3.400] (55)
> 3.400 (5)

Figure 8. Map of the Location Quotients of artists in the southern United States (2016).

Location
Quotients
(2016)

< 0.560 (371)
[0.560, 1.200) (326)
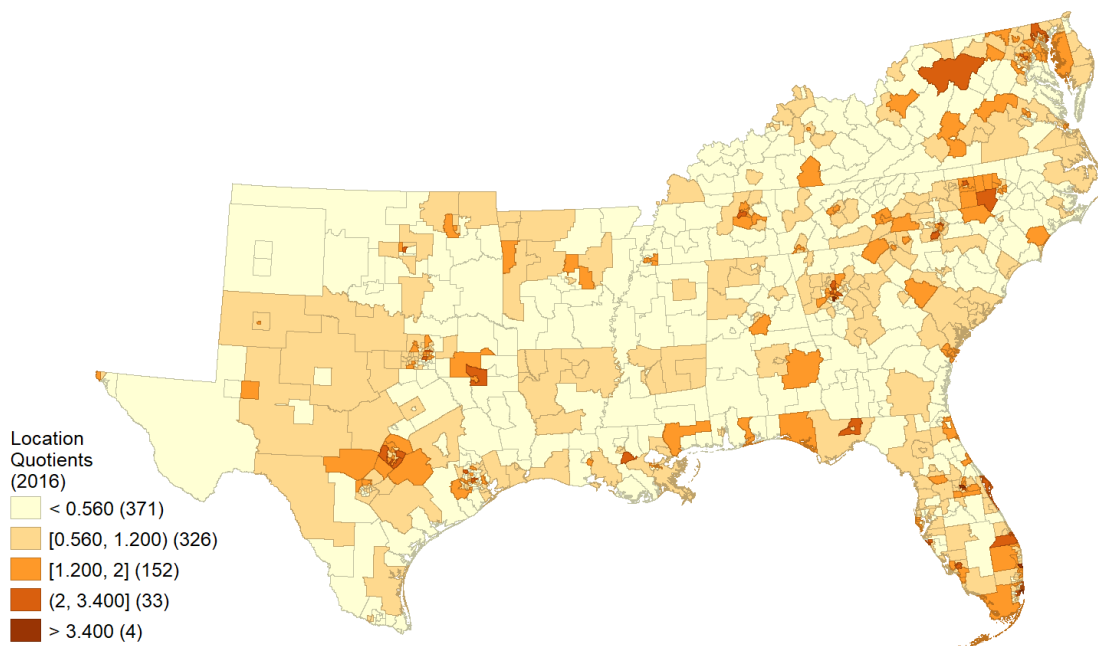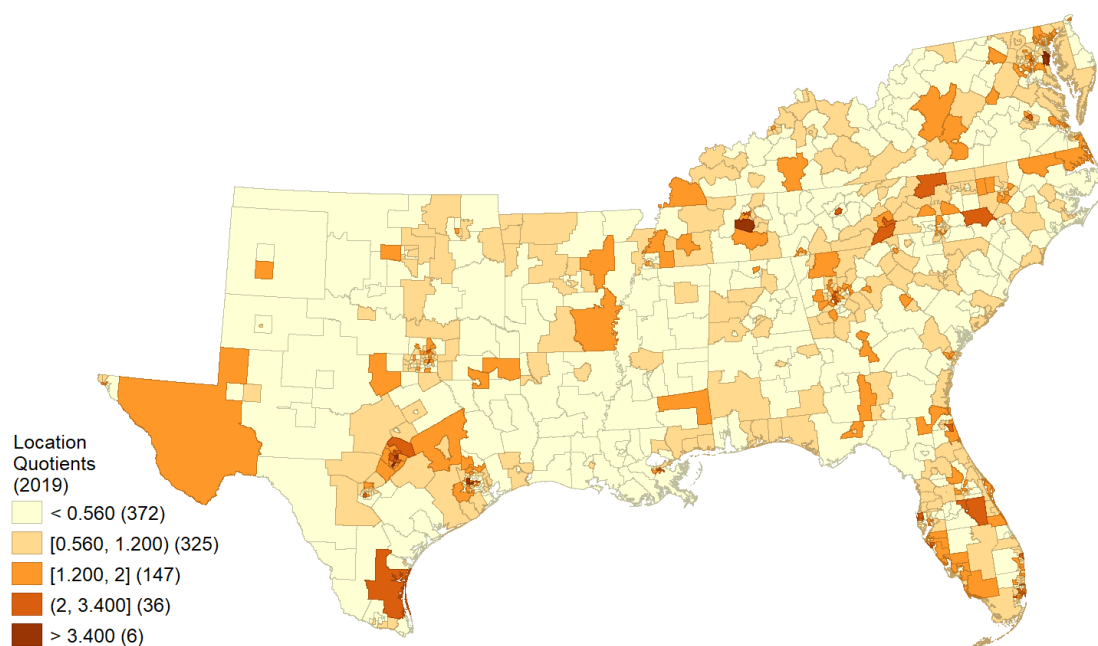[1.200, 2] (152)
(2, 3.400] (33)
> 3.400 (4)

Figure 9. Map of the Location Quotients of artists in the southern United States (2019).

Compared to the above, national impression, the southern states show some important differences. The rise in small-to-medium centers of artists is very small and a small bubble of medium-sized concentrations is overserved in 2016, but the most apparent trend is the slightly larger reduction of medium-to-large centers throughout the decade. Finally, both very robust centers and areas with very little specialization remain stable, indicating either the overall stagnation and/or regression of art workers anywhere except in major centers or their steady resistance to the greater recession.

The resulting centers, however, can be arranged in specific typologies. Depending on their relative stability and general population size, those cities and surrounding areas could be categorized as major –Huston, Austin, Dallas, Atlanta, Miami, Nashville, and the District of Columbia– secondary and stable –Tallahassee, Orlando, and Richmond–, and secondary but unstable –Oklahoma City, Sarasota, Jefferson, Tampa, Birmingham, Greensboro, Louisville, Baltimore, and Savannah. The emergence of communities with a strong presence in 2019 – Jacksonville City and Knoxville- should also be included. The increased focus also allows for the discovery of two particular types of concentration: rural pockets of activity and urban centers with less robust communities –their LQs being less than 2 but higher than 1.2, thus indicating a higher-than-average specialization–but with interesting stability –e.g. Memphis. The above could point to a new way of approaching creative cities –as existing, surviving (if not bustling) concentrations in need of stabilization factors–, discovering their similarities and replicating their successes for other cases

Lastly, we produce a series of cluster maps with the same parameters as the above (Figures 10, 11, and 12), which are shown below:

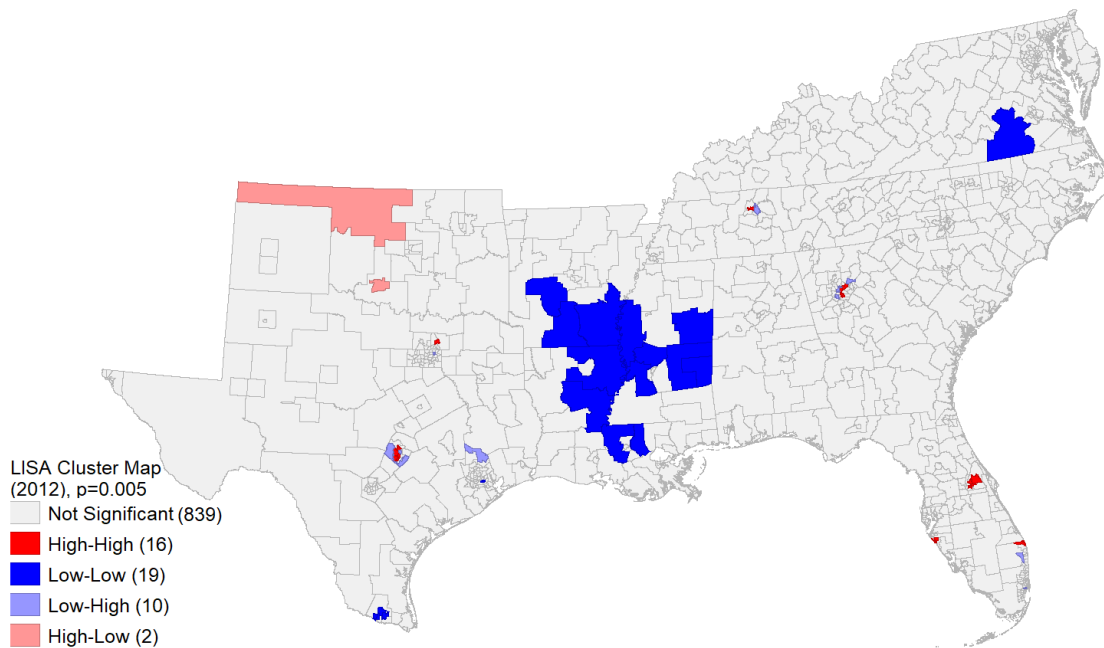**Figure 10.** LISA cluster map for the LQs of artists in the southern United states (2012, p=0.005).

Figure 11. LISA cluster map for the LQs of artists in the southern United states (2016, p=0.005).
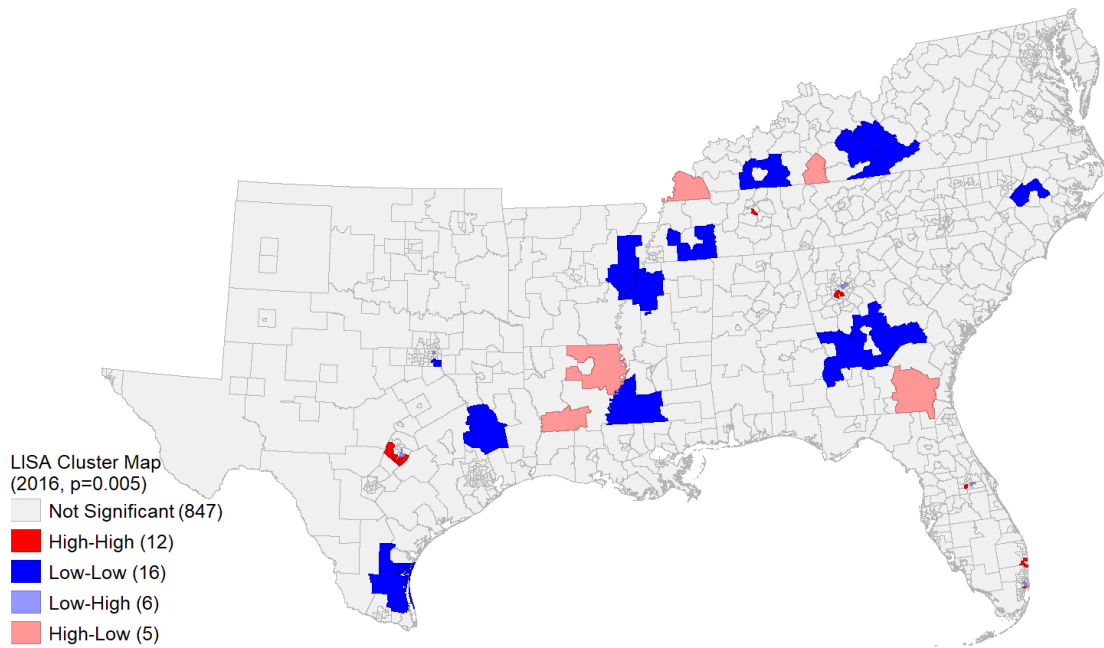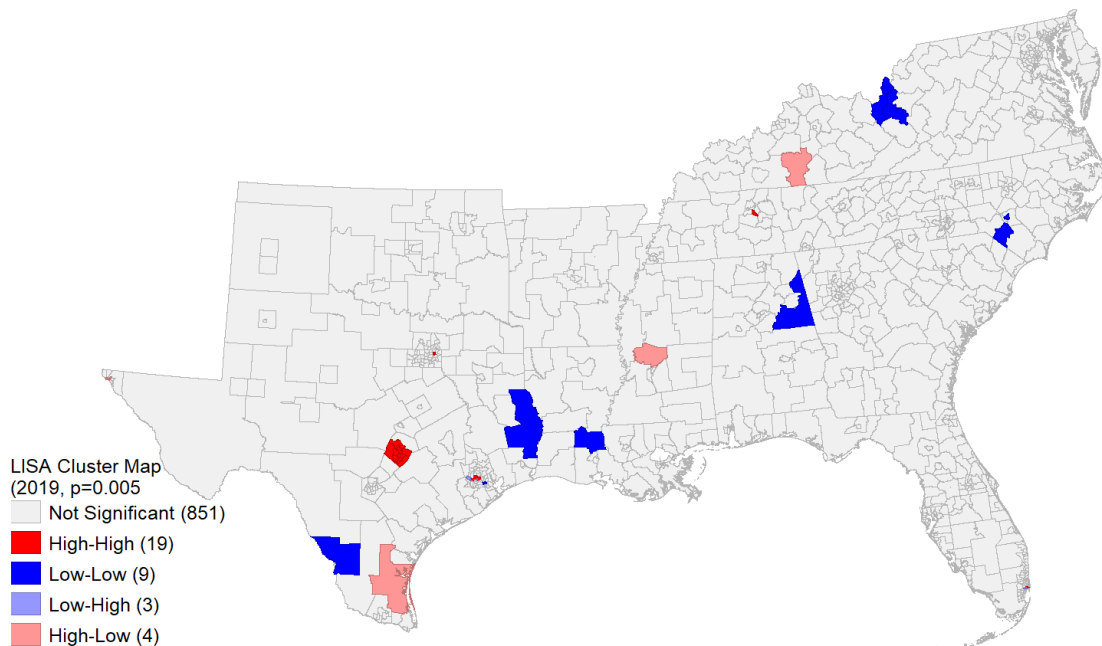
Figure 12. LISA cluster map for the LQs of artists in the southern United states (2019, p=0.005).

Scatterplot analysis reveals that: high-high clusters peak in 2016 and decrease to lower than their initial number –and the formation of larger, looser concentrations in Florida and North Carolina-, with the reverse happening to low-low clusters; and that both high-low and low-high clusters are generally stable, with small increases in 2019. That said, there is an overall unsteady rise in significant high-high clusters, with Texan cities increasing in importance, Nashville remaining stable and Atlanta and various Florida centers disappearing in 2019. The aforementioned low-low cluster also disintegrates, while individual high-low centers emerge as important –e.g. areas around Nashville and in the south of Austin. The above could point to an alternative in spotting rising artist centers, focusing carefully on existing communities and their gradual development.

5. DISCUSSION AND FURTHER WORK

The results of this preliminary, exploratory research are summarized as follows. In our previous inspections, the largest concentrations tended to dominate the maps, and so there was a tendency for smaller centers to get overlooked. The overall scale of the comparison also yielded some problems, with the focus on smaller areas and compatible spaces between countries being the next step. Finally, stability should be accounted for alongside steep growth, as places and workers find their own pace of development. All this points to the need to create developmental strategies for all communities, instead of one-size-fits-all solutions.

The above could be improved, however, with one idea being a greater consideration for the specific developmental histories and frameworks of interesting places. From overall policy guidelines and programs (EC, 2021) to individual case studies (Hospers, 2003), the European Union, as both an organization and as individual countries, has produced legislation and plans that have doubtlessly shaped the state of their creative cities. The above should be studied extensively to aid in the formulation of the best possible future strategies.

Continuing from the above, perhaps a new application of the methodology could be repeated in a country that bears a greater resemblance to Greece than the US. Countries of the European South like Portugal or the southern territories of Spain, France, and Italy have faced similar financial difficulties (Taylor-Gooby, Leruth & Chung, 2017) and attempted to promote culture-based development to counter it (Vanolo, 2015; d'Ovidio & Cossu, 2017;

Rius-Ulldemolins & Gisbert, 2019). This would allow for better comparisons and the creation of more comprehensive plans for the country.

Finally, some additions to the existing methodological model could make it even more useful. After an extensive literature review to discover possible parameters that contribute to the creation of creative clusters in Europe and the US (Andersson et al, 2014; Grodach & Seman, 2013), the use of regression could help create a mathematical model to discover the exact factors to boost and fortify. Moreover, qualitative data could also prove useful: interviews with working artists or local leaders could shed some additional light on situations and thus ensure our improvements are meaningful. The use and integration of more data sources across multiple agencies, as well as online information, would be both cost-effective and reliable; even if this combination could prove "attractive in principle, but difficult in practice" (Little, 2012), the result would be a deeper understanding of the situation many art workers find themselves in.

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