



Cultural Ecology, Neighborhood Vitality, and Social Wellbeing—A Philadelphia Project

CultureBlocks Final Research Report

**Prepared by the University of Pennsylvania Social Impact of the Arts Project (SIAP)
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Introduction

Over the past three years, with generous support from the National Endowment for the Arts (NEA) and ArtPlace, the Social Impact of the Arts Project (SIAP) at the University of Pennsylvania has collaborated with The Reinvestment Fund (TRF) and the City of Philadelphia's Office of Arts, Culture and the Creative Economy (OACCE) on the CultureBlocks project. The most visible element of the project has been the web-based cultural mapping tool that launched during the spring of 2013. Less obviously, SIAP and TRF have collaborated on a research agenda that build on the CultureBlocks' database. This report presents the results of that research collaboration. The first two papers summarize SIAP/TRF's endeavor to create a neighborhood-based index of social wellbeing for the city of Philadelphia. The third paper examines changes in the cultural ecology of Philadelphia between 1997 and 2010-12.

A Social Wellbeing Index for Philadelphia

The Social Impact of the Arts Project (SIAP) began in 1994 in response to the attention that *economic impact* studies were gaining at the time. We felt that these studies—in addition to their methodological flaws—captured only a fraction of the importance that the arts held for society. We committed ourselves to think through the theoretical and methodological issues involved in documenting the contribution of cultural engagement to community life.

Over the years, we've discovered many connections between the arts and social wellbeing, some of them quite surprising. It turned out that the arts were associated with preserving ethnic and racial diversity in urban neighborhoods, lower rates of social distress, and reduced rates of ethnic and racial harassment. Perhaps most surprisingly, we found that the presence of cultural assets in urban neighborhoods was associated with economic improvements, including declines in poverty and increases in population. We used the concept of "*natural*" *cultural districts* to study neighborhoods where we found unplanned concentrations of arts organizations, cultural enterprises, resident artists, and cultural participants; and we documented how the *social* and *civic engagement* associated with the arts seemed to drive these economic benefits and revitalization.

Over the past several years, we have reconceptualized our findings and their meaning for the cultural community, urban public policy, and scholarship. We were struck, on the one hand, by the debate over the *instrumental* versus the *intrinsic* value of the arts that our work and that of other scholars often provokes. On the other hand, we were uncomfortable with the tendency to view social impact as residing in individual artists and organizations rather than in the *cultural ecology* of neighborhoods and regions.

Our work on these issues has benefited from our collaboration with TRF and OACCE. One of the major inspirations for creative placemaking by the NEA Our Town program and ArtPlace has been the enhancement of *livability*. On a practical level, this focus is part of a strategy to link cultural funding more closely with wider initiatives of the Federal Government in the areas of sustainable development, smart growth, and transit-oriented development.

To the extent that livability is a policy perspective, it is anchored in the *livability principles* adapted by Partnership for Sustainable Communities created in 2009 by the U.S. Department of Housing and Urban Development (HUD), U.S. Department of Transportation (DOT), and the U.S. Environmental Protection Agency (EPA). These principles include:

Provide more transportation choices. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

Promote equitable, affordable housing. Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.

Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.

Support existing communities. Target federal funding toward existing communities—through strategies like transit-oriented, mixed-use development and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.

Coordinate and leverage federal policies and investment. Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

Yet, the focus on livability should be seen as a starting point, not the final goal of creative placemaking. The most significant shortcoming of livability as a perspective is its relative silence on issues of *social justice and inclusion*. Although livability should improve the lives of *all* Americans, we must be mindful that for the past generation, private markets and public policy have directed a disproportionate share of social and economic benefits toward a small, privileged part of the population. If livability improves lives without specifically addressing the harm done to the poorest and socially excluded Americans, it will serve to preserve social injustice and exclusion even if it achieves its broader policy goals.

From Livability to Social Wellbeing

Our endeavor to move beyond livability was aided by the work of an international group of scholars called the *capabilities approach*. This perspective, often associated with the philosopher Martha Nussbaum and the economist Amartya Sen, argues that we should understand social wellbeing as a product of people's *opportunities to be and do* in certain ways. Most importantly for cultural research, it suggests that we must move beyond purely economic yardsticks to judge wellbeing. In her work, for example, Nussbaum has suggested ten *central capabilities* that include: life; bodily health; bodily integrity; senses, imagination, and thought; emotions; practical reason; affiliation; other species; play; and control over one's environment. (See text box on page 4.)¹ There has been much debate over the composition of the list and about whether it's even a good idea to limit oneself to a single list.

The capabilities approach provides one means of *incorporating a social justice perspective into livability*. This human development approach has gained wide influence over the past several decades, and empirical work based on the theory has become more common. The United Nations adopted it as the basis for its Human Development Index, and the European Union and Organization for Economic Cooperation and Development (OECD) took it as the starting point for studies of social inclusion and social justice. The application of the approach to measuring social wellbeing was given a huge boost by the 2009 report of the Commission on the Measurement of Economic Performance and Social Progress, chaired by Sen and Joseph Stiglitz. That report spelled out in unprecedented detail how one might translate the ideas of the capabilities approach into an actual measurement of wellbeing.

We have come to realize that the Sen/Stiglitz framework provided not only a practical way to measure social wellbeing but also a way out of the intrinsic/instrumental debate. If we use the lens of capabilities, the question is no longer whether the arts promote social wellbeing. Rather, opportunities and access to the arts *are a part of social wellbeing*. Just as we wouldn't imagine talking about social wellbeing without discussing health or adequate food, housing, and income or the opportunity to pursue meaningful activities, we can't talk about social wellbeing without the arts and culture.

Notice that we've just moved beyond the intrinsic/extrinsic debate. On the one hand, we can document that a community with a rich cultural life is in some ways "richer" than one without it. On the other hand, we can go on to ask how the presence of cultural assets in a particular place may be associated with other types of social "goods", such as, better health or higher levels of social connection.

This conceptual change has implications as well for assessing the social impact of the arts. Rather than pursuing a set of separate studies—the arts and social capital, the arts and public health, the arts and quality of life—we need to place the arts within a frame

¹ Martha C Nussbaum, *Creating Capabilities, The Human Development Approach*. Cambridge, MA and London, England: The Belknap Press of Harvard University Press, 2011.

that includes all of the dimensions of social wellbeing. The questions become less about *whether* the arts matter to society and more about *how* the arts matter for various dimensions of wellbeing.

Although the capabilities approach has been critical to the SIAP/TRF research reported in the following papers, the research has forced us to revise some elements of the approach. As we've noted, most of the work on the capabilities approach has focused

The Central Capabilities proposed by Martha Nussbaum
From *Creating Capabilities: The Human Development Approach* (2011)

1. *Life*. Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.

2. *Bodily health*. Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.

3. *Bodily integrity*. Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice matters of reproduction.

4. *Senses, imagination, and thought*. Being able to use the senses, to imagine, think, and reason—and to do these things in a "truly human" way, a way informed and cultivated by an adequate education, including, but by not means limited to, literacy and basic mathematical and scientific training.

Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid nonbeneficial pain.

5. *Emotions*. Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)

6. *Practical reason*. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)

7. *Affiliation*. (A) Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)

(B) Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.

8. *Other species*. Being able to live with concern for and in relation to animals, plants, and the world of nature.

9. *Play*. Being able to laugh, to play, to enjoy recreational activities.

10. *Control over one's environment*. (A) *Political*. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association.

(B) *Material*. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.

on individuals' opportunities to lead a life that they have reason to value or on a nation's success in providing those conditions. Given TRF's and SIAP's focus on community conditions, we found the lack of attention to community to be a weakness of the approach, an observation made as well by Peter Evans.²

Communities can be defined by their institutions and social networks. Formal institutions—including schools, libraries, and non-governmental organizations (NGOs)—provide a critical link in the resources available to community residents. The importance of these resources is easy to miss until they are withdrawn. The recent spates of institutional closings that have affected American cities as a result of fiscal crises have brought this point home. Across the Delaware River from Philadelphia, the city of Camden, New Jersey has faced such a severe crisis that libraries, recreation centers, and even fire and police protection have been removed from the community.

The power of formal institutions, however, depends on the types of social networks that link individuals. In our work, we have identified two important forms of social networks. Some networks focus on issues of immediate concern to local residents and build on their determination to act collectively to improve their community. Sampson and his colleagues have characterized this type of network as evidence of collective efficacy.³ These community-based networks are complemented by those that link people and institutions across neighborhoods. As a result, cross-community networks function both as an alternative source of resources and as a means of tying communities to the larger region.

Both types of social networks contribute to community members' wellbeing. In an immediate sense, they provide a set of tangible resources that would otherwise not be available. In addition, the connections they foster provide a means through which residents can express their views and thus the potential for influence.

If institutions and networks are critical to wellbeing, then it makes sense that community context provide an important link among capabilities.⁴ Many of the institutions and networks that distinguish neighborhoods are tied to particular dimensions of wellbeing. Health and social service organizations promote health and bodily integrity. Recreational and cultural institutions promote affiliation, play and leisure, as well as imagination. Social justice institutions contribute to control over one's environment. If concentrated in particular places, institutions that promote one type of capability could contribute as well to realization of others. From an empirical standpoint, one would expect to find a statistical relationship between the various dimensions—that is, neighborhoods with evidence of one dimension of wellbeing would be likely to display other benefits as well.

² Peter Evans, "Collective capabilities, culture, and Amartya Sen's *Development as Freedom*," *Studies in Comparative International Development* 27, 2 (2002): 54-60.

³ Robert J. Sampson, *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago: University of Chicago Press, 2012.

⁴ Mark J Stern and Susan C Seifert, "Creative capabilities and community capacity" in *Enhancing Capabilities: The Role of Social Institutions*, edited by Hans-Uwe Otto and Holger Ziegler. Opladen, Berlin, Toronto: Barbara Budrich Publishers, 2013 (179-196).

The first two working papers in this report address the development of the social wellbeing index for Philadelphia.

Working Paper #1, “Culture as a Dimension of Social Wellbeing: Development of a Neighborhood-Based Wellbeing Index for Philadelphia,” presents the detailed method we used to create our index. In adapting the Sen/Stiglitz framework to a census tract geography, we found that some of their dimensions broke up while others merged. For example, after following Sen/Stiglitz in developing separate sub-indexes of material wellbeing, work activity, and education, we found that the correlations between the three were so strong that it made little sense to see them as distinct. As a result, we created a single measure of economic wellbeing that incorporates elements of all three. On the other hand, our analysis of social connection and health did not produce a single dimension but broke into several sub-indexes. For example, we identified two distinct dimensions of social connection—institutional connections and face-to-face connections—that were uncorrelated with one another. We derived three health dimensions—morbidity (the presence of chronic conditions), social stress (measures of low-weight births, homicide, and teen pregnancies), and health access.

The paper examines the relationship of social connection and SIAP’s cultural asset indexes. The findings suggest that cultural assets should be viewed both as an independent measure and as strongly associated with the social connection measures. Specifically, cultural participation is associated more closely with face-to-face connection and cultural institutions more closely with institutional connection.

Working Paper #2, “The Geography of Culture and Social Wellbeing: Patterns of Advantage and Disadvantage in Philadelphia Neighborhoods,” builds on the previous paper. First it examines the relationship of our sub-indexes of wellbeing to the demography of the city’s census tracts. Unsurprisingly, black and Latino neighborhoods have lower scores on many of the indexes than do white and ethnically diverse neighborhoods. The paper also examines correlations among the different sub-indexes, finding that many of them—including school effectiveness, housing problems, and social stress—are associated with the measure of economic wellbeing. This analysis leads to a cluster analysis, which groups the city’s census tracts into four distinct types based on concentrations of advantages and disadvantages.

The paper then moves to an analysis of the relationship of different measures of social wellbeing and SIAP’s indexes of cultural engagement. We find a strong relationship between many of the sub-indexes and cultural assets. Given the dominance of economic wellbeing, the paper examines the role of our measures of social connection and cultural engagement statistically controlled for economic wellbeing. It finds that face-to-face connection has a statistically significant relationship with school effectiveness, insecurity, and social stress; while institutional connection and the cultural asset index are related to the morbidity sub-index.

Philadelphia's Cultural Ecology

Developing the social wellbeing index has forced SIAP to explore how the arts fit into the broader social context of cities like Philadelphia. At the same time, we wanted to focus on how the neighborhood ecology of the arts and culture in Philadelphia has changed over time. Our original interest in the arts grew out of a sense that they did not reinforce other dimensions of social inequality in the city and therefore might serve as a point of leverage for addressing the city's intractable social problems. Yet, through our work across the city, we'd become concerned that the arts had lost ground in recent years. The places that were becoming more vibrant arts scenes seemed to be located in relatively advantaged neighborhoods. At the same time, many of the low-income black and Latino neighborhoods where we've worked seemed to be losing cultural resources.

Working Paper #3, "The Changing Contours of Philadelphia's Cultural Ecology, 1997-2012," uses SIAP's cultural inventories for 1997 and 2010-12 to examine changes in the concentration of different types of cultural assets within the city's census block groups.

SIAP has been studying the role of culture in Philadelphia for nearly two decades. Our first comprehensive index of the city's cultural assets, funded by the William Penn Foundation, dates from 1997. A 2010 grant from Leveraging Investments In Creativity allowed us to develop our most recent index, which we were able to refine as part of the CultureBlocks project. In addition to separate measures of nonprofit cultural resources, commercial cultural firms, resident artists, and cultural participants, the paper calculates a composite *cultural asset index* (CAI) for each year.

The general finding of the paper is that cultural assets became less equally distributed across the city during these years. Neighborhoods with few assets in 1997 generally fell farther behind, while those with many assets grew stronger. The paper also confirms earlier analyses that showed a strong relationship between economic standing, location near Center City, and presence of cultural assets. Given this relationship, the paper calculates a "corrected" CAI that identifies neighborhoods that are "overachieving" given income and location disadvantages. This forms the basis for a typology of cultural districts based on the CAI and the corrected CAI.

Finally, the paper uses the 1997 and 2010-12 data on nonprofit cultural resources to calculate the number of nonprofits that disappeared during these years as well as organizations that emerged in the past few years. Again, this analysis confirms that cultural resources became less equally distributed as low-income black and Latino neighborhoods had higher rates of organizational "mortality" and slower growth of "emerging groups" than better-off sections of the city.

The conclusion, **"Cultural Ecology, Neighborhood Vitality, and Social Wellbeing: Policy Context and Implications,"** takes a step back to assess the meaning of the patterns found in the statistical analyses. In particular, it considers how the connection between culture and other dimensions of wellbeing and the increasing unequal distribution of cultural assets influence the rationale for public investment in the arts and culture. Using the typology of cultural districts proposed in Working Paper #3, as well as the

social wellbeing clusters identified in Working Paper #2, the conclusion suggests that different investment strategies should be used in different types of neighborhoods. The paper highlights the situation of “civic clusters” located in low-income neighborhoods that have suffered the greatest declines in cultural assets in recent years.

The CultureBlocks project marks an important event in the development of cultural research. The web tool provides an opportunity to open up the discussion of the future of the arts in the city to a broader public. We hope that the SIAP/TRF working papers provide ideas and evidence that inform that discussion.

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CultureBlocks Working Paper #1.

**Culture as a Dimension of Social Wellbeing: Development of a
Neighborhood-Based Wellbeing Index for Philadelphia**

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Rationale and Approach

In recent years, cultural policy analysts have engaged in a battle over how best to conceptualize the social value of the arts. Much of this attention has been focused on the *instrumental versus intrinsic* debate. Should the arts be evaluated because they contribute to other types of social benefits—higher SAT scores, economic development, and social connection—or should their value be judged intrinsically, as the aggregate of the benefits that individuals derive from cultural engagement?

This paper is an effort to move beyond this debate. We argue that by adopting a *social wellbeing* perspective, we can see the intrinsic value of the arts as part of the ensemble of other elements that contribute to overall social wellbeing. This approach changes the kinds of questions we ask. Instead of asking whether cultural participation contributes to social benefit X and Y, we posit that social wellbeing is a product of a set of benefits that include X, Y, and cultural engagement. A social wellbeing perspective means that we no longer need to choose between intrinsic and instrumental; the arts and culture are *both* part of social wellbeing *and* associated with other aspects of it.

In addition to moving us beyond the intrinsic/instrumental debate, this approach moves the discussion of the social impact of the arts into a more mainstream discussion of how we judge the value of social policy in general. Over the past decade, many analysts have grown increasingly unsatisfied with how we evaluate social progress. Historically, we have used narrow economic measures—especially gross domestic product (GDP)—as the single best measure of social wellbeing. Yet a variety of scholars have pointed out the shortcomings of this approach both in its focus on an aggregate measure that is insensitive to distributional issues within a society and the growing gap between increasing consumption and other dimensions of wellbeing. For example, environmentalists have pointed out that much of the growth of GDP in recent decades is associated with unsustainable energy consumption and environmental degradation. Unless we develop a way to consider all dimensions of wellbeing, we are likely to overemphasize some aspects of wellbeing and underemphasize others.

Advocates of the *capabilities approach* have been among the leaders in pursuing this critique. Amartya Sen's early critiques of conventional welfare economics challenged its inattention to distributional issues. His equation of development with freedom drew an important connection between people's ability to make choices about the lives they lead and their overall wellbeing. "Capability is," for Sen, "a set of vectors of functions, reflecting the person's freedom to lead one type of life or another (Sen 1992: 40). Martha Nussbaum, a philosopher, came to similar conclusions about the types of choices open to people and their ability translate those choices into particular functionings.

A landmark in the development of this perspective (and the inspiration for this project) was the 2009 publication of the *Report by the Commission on the Measurement of Economic Performance and Social Progress*. The Commission, headed by Sen and Joseph Stiglitz, built on previous criticism of GDP-based approaches to wellbeing and proposed

a list of capabilities. It advocated an operationalization of quality of life with eight dimensions that laid the foundation for our study of Philadelphia.

As with much of the international work on social wellbeing, the Sen/Stiglitz report focused on developing national measures. Yet, there are reasons to believe that the national focus misses many aspects of wellbeing. First, residential patterns create persistent patterns of inequality that a national standard is likely to miss. By the same token, non-governmental dimensions of wellbeing—such as the extent to which one trusts one’s neighbors—are hard to identify in national data.

Because of our interest in the local dimensions of wellbeing, we adapted the Sen/Stiglitz model to the city of Philadelphia and calculated indexes at the census tract level. In shifting from a national to a neighborhood perspective, some dimensions became less salient. For example, the variation in political voice and environment across neighborhoods is relatively minor compared to that among nations. Other dimensions refused to be restricted to a single scale. Ultimately, we ended up with more than a dozen separate scales. Finally, three dimensions correlated so highly—income, educational attainment, and labor force participation—that we decided to combine them into a single dimension.

With these modifications, however, we were successful at implementing the Sen/Stiglitz framework by census tract. The result is not a startling new interpretation of social wellbeing in Philadelphia but a more detailed and nuanced assessment of how different dimensions of wellbeing reinforce and cross-cut one another. Our findings are presented in *CultureBlocks Working Paper #2: The Geography of Culture and Social Wellbeing: Patterns of Advantage and Disadvantage in Philadelphia Neighborhoods*.

Conceptual issues—livability, social inclusion, and social wellbeing

The goal of the project has been to develop a conceptually anchored way of measuring the various factors that make life better or worse for Philadelphians. In doing so, we enter a bit of a conceptual thicket. Historically, one can trace the methods used here back to the *social indicators* movement of the 1960s and 1970s. That movement shares many conceptual and methodological concerns with more contemporary work. In essence, both the earlier and current movements argued for systematic data gathering on non-economic measures of wellbeing as a means of better representing social progress and its unequal development over time. The earlier movement, however, reflected a period of history in which (what some have called) the *liberal consensus* dominated social science. Emerging at a moment in history when many believed that ideological battles were over and that there was general consensus about the purpose of government action and social policy, social indicators movements often stemmed from what Herbert Blumer called “operationalism.” In essence, this approach sought to avoid the philosophical challenge of demonstrating how a particular measurement or indicator was associated with an underlying concept by asserting that the concept was simply what was measured.

But the ground was shifting. Even as many of the ambitious social indicators projects of the 1960s and 1970s were beginning to produce results, the foundation of the work was under attack. On the one hand, the emergence of both radical and conservative critiques of the liberal consensus challenged whether all of the “goods” measured by social indicators researchers were in fact *good*. At the same time, this change in the socio-political milieu was reinforced by developments within the social sciences. The sociology of knowledge, to say nothing of post-modernism, spurred a fresh appreciation of the role of ideology and social context in the creation of social knowledge and undermined the “operationalist” belief that social indicators could speak for themselves.

As a result, social indicators movements ran out of steam during the 1970s and 1980s. Only in the 1990s did they revive. In Europe organizations like the European Commission and the Organisation for Economic Cooperation and Development (OECD) showed a fresh interest in gathering consistent, cross-national data on a variety of social conditions. In the US, a confederation of local and national players promoted the National Neighborhood Indicators Partnership (NNIP) to develop consistent data about a variety of American cities.

Many of these efforts appeared to repeat the mistakes of the earlier movements by placing almost all of their emphasis on techniques for measuring particular indicators with little explicit discussion of the underlying concepts that drive the scholarship. Other efforts, however, have been more up front about their conceptual orientation. Here we focus on three of these concepts: livability, social inclusion, and social wellbeing.

Livability

The concept of livability appears to have its origins in agricultural science where it was used to denote whether a particular organism was likely to survive.¹ This usage was adopted to some extent by early environmentalists who were concerned that pollution, overpopulation, and overcrowding might render particular cities literally *unlivable*. Veenhoven, for example, defines *livability* as “the degree to which [a nation’s] . . . provisions and requirements fit with the needs and capacities of its citizens.” Still, Veenhoven continues to focus primarily on “minimal needs” like food, safety and contacts. Over time, this survivalist connotation has given way to a broader notion of the array of physical, social, and cultural qualities that increase residents’ quality of life.

The concept of livability took on a more specific official meaning with the articulation of a set of “livability principles” by the Obama administration in 2009. The six principles include:

- *Provide more transportation choices.* Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

¹ See, for example, Sidwell, George M., Dale O. Everson, and Clair E. Terrill. "Fertility, prolificacy and lamb livability of some pure breeds and their crosses." *Journal of Animal Science* 21, No. 4 (1962): 875-879.

- *Promote equitable, affordable housing.* Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- *Enhance economic competitiveness.* Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers as well as expanded business access to markets.
- *Support existing communities.* Target federal funding toward existing communities—through strategies like transit-oriented, mixed-use development and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- *Coordinate and leverage federal policies and investment.* Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- *Value communities and neighborhoods.* Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.²

Reflecting the orientation of the member agencies (HUD, DOT, and EPA), this concept of livability continues a clear “bricks and mortar” emphasis on reducing commuting and sprawl, promoting smart growth, and reducing energy consumption.

The National Endowment for the Arts (NEA) has connected its mission to the livability agenda through its “Our Town” program and, at the same time, sought to change the emphases of the livability principles. Although much of its “creative placemaking” work has focused on contributing to the sustainability of cities, NEA has expanded the meaning of livability to include many non-brick-and-mortar qualities like expanded amenities, authenticity, tolerance, civic involvement, and connection to history and heritage.³ In doing so, it may have stretched the concept beyond its more common usages in environmental quality and basic human needs.

² <http://www.sustainablecommunities.gov/aboutUs.html>

³ National Endowment for the Arts, “Arts and Livability: The Road to Better Metrics.” (Washington DC, NEA, 2010): 67.

Social exclusion/inclusion

In contrast to the biological and environmental emphasis of livability, the concepts of *social exclusion* and *social inclusion* are explicitly focused on the relationship between people and groups. The concepts are used in the United Kingdom and the European Community to characterize “contemporary forms of social disadvantage” that marginalize particular social groups. In our work, we’ve relied on Hilary Silver’s definition:

Social exclusion is a multidimensional process of progressive social rupture, detaching groups and individuals from social relations and institutions and preventing them from full participation in the normal, normatively prescribed activities of the society in which they live.⁴

The concept of *social inclusion*, which sees exclusion as an active process, implies that the burden for overcoming exclusion rests with mainstream institutions, that it is not simply a result of individual deficits that burden the excluded group.

European nations have taken the lead in addressing social exclusion. The term originated in France where it was closely tied to French notions of citizenship and solidarity. There it has continued to influence social policy directed at low-income populations.⁵ The United Kingdom under New Labour adopted a more “Anglo-Saxon” notion of exclusion that walked the tightrope between structural and “pathology” explanations of persistent poverty and joblessness.

The European Union saw fit to define 2010 as the “European Year for Combating Poverty and Social Exclusion.” As part of that recognition, Eurostat issued an empirical report, “Combating poverty and social exclusion: A statistical portrait of the European Union 2010.” The report defined social exclusion as the inability of residents “to enjoy levels of participation that most of society takes for granted.” Recognizing the multi-dimensional nature of the concept, Eurostat noted that social exclusion distances residents “from job, income, and education opportunities as well as social and community networks and activities. They have little access to power and decision-making bodies and thus often feel powerless and unable to take control over the decisions that affect their day to day lives.” The report examines data in five particular domains of exclusion: labor market, educational institutions, health, housing, and social networks and the information society.

⁴ Silver, Hilary. 2007. *Social Exclusion: Comparative Analysis of Europe and Middle East Youth*, *Middle East Youth Initiative Working Paper* (September).

⁵ For example, “workfare” was adopted in France not as a punitive device for reducing welfare rolls but as an assertion that citizenship was a combination of rights and responsibilities that required “insertion” of excluded individuals into the labor force. Hilary Silver and S. M. Miller, “Social Exclusion: The European Approach to Social Disadvantage,” *Indicators 2:2* (Spring 2003): 1-17.

Social wellbeing

Although both livability and social inclusion touch on some aspects of how the arts might generate value in society, both have blind spots. Its emphasis on the natural and built environment tilts livability away from culture's focus on human interactions and imaginaries. This focus may explain the over-reliance of some "creative placemaking" on the physical structure of places in neglect of the ideas and behaviors that shape them.⁶ Although social inclusion is certainly *one* possible role of the arts—as we have explored in our study of arts-based social inclusion⁷—it is only one of many ways that the arts could connect to other social "goods."

Because of these limitations, we have chosen to use the concept of *social wellbeing* to describe our approach. The term can incorporate much of the utility of both livability and social inclusion but leaves room for ways to be and act in society that don't fit comfortably into the other two concepts.

The concept of social wellbeing draws on two perspectives: subjective wellbeing and the capabilities approach. Subjective wellbeing is typically studied using survey methods to measure an individual's assessment of his or her own psychological state. Sen and Stiglitz highlight three dimensions of subjective wellbeing:

- life satisfaction, *i.e.* a person's overall judgment about his/her life at a particular point in time;
- presence of positive feelings or affect, *i.e.* the flow of positive emotions (such as feeling happiness and joy, or a sense of vitality and energy) from moment to moment; and
- absence of negative feelings or affect, *i.e.* the flow of negative emotions (such as feeling angry, sad or depressed) from moment to moment.⁸

The capabilities approach, in contrast, focuses on the opportunities open to individuals and how they take advantage of those opportunities. Authors within this tradition often draw a distinction between the actual opportunities (capabilities) and the behaviors associated with those opportunities (functionings). This distinction originated in Sen's critique of conventional welfare economics. He wished to maintain the economist's emphasis on *choice* but at the same time introduce a more objective basis for judging the types of choices people make. In particular, the idea of *adaptive preferences*—the notion that people adapt to their lack of freedom and make choices within the limited set of choices open to them—became critical in providing capabilities scholars a way of arguing that survey data alone were not a reliable way of assessing wellbeing.

⁶ Roberto Bedoya, "Creative Placemaking and the Politics of Belonging and Dis-Belonging," *Arts in a Changing America*. September 1, 2012.

⁷ Mark J Stern and Susan C Seifert 2010. *Arts-based social inclusion: An investigation of existing assets and innovative strategies to engage immigrant communities in Philadelphia*, University of Pennsylvania, Social Impact of the Arts Project.

⁸ Sen and Stiglitz, pp. 146.

An example might help explain the relationship of capabilities, functionings, and adaptive preferences. “Bodily integrity” is included in Martha Nussbaum’s list of basic capabilities, by which she means “being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.”⁹ One can define this capability objectively in terms of services and policies that address violence and family planning and protect people’s rights of association. A woman living in a repressive religious state, but whose parents take steps to provide her with the necessary services and protection, might express a high degree of satisfaction with her situation. In other words, *adaptive preference* would lead her to express satisfaction with her life even though her capabilities are severely constrained by state and religious oppression.

Sen/Stiglitz Commission report as basis for empirical study of social wellbeing

The capabilities approach has its own weaknesses. It is a highly normative approach and identifies a set of capabilities that would not be universally approved. The difference between *capabilities* (which cannot be observed empirically) and *functionings* (which can be) offers scholars an open invitation for speculation and theorizing—an invitation that many have accepted. Indeed, the capabilities approach has generated more theoretical response than empirical efforts to document how well it works.

The 2009 Sen/Stiglitz Commission represents the most ambitious effort to use conceptual clarity to frame the empirical study of social wellbeing. After reviewing the existing literature on both subjective and capabilities approaches to wellbeing, the Commission articulated an eight-dimension definition of wellbeing and then identified the types of data necessary for estimating each of these dimensions.

The Philadelphia project took as its starting point the eight dimensions of wellbeing specified by the Commission but sought to move beyond its work in several ways. First, the Sen/Stiglitz report focused on the potential for measuring wellbeing at the national level. In the current study, we have sought to ask if we can measure wellbeing at the more human scale of the urban neighborhood or census tract. Second, the Sen/Stiglitz report was preoccupied with the contribution of government policy to wellbeing. In our work, we have sought to integrate individual and civic conditions into our portrait.

These two innovations are closely related. The capabilities approach typically views individuals as operating in the context of the national economy and state. Intermediate institutions—civil society, neighbors, and families—play little role in its work. Yet, as Robert Sampson¹⁰ has reminded us, neighborhood conditions provide a durable and profound influence on how people act, the opportunities they enjoy, and the challenges they face. By moving to a neighborhood scale, we can better understand how actual

⁹ Martha Nussbaum, “Capabilities as Fundamental Entitlements: Sen and Social Justice,” *Feminist Economics* 9 (2-3)(2003), 41.

¹⁰ See Robert J Sampson, *Great American City: Chicago and the Enduring Neighborhood Effect*, University of Chicago Press, 2012.

social conditions, including public policy, enhance and restrict people's ability to do or be in particular ways.

The starting point for our investigation was the eight dimensions of wellbeing proposed by Sen and Stiglitz:

- material standard of living: income and inequality;
- health: mortality, morbidity, and access;
- education: attainment, achievement, and access to quality;
- personal activity: working conditions, leisure, and housing;
- political voice: voting and participation;
- social connection: institutional structure and face-to-face relations;
- environment: threats and assets; and
- insecurity: physical security and crime.

In the course of the research, however, we modified this framework in several ways. First, we were struck by the lack of attention to housing conditions. In their report, Sen and Stiglitz incorporated housing as part of their "personal activity" dimension. Furthermore, as we investigated possible sources of data, we discovered that many indicators of leisure activity overlapped with the social connection dimension. As a result, we decided to identify housing as a separate dimension and to refocus the personal activity dimension as activities associated with work.

The second alteration was unanticipated. Our method used principal component factor analysis to reduce a group of individual indicators to a smaller number of "factors" or dimensions of each sub-index. However, in most cases, the data would not reduce to a single factor. As a result, the nine dimensions that we began with multiplied, at one point reaching over twenty factors or scales. For example, in place of a single health measure, we found three scales: morbidity, access, and poor prenatal care/high homicide.

Our final modification resulted from the statistical correlation among different factors. In particular, we found a strong relationship between our measures of educational attainment, income, and labor force participation. As a result, we recalculated a single factor in place of these three and found that it was the most powerful predictor of many of our other factors. In the end, we decided on the twelve separate sub-indexes that are summarized on Table 1-1.

Table 1-1. Dimensions of social wellbeing, Philadelphia sub-indexes

Dimension	Sub-indexes	Description
<i>Economic wellbeing</i>		Material standard of living: income, educational attainment, labor force participation
<i>Economic diversity</i>		Gini coefficient (measure of inequality), poverty, unearned income
<i>School effectiveness</i>		Current school proficiency scores, dropout rate, truancy
<i>Housing</i>		Overcrowding, housing financial stress, vacancy rate, code violations
<i>Social connection</i>		
	Institutional	Nonprofit organizations, cultural assets, percentage lived elsewhere one year ago
	Face-to-face connection	Trust, belonging, participation
<i>Insecurity</i>		High personal and property crime rates, Human Relations Commission complaints
<i>Health</i>		
	Morbidity	Diabetes, hypertension
	Insurance, access	Low insurance rates, delayed care due to cost
	Social stress	High teen pregnancy, lack of prenatal care, high homicide, reports of child abuse & neglect
<i>Environment</i>		
	Environmental assets	Parks, trees, grass, (flood plains), underground streams (inverse), heat vulnerability
<i>Political voice</i>		Percent of eligible population casting ballots in 2007 and 2008

Data and Methods

Geography

The goal of the project was to develop a neighborhood-based measure of social wellbeing. In operationalizing neighborhood, we needed to consider a geographic unit that both made conceptual sense and for which we could actually gather sufficient data. In previous work, the research team had pushed to create indexes at as small a unit of geography as possible, typically the census block group. However, for a variety of reasons, using the block group was not practical for the current project. First, beginning in 2010, current detailed census data is produced not from a subsample of the decennial census but from the aggregation of five years of American Community Survey (ACS) results. The first such file covered data gathered between 2005 and 2009. Because of challenges associated with combining five separate files, the Census Bureau now severely limits the information available at the block group level. For example, data on the foreign-born population, formerly available at the block group level, are now available only at the census tract level. Furthermore, several of our non-census sources of information were available only down to the tract level. As a result, we made the decision early on to use the census tract as our basic unit of analysis.

The use of census tracts involved its own complications. The census tract boundaries for Philadelphia had remained fairly stable between 1980 and 2000. However, the 2010 revisions radically changed the boundaries and made it impossible to use data from both sets of boundaries. The 2005-09 ACS summary files used the 2000 boundaries, but the 2006-10 and 2007-11 files used the 2010 boundaries. Because several of our data sources (crime, health, social connection) used data aggregated to the 2000 tract boundaries, we chose to use the 2005-09 ACS data.

Figure 1-2. Philadelphia Neighborhoods



Sources of data

American Community Survey summary file

The Census Bureau's 2005-09 American Community Survey (ACS) summary file was our primary source of data. It was the sole source of data for our estimates of income, poverty, economic diversity, educational attainment, labor force participation, commuting times, property ownership and housing costs, household structure, and geographic mobility. Overall, we employed the ACS in five of the nine original dimensions of the index.

Philadelphia County vital statistics

We used vital statistics compiled by the County of Philadelphia to estimate birthrates, teen pregnancy, low-weight births, infant deaths, and the prenatal care of children in the city.

Public Health Management Corporation's Community Health Survey

Since the 1990s, the Public Health Management Corporation (PHMC) has conducted a biennial survey of Southeast Pennsylvania households. It includes questions about respondents' health status, health-related behaviors, access to and use of health

services, and (since 2004) about respondents' "social capital" (including level of community participation and perceptions of trust and belonging).

We used the PHMC survey to provide information on morbidity and health access for our health index and information on "social capital" for the social connection sub-indexes.

The PHMC survey includes approximately 4,300 respondents for the city of Philadelphia for each year. In order to increase the accuracy of our estimates for census tracts, we combined data from the 2006, 2008, and 2010 surveys, giving us approximately thirteen thousand cases.

Philadelphia Uniform Crime Reports

The Philadelphia Police Department compiles data using the Department of Justice's Uniform Crime Report. These data—number of crimes of a given type reported—were compiled to census tracts by Penn's Cartographic Modeling Lab.

We conducted two different analyses of crime data. We aggregated census tract counts of serious crimes against person and against property. In addition, we used data on individual crimes to estimate the risk of exposure to crime for individual city blocks and then aggregated these risks to the census tract level. These risk data were our primary source of estimates for the personal insecurity sub-index.

Internal Revenue Service master file of exempt organizations

The Internal Revenue Service (IRS) provides a public file of all nonprofit organizations that have received tax-exempt status. Historically, an organization would remain on this file in perpetuity once it received its exemption. However, beginning in 2012, organizations that fail to submit their Form 990 to the IRS lose their exemption and are dropped from the file.

Using the IRS master file, we compiled the number of organizations of different types located in the city's tracts. We then used these data as part of the estimate of the social connections sub-index.

Penn's Social Impact of the Arts Project database

The Social Impact of the Arts Project (SIAP) at the University of Pennsylvania maintains a database of nonprofit cultural providers, commercial cultural firms, resident artists, and cultural participants located in the city of Philadelphia. SIAP uses these data to calculate a Cultural Asset Index (CAI) score for every block group and census tract. We used the tract scores as part of the estimate of the social connections sub-index.

Environment data

Our environment sub-index drew upon a variety of data. We used data on streams and buried streams to estimate flood plains and subsidence risks for the Philadelphia neighborhoods. TRF's PolicyMap provided data on parks. The City's Office of Sustainability commissioned a detailed (one square meter) map of Philadelphia land cover map in 2008, which we used to estimate the percent of each tract covered in trees

or grass. In addition, we used the US Environmental Protection Agency’s Toxic Release Inventory to identify the concentration of different types of releases in tracts. We also integrated NASA data from the LandSat V on thermal radiation to identify heat vulnerability across the city.

Political voice data

The Philadelphia City Commissioners provided data for the political voice sub-index, which included counts of registered voters and actual voters for each of the city’s voting divisions. We converted these data to census tracts by using GIS to aggregate the divisions within each tract. When a division spanned more than one census tract, we allocated its counts to the tracts by “intersecting” voting divisions and census blocks and then aggregating the blocks into the tracts based on the proportion of the division’s estimated population residing in each tract.

Work activity data

Several data sources were used to compile our work activity sub-index. We used the General Social Survey to calculate an average work-satisfaction score by occupational groups. The US Bureau of Labor Statistics provided union density rates for particular industries. We included both of these figures in our calculation of work activity.

Additional housing data

Several additional sources contributed to our housing measures. We used US Postal Service data on vacant dwellings and City of Philadelphia Licenses and Inspections Department data on code violations. In addition, we used TRF’s estimates of the percent of Philadelphia homeowners who owed more on their dwelling than its present value (“underwater” homeowners) and Act 91 filings, which provides an estimate of foreclosures.

Department of Human Services

The city of Philadelphia provided a summary file of reported cases of child abuse and neglect for 2008-2012 aggregated to the census tract.

Philadelphia Human Relations Commission

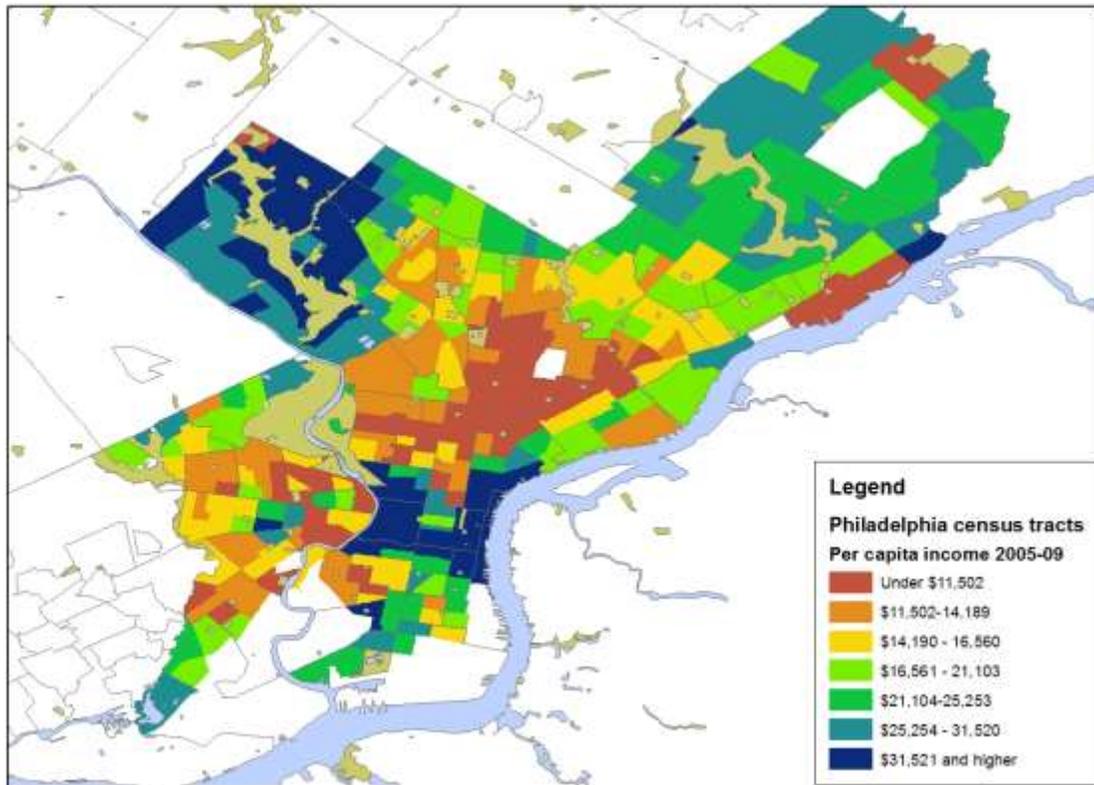
The Commission provided reports of reported incidents in three categories: ethnic/racial incidents, neighborhood disputes, and preventive actions taken by the Commission.

Economic wellbeing

For material standard of living, we reduced the original number of factors by combining the three marked above with asterisks—income, educational attainment, and employment/job satisfaction (“happy workers”)—into a single measure of *economic wellbeing* because of their high correlations with one another. The original analysis of *material wellbeing* combined several measures of income (median household, median family, per capita); poverty; income from interest, dividends, and rents; and the Gini coefficient (a measure of income inequality or diversity). Our analysis of these variables

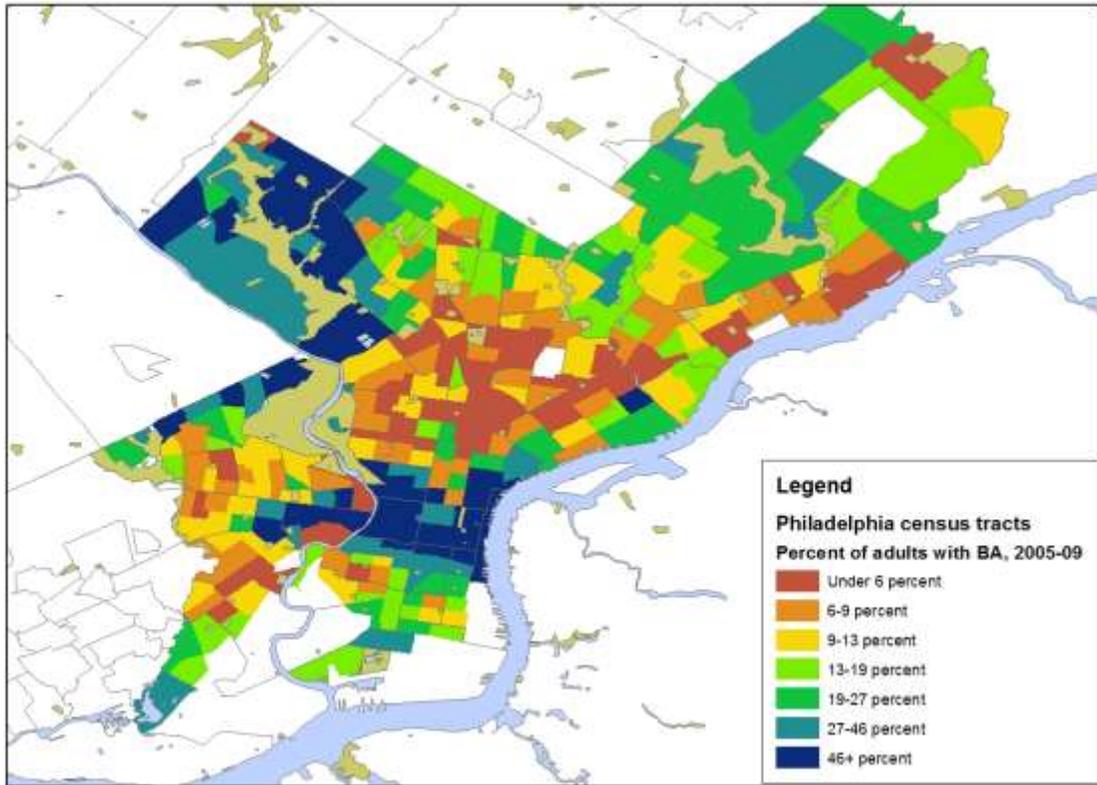
found high correlations among them, with the exception of the Gini coefficient. As a result, we incorporated the income variables into the economic wellbeing dimension but identified the Gini coefficient—economic diversity—as a distinct sub-index.

Figure 1-3. Per capita income, Philadelphia census tracts 2005-09



In its original formulation, the education dimension included measures of past educational opportunities (adult educational attainment) and the current effectiveness of schools in a particular area. The primary education measure used in our economic wellbeing index was the percent of the adult population who were college educated, that is, who had earned at least a bachelor's degree.

Figure 1-4. Percent population over 25 years old with BA degree, Philadelphia census tracts 2005-09



The final sub-index of economic wellbeing—identified as “happy workers”—derived from our analysis of personal or work activity. We first incorporated measures of labor force participation and employment and unemployment rates. Next we added our imputed measure of satisfaction with work based on General Social Survey data on job satisfaction reported by different occupational groups.

Figure 1-5. Percent population over 15 years old not in labor force, Philadelphia census tracts 2005-09

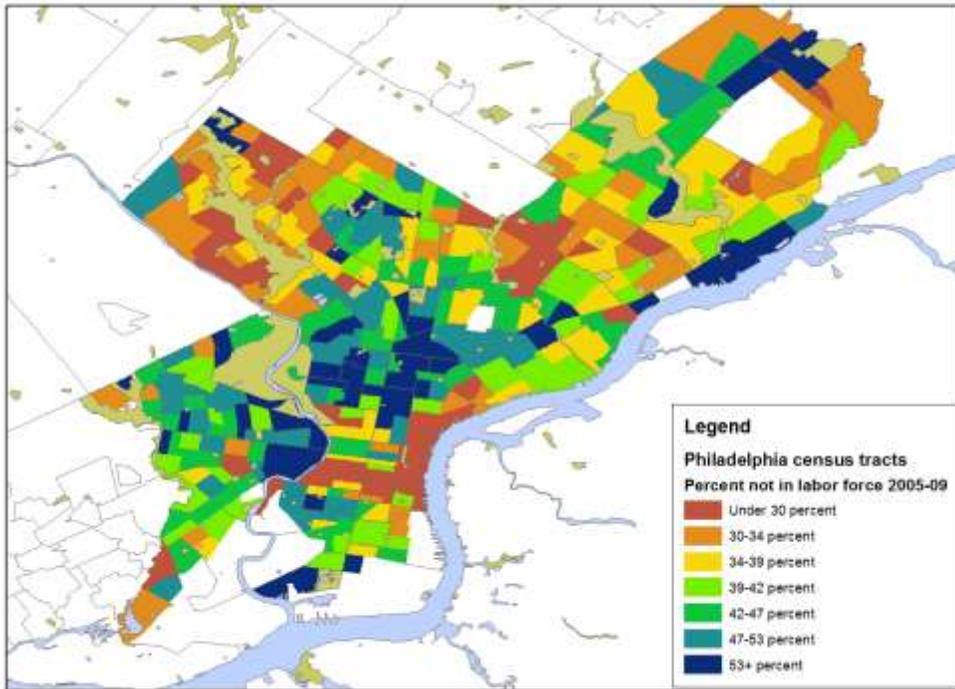
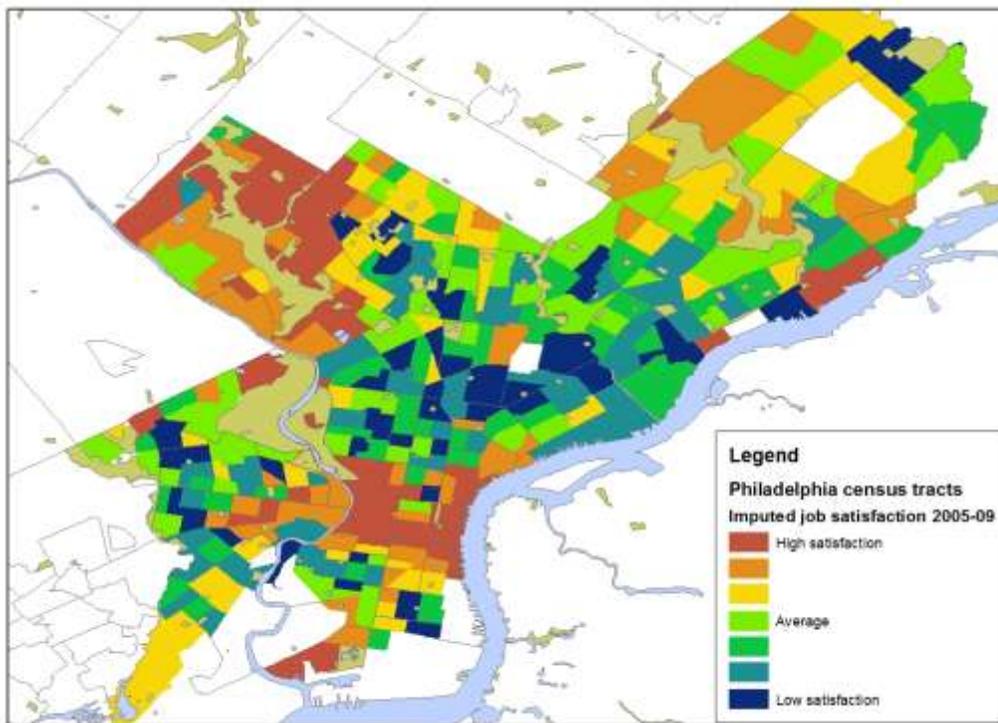


Figure 1-6. Imputed job satisfaction among working adults, Philadelphia census tracts 2005-09



Income, educational attainment, and employment/job satisfaction share a number of characteristics. First, in most respects, they are difficult to separate conceptually. Educational attainment “causes” higher labor force participation that in turn “causes” higher income. Or, just as plausibly, higher income provides the opportunity for higher educational attainment. Second, they share a clear spatial profile, with the same neighborhoods having high and low scores on each of these. This impression is confirmed by the correlation coefficients between the three variables—ranging from .73 to .81—underlining their strong association.

Table 1-7. Labor force participation, educational attainment, and income—correlations

Pearson Correlation			
	High labor force participation	Educational attainment	Income
High labor force participation	1	.797**	.728**
Educational attainment	.797**	1	.814**
Income	.728**	.814**	1

** Correlation is significant at the 0.01 level (2-tailed).

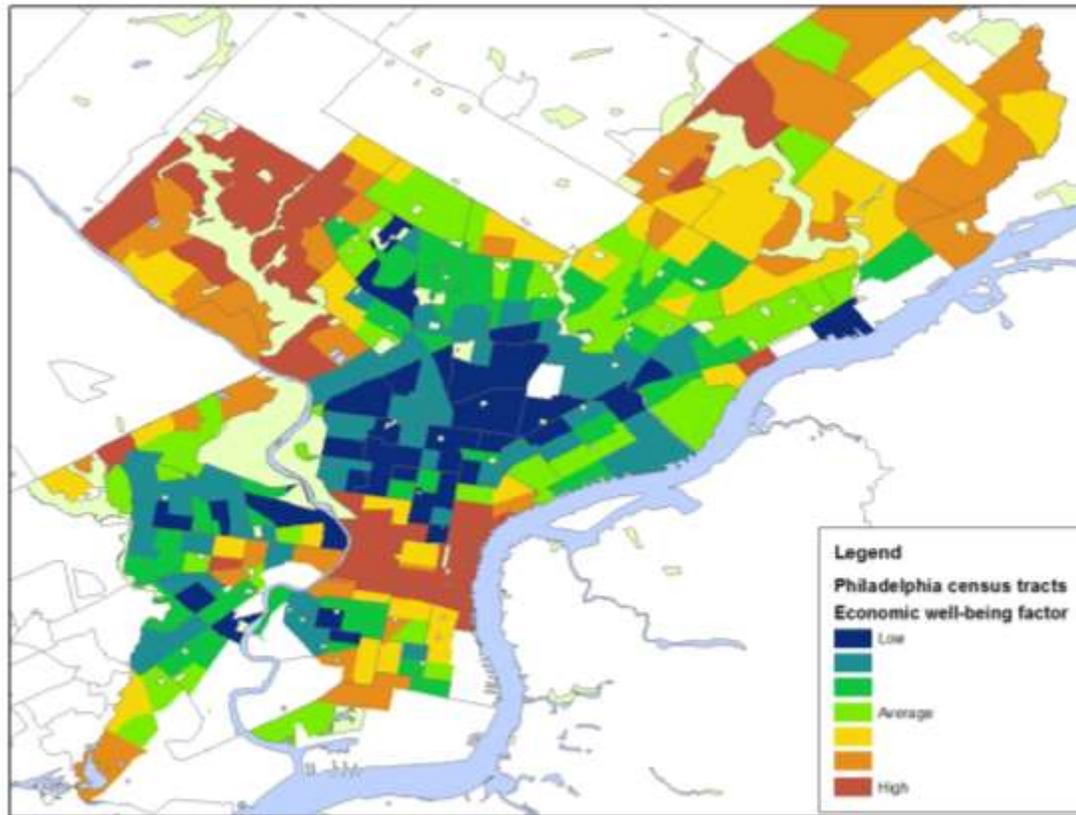
As a result, we decided to collapse income, educational attainment, and high labor force participation into a single **economic wellbeing factor**. By conducting a factor analysis that incorporated the major variables from the three original factors, a single factor emerged that explained 69 percent of the variance. The final analysis included five income variables, four for work activity and one for educational attainment. The factor loaded heavily on all 10 variables, with component scores between .619 and .940.

Table 1-8. Economic wellbeing factor, component variables

Variable	Factor score
Median household income	0.882
Median family income	0.940
Per capita income	0.918
Poverty rate	-0.778
Percent of households with interest, dividend, or rental income	0.865
Unemployment rate	-0.755
Labor force participation	0.619
Job satisfaction	-0.827
Full-time income less than \$30,000	-0.821
Percent with BA degree or more	0.839

The map of economic wellbeing reflects the geography of income, educational attainment, and labor force participation. Given that the purpose of developing a multi-dimensional index of wellbeing is to move beyond a simple economic definition, it makes sense to condense these economic elements into a single dimension.

Figure 1-9. Economic wellbeing factor, Philadelphia census tracts 2005-09



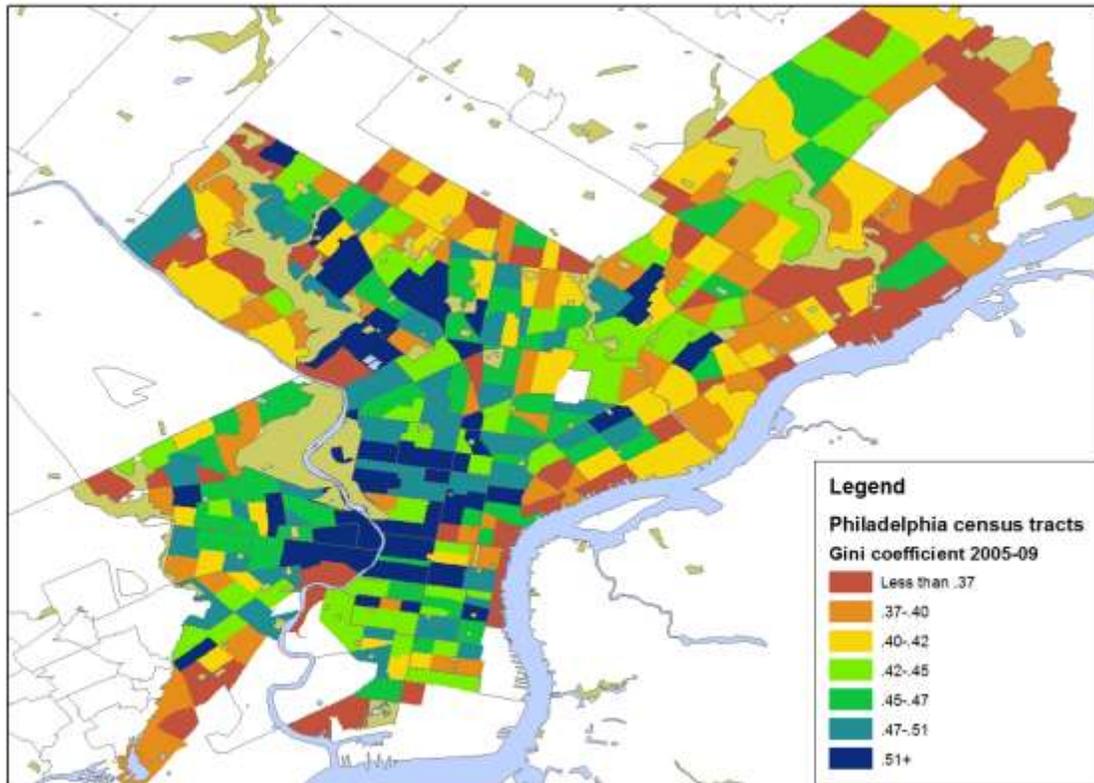
Economic diversity

Creating a single economic wellbeing sub-index left us with two remaining economic and educational elements to analyze: economic diversity (Gini coefficient) and current efficiency of schools.

The Gini coefficient raises an interesting conceptual issue. Generally it is used to measure the unequal distribution of income within a population, very often at the national level. When we take this measure down to a census tract, however, its meaning changes dramatically. Instead of income inequality—which in Philadelphia is primarily a function of cross-tract comparisons—the Gini coefficient actually measures the *diversity of income* within a tract. We can imagine two tracts with a similar income profile. In one, most households are clustered around the tract average, while in the other household incomes are more dispersed.

In contrast to our previous analysis, economic diversity highlights different parts of the city. The most economically diverse sections of the city include some of the richest, like Center City West and University City, and some of the poorest, including Germantown and North Philadelphia-West. The most economically homogenous sections of the city are concentrated in the far Northeast.

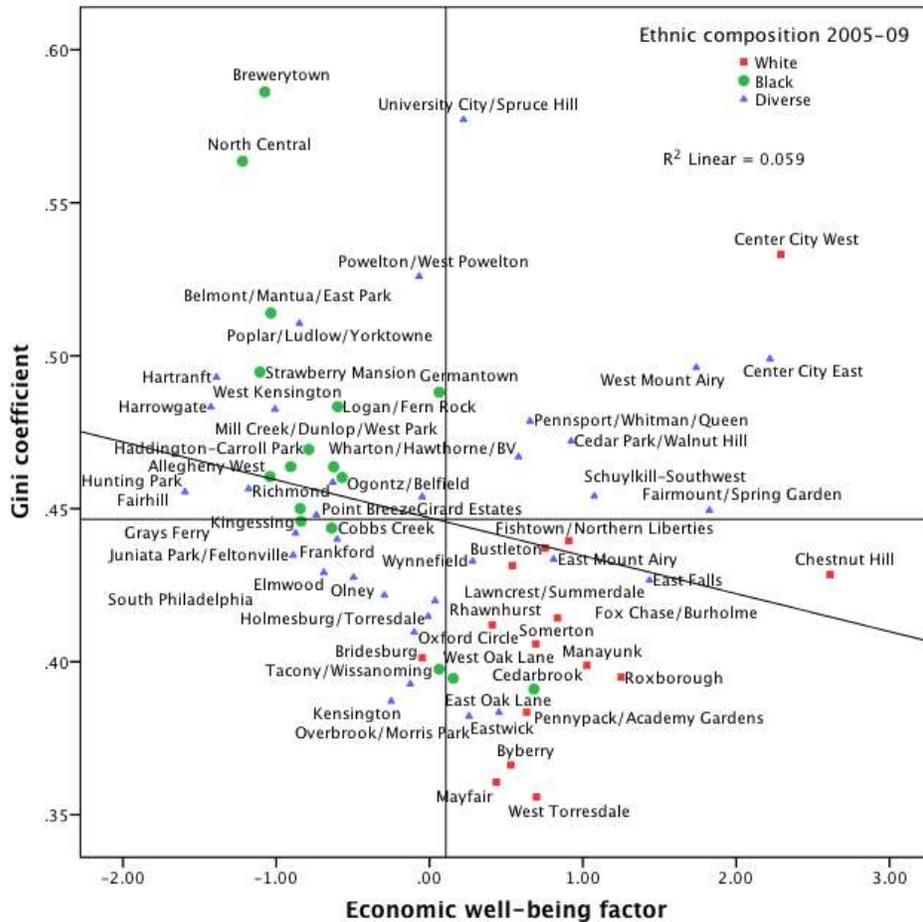
Figure 1-10. Economic diversity (Gini coefficient), Philadelphia census tracts 2005-09



Economic diversity has very little correlation with the economic wellbeing dimension, but viewing the two at the same time highlights a distinctive ethnic pattern. African American neighborhoods in Philadelphia, for the most part, have relatively low economic wellbeing—as we would expect given rates of poverty and median income—but rather high economic diversity. Historically, African Americans have faced severe residential segregation. This restricted mobility meant that segregated African American communities were likely to be economically diverse, because higher-income residents were unwelcome outside of homogeneous black neighborhoods. This historical pattern has been reinforced by public policy. A high proportion of black workers are public employees, of which many are required to live in the city. Together these two patterns have reinforced the economic diversity of black neighborhoods. White neighborhoods, by contrast, have above average incomes but are more economically homogeneous.

Diverse neighborhoods cluster at two extremes of the distribution. Many—like West Mount Airy and Pennsport—combine high economic wellbeing with economic diversity. Others, particularly areas many with large Latino populations—like Kensington and Oxford Circle—have low scores on both sub-indexes.

Figure 1-11. Scatterplot of economic diversity (Gini coefficient) by economic wellbeing, Philadelphia neighborhoods 2005-09



School effectiveness

Measuring the current effectiveness of public schools presents a number of methodological and conceptual problems. At the individual level, we might see school quality as measured by the “inputs” of the educational process (like teachers, other staff, books, or facilities) and “outputs” (like test scores). As we shift to the neighborhood level, however, measurement grows more complicated. Are we interested primarily in the specific educational opportunities that children enjoy in their neighborhood or are we interested in the “neighborhood effect” that all residents might enjoy by having a good local school?

These conceptual issues are complicated by data limitations. We have data from the census on school attendance, so we can identify sections of the city with a high proportion of private school attendees and early school-leavers (dropouts). But the data on student achievement is more open to interpretation. The most comprehensive data are associated with standardized scores on state-mandated tests, but use of test scores is complicated by patterns of school attendance. First, Philadelphia has had a historically high rate of private school attendance, and that rate has increased in recent decades. Second, although the city still has neighborhood schools, a large proportion of students attend a school outside their neighborhood. This is especially the case for high school.

Ideally, we'd like to be able to aggregate test scores in two ways: for the area in which the school is located and for the area in which the student lives. The first figure would measure the *neighborhood effect of a school*, that is, how having a good school in your neighborhood functions as an externality. The second figure would allow us to aggregate the individual benefits of an effective education. Unfortunately, our available data on average school scores provide information only on the first of these measures.

Our sub-index of school effectiveness combined two approaches. First, we transferred the 2010 proficiency math and verbal scores of each elementary school to all of the census tracts in its catchment area. In cases where the tract included parts of two or more school catchment areas, we used a weighted average based on the percent of the tract that was in a particular catchment area. Second, we calculated the distance that each child in the city would have to travel to reach an effective school. This calculation took into consideration the age of children in each census block and their appropriate grade in determining the closest school. The factor analysis also included the percent of school-aged children in private schools and the zip code's truancy rate.¹¹

The resulting analysis produced a single factor that explained 65 percent of the variance in all of the variables. Factor loadings were all .68 or greater.

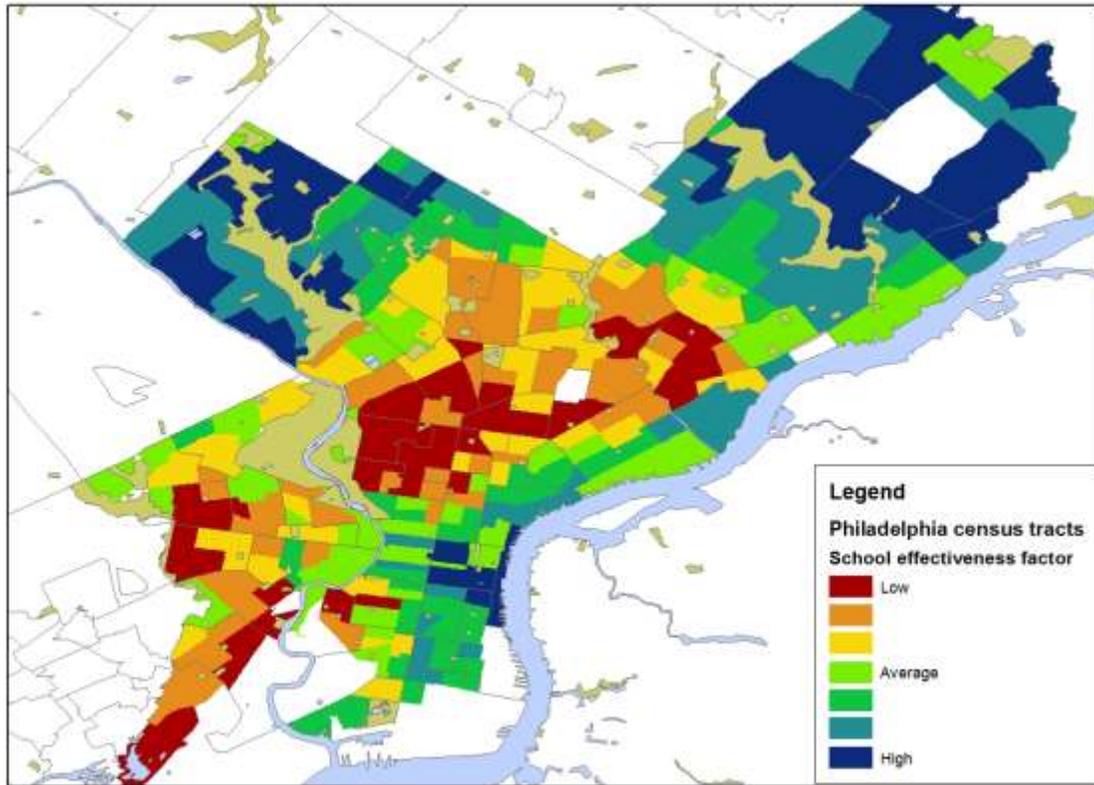
Table 1-12. School effectiveness factor, component variables

Variable	Factor score
Percent of school children in private school	0.723
Math proficiency 2010	-0.873
Reading proficiency 2010	-0.915
Truancy rate (zip code)	0.814
Average distance to effective elementary school	0.682

¹¹ We also considered including the percent of 16-19 year olds neither in school nor possessing a high-school diploma, but the distribution was uncorrelated with the other variables in the analysis.

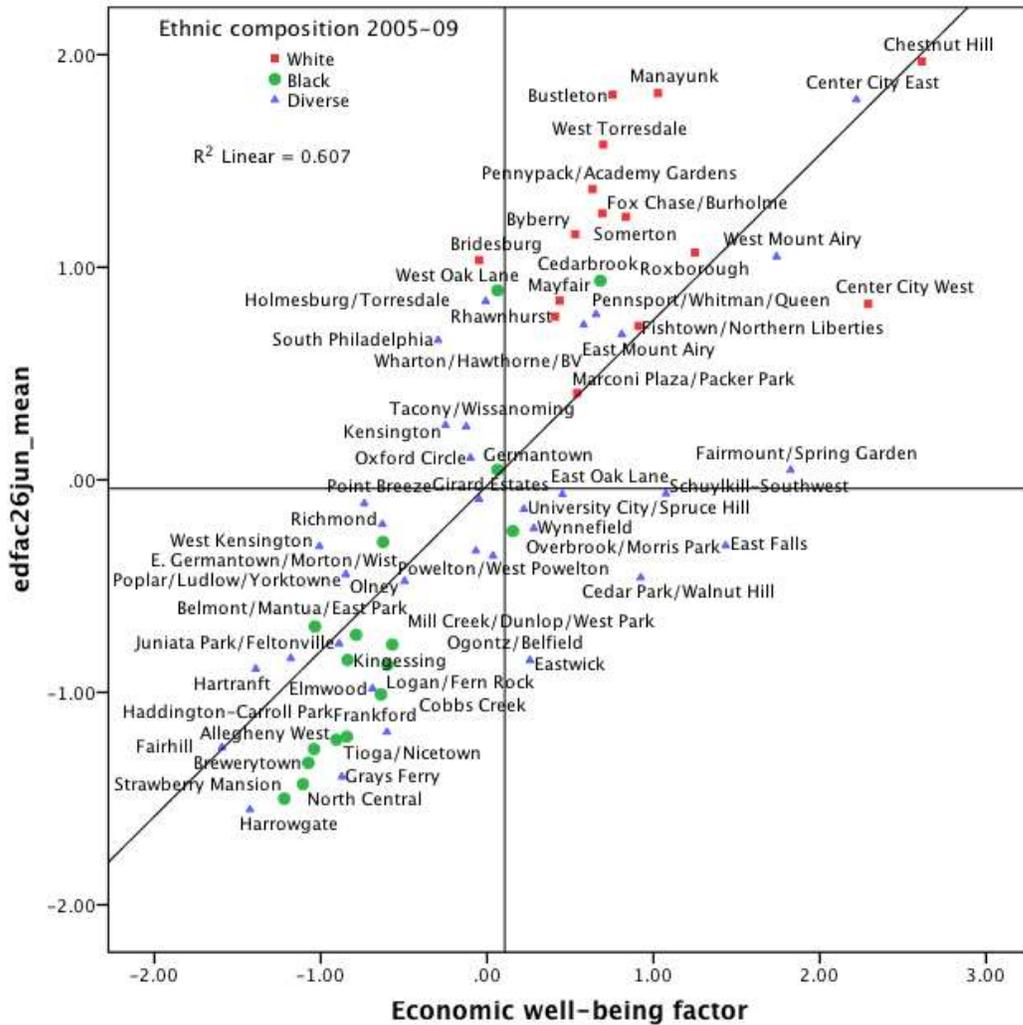
The spatial distribution of the factor, shown on the map below, suggests a correlation between the school effectiveness factor and economic wellbeing. Again, sections of West and North Philadelphia had the lowest scores on this sub-index, while Center City and the Northeast and Northwest had higher scores.

Figure 1-13. School effectiveness factor, Philadelphia census tracts 2005-09



A scatterplot by neighborhood confirms the finding of a strong relationship between school effectiveness and economic wellbeing. Again we see a familiar pattern with African American neighborhoods having below average scores on both variables; white neighborhoods having above average scores on both; and diverse neighborhoods bifurcating, with those in and around Center City looking more like white neighborhoods and those farther from Center City (and often with larger Hispanic populations) having low scores on both.

Figure 1-14. Scatterplot of school effectiveness by economic wellbeing, Philadelphia neighborhoods 2005-09



Social connection

Economic inequality exerts a strong influence on social wellbeing. Yet, our working hypothesis is that other dimensions of wellbeing vary in their association with economic status. A leading “usual suspect” for an alternative to economic status is “social capital,” the extent to which social networks are a resource that individuals and groups can use in pursuing their interests. The past decade has seen a veritable explosion in scholarship on social capital, which has tended to multiply the conceptualizations and methodologies for measuring it.

One reason for this interest and contestation is that the question of social networks and the relationship of individuals to one another go to the heart of the study of society for the past two centuries. For the classical sociologists of the 19th century, like Emile

Durkheim and Ferdinand Tonnies, the rise of urbanism, capitalism, and their attendant social mobility posed a serious threat to the nature of social order. How could a stable, hierarchical social order maintain itself in the face of social change? Durkheim suggested that the *mechanical solidarity* of traditional social orders gave way to a less-effective *organic solidarity* in which social order is maintained through individuals' and groups' dependence on one another. Tonnies made a similar distinction between *gemeinschaft* and *gesellschaft* (usually translated as *community* and *society*). For Tonnies, as with Durkheim, the division of labor and increasing complexity and mobility of social interactions led to a society more dependent on formal *roles* than on face-to-face interactions.

In the 20th century, Louis Wirth incorporated these 19th century concerns into his discussion of "Urbanism as a Way of Life."¹² For Wirth, as with Durkheim, the complex, indirect social interactions of the city provided opportunity for the development of social pathologies, predatory relationships between individuals and groups, and the "blasé" stance of the urbanite. In response to Wirth, Claude Fischer suggested that cities did not obliterate the role of informal interaction. Rather, the proliferation of *subcultures*—made possible by the size and density of cities—provided a means through which urbanites could find their place in a mobile, complex social order.¹³

Culture and the arts can be seen as sitting uneasily on this historic divide. *Culture*, understood as a set of resources for making sense of the world that are reproduced by social groups, seems to find a home in the idea of social connection based face-to-face relationships. By contrast, *the arts* in a more modern sense fit better with the complex, individualized society based on formal interactions.

Our index of social connection started with a variety of variables that measure both aspects of social connections. From the American Community Survey, we were able to incorporate indicators of geographic mobility and stability, including where residents lived a year earlier, people who lived alone, and the proportion of households that were owner-occupied. The PHMC survey of community health provided a set of variables concerning social capital, including respondents' attitudes about whether neighbors worked together and helped one another, sense of belonging and trust, and levels of participation in local groups. The IRS master file of exempt organizations for 2011 provided data on the number of different types of nonprofits by neighborhood. Finally, data from Penn's Social Impact of the Arts Project (SIAP) provided a set of indicators of cultural engagement by neighborhood.

Originally we incorporated the SIAP data along with the other sources into a single analysis. Through our preliminary analyses, however, we discovered that this made it difficult to differentiate the unique contribution of the arts. As a result, we recalculated

¹² Louis Wirth, "Urbanism as a Way of Life," *American Journal of Sociology*, Vol 44, No 1 (July 1938): 1-24.

¹³ Claude S Fischer, "The Subcultural Theory of Urbanism: A Twentieth-Year Assessment," *American Journal of Sociology*, Vol 101, No 3 (November 1995): 543-77.

our social connection index excluding the cultural indicators and then calculated a separate cultural asset index for each census tract.

Non-arts indexes of social connection

The analysis of social connection produced two factors that together explained 48 percent of the variance in 14 variables. The first factor—which we characterize as *institutional connection*—loaded heavily on measures of concentration of nonprofits, including neighborhood improvement organizations, recreational organizations, and youth-focused groups.¹⁴ In addition, this factor had high loadings for measures of neighborhood instability, like lived outside of Pennsylvania a year earlier and low concentration of homeowners. It was correlated as well with the concentration of community gardens in the neighborhood. The second factor—which we call *face-to-face connection*—loaded on measures of social capital, including neighbors’ willingness to work or help one another, participation in local groups, and measures of trust and belonging (higher score represents lower trust or sense of belonging). Recreational and youth-oriented organizations also influenced this factor, although not as strongly as they did the institutional factor.

Table 1-15. Social connection factors, institutional connection and face-to-face connection

Variable	Institutional connection	Face-to-face connection
Lived in same house previous year	-0.739	
Neighbors work together		0.278
Neighbors willing to help often/always	-0.218	0.725
Participate in any groups		0.685
Av groups participate	0.238	0.691
Av trust score		-0.795
Av belonging score		-0.770
Percent owner occupied	-0.672	0.361
Lived in different state or abroad	0.760	
Neighborhood improvement organizations	0.732	
Recreational organizations	0.609	0.279
Youth-oriented organizations	0.669	
Social and fraternal organizations	0.525	0.246
Community gardens within 1/4 mile	0.292	-0.322

¹⁴ Because nonprofits are so heavily concentrated in Center City, we used a log transformation to reduce the skewness of the distribution.

Arts indexes of social connection

The arts indexes were analyzed separately. One index—the cultural resource index (CRI)—included SIAP’s data on nonprofit organizations, commercial enterprises, and resident artists. The second index—the cultural asset index (CAI)—included these resources as well as the concentration of cultural participants derived from the Greater Philadelphia Cultural Alliance’s cultural list cooperative.¹⁵ For some analyses, we examined the cultural participation rate separately.

All social connection sub-indexes

The results of these analyses were two measures of social connection that excluded the arts—institutional connection and face-to-face connection—and three arts measures—CAI, CRI, and cultural participation. As Table 1-16 shows, there were strong correlations among these five variables. The two social connection sub-indexes were defined as uncorrelated by the factor analysis. The institutional connection sub-index had strong correlations with all three cultural indicators. The face-to-face sub-index had a moderate correlation with cultural participation but weak correlations with the other two cultural indexes.

Table 1-16. Social connection sub-indexes—correlations among five variables

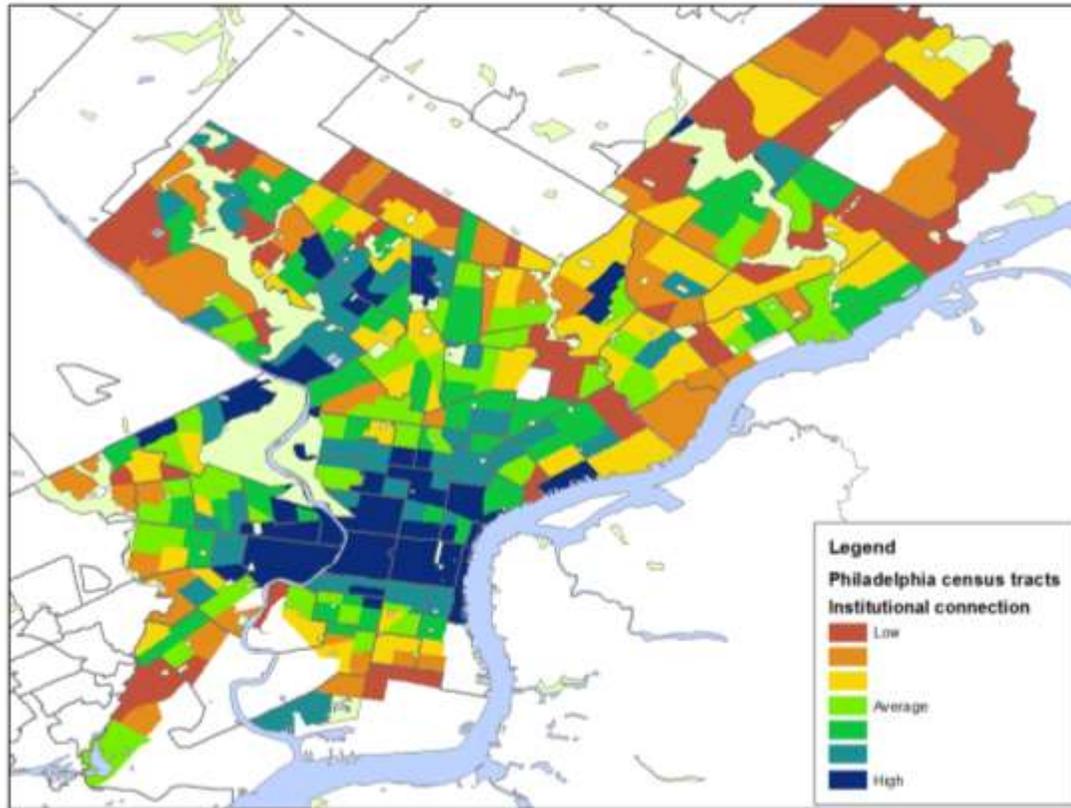
Pearson Correlation

Variables	Institutional connection jun13	Face-to-face connection jun13	Cultural participants per 1000 households 2010	Cultural asset index 2010 (tract)	Tract level CRI (five factors)
Institutional connection jun13	1.000	.006	.630	.688	.647
Face-to-face connection jun13	.006	1.000	.421	.252	.167
Cultural participants per 1000 households 2010	.630	.421	1.000	.808	.699
Cultural asset index 2010 (tract)	.688	.252	.808	1.000	.947
Tract level CRI (five factors)	.647	.167	.699	.947	1.000

¹⁵ The CAI was originally calculated for the city’s block groups. These values were then aggregated using a weighted (for population) average for each tract. The CRI was a product of a factor analysis using tract values for the relevant variables. For the block group analysis, we included both the number of resources in a block group and the number within a quarter mile of the block group. For the CRI analysis, we used only the number of resources within the tract.

The spatial distribution of institutional connection highlights the neighborhoods in and around Center City as well as concentrations along City Line Avenue in West Philadelphia and in the River Wards to the north and east of Center City. Germantown and lower Mt. Airy also showed concentrations. Neighborhoods near the boundaries of the city in the Northeast, Chestnut Hill, Roxborough, and South and Southwest Philadelphia were weakest on this measure.

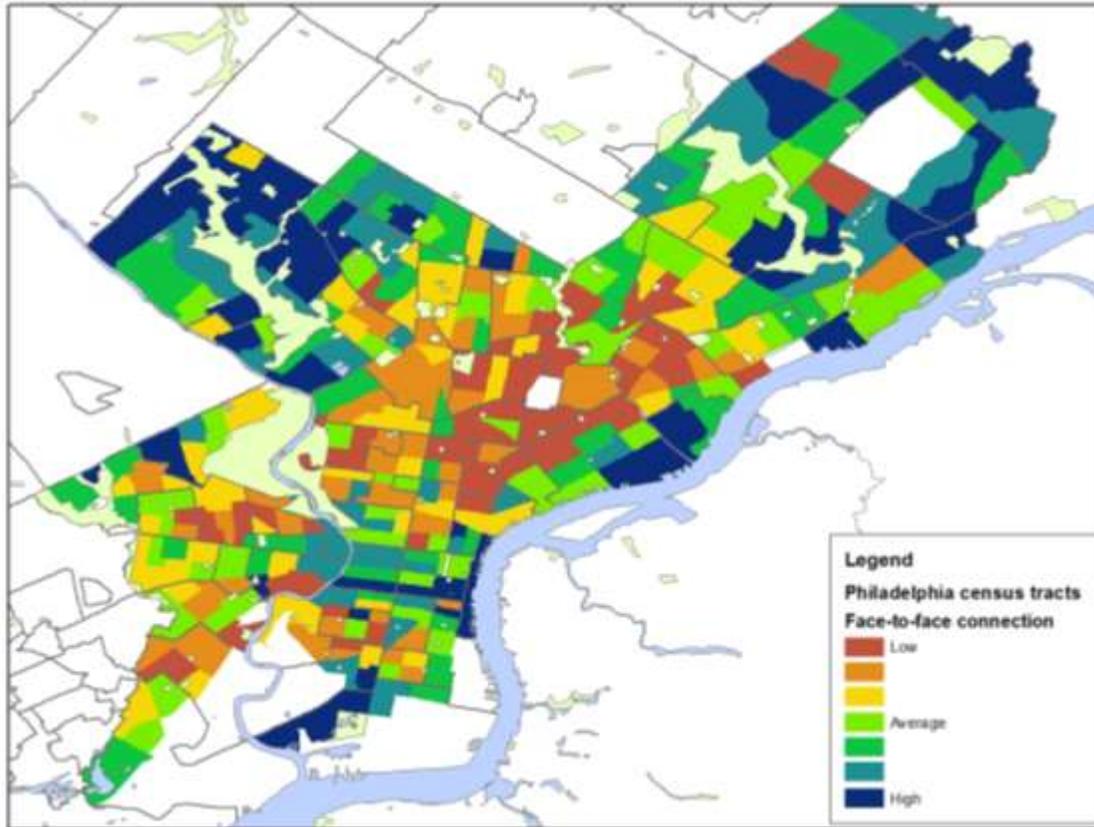
Figure 1-17. Institutional connection, Philadelphia census tracts 2005-09



Institutional and face-to-face connection

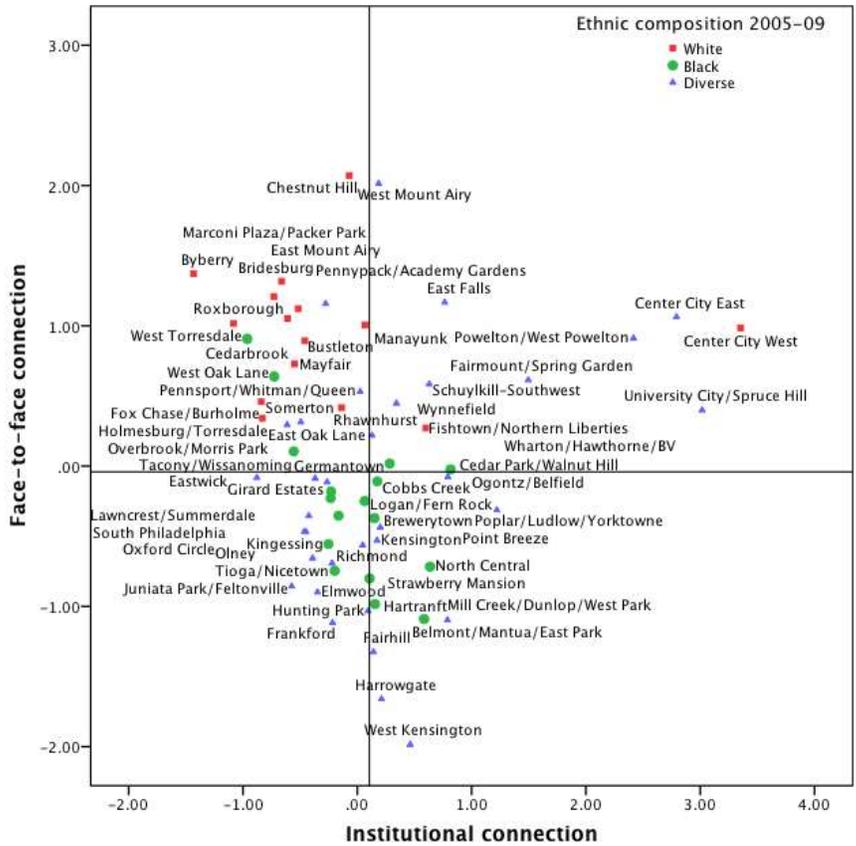
The face-to-face sub-index identifies neighborhoods in the Northeast and Northwest, as well as part of Center City, as having high scores on face-to-face interaction. North Philadelphia, which had moderate scores on institutional connection, had very low scores on face-to-face connection.

Figure 1-18. Face-to-face connection, Philadelphia census tracts 2005-09



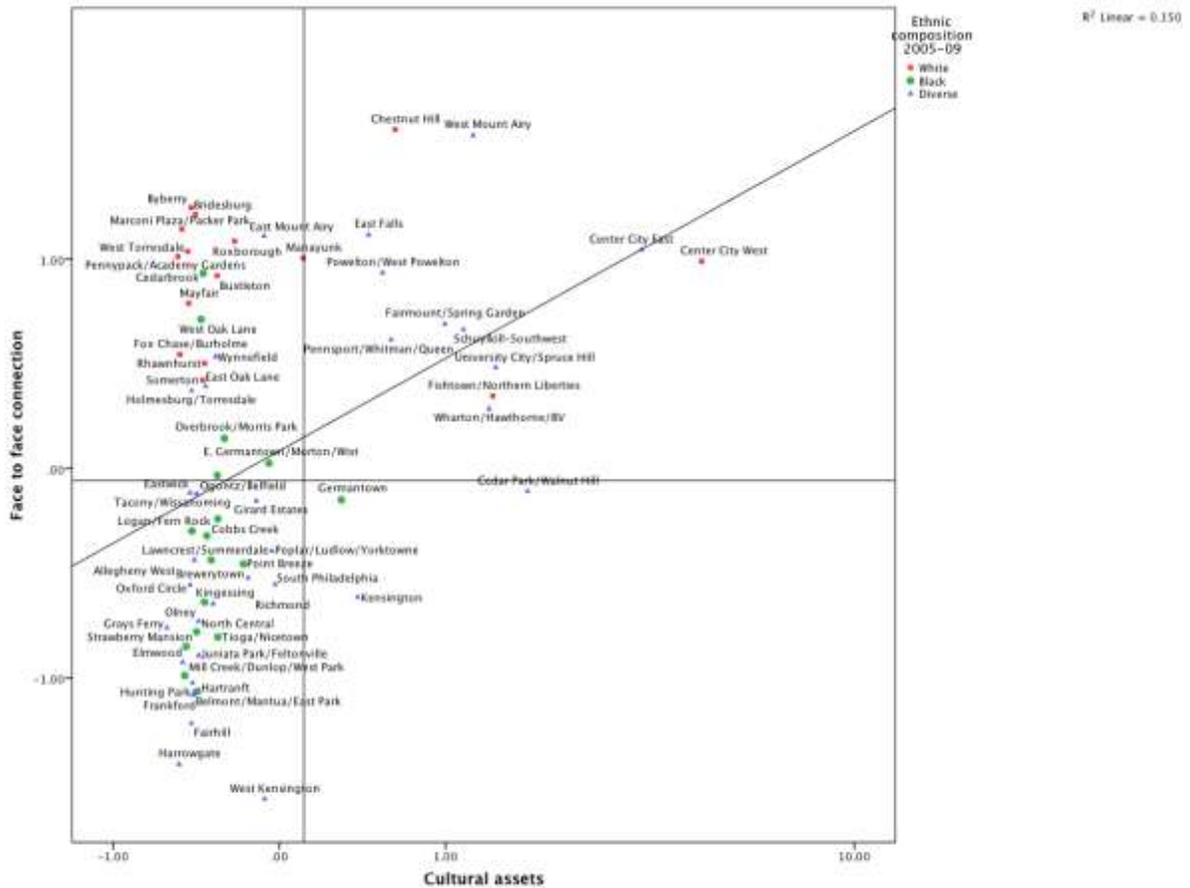
A scatterplot of the two variables by ethnicity demonstrates that predominantly black and predominantly white neighborhoods both scored below average on the institutional connection sub-index. However, predominantly white neighborhoods had above average values for face-to-face connection, while predominantly black neighborhoods tended to be low on both sub-indexes. Most of the neighborhoods that were strong on both indexes were ethnically diverse, typically in or around Center City, although a number of diverse neighborhoods with significant Latino populations scored below average on both sub-indexes.

Figure 1-19. Scatterplot of face-to-face connection by institutional connection, Philadelphia neighborhoods 2005-09



As noted above, the institutional connection and cultural resource indexes are strongly correlated. As confirmed by the scatterplot, diverse neighborhoods that are strong in institutional connections also score high on cultural resources. Similarly, most black and white neighborhoods have low scores on both.

Figure 1-20. Scatterplot of face-to-face connection by cultural asset index, Philadelphia neighborhoods 2005-09



Housing

Adequate shelter is an essential element of wellbeing. The Sen/Stiglitz commission incorporated housing into their measure of personal activity, but we decided to split it out as its own dimension.

Although there is little debate that housing is an element of wellbeing, exactly what aspects of housing matter is less clear. Historically, housing represented a relatively small share of family income; but over the past half century, it has emerged as the largest item in most families' budgets. Yet, the financial aspect of housing is only one of many ways that it influences wellbeing. The adequacy and quality of housing as shelter directly affect one's welfare. A common response to economic scarcity, for example, by an individual or family is to reduce the *amount* of housing acquired, which can lead to *overcrowding*. Likewise, many households occupy substandard structures or endure deferred maintenance as a strategy to reduce their cost of living.

Available data on housing wellbeing is concentrated disproportionately on its financial aspects. In particular, the share of income devoted to housing acquisition is the clearest

indicator of the financial stress faced by a household. For owner-occupied households, the threats posed by foreclosure are also relevant. The number of Act 91 filings and an estimated percent of owners who are “underwater”—that is, the estimated value of their house is less than the amount they owe—provide measures of this risk. To measure overcrowding, we relied on census data on the number of occupants per room within households. Our measure of quality of housing relies on the number of violations identified by the City’s department of licenses and inspections and the vacancy rate in the census tract.

The housing analysis produced a single factor that explains 35 percent of the variance in the variables in the analysis. The factor loads most strongly on vacancy rates, housing violations, foreclosure risks, and overcrowding. It provides an accurate portrait, as well, of sections of the city in which the highest proportion of households are paying over 50 percent of their income for housing.

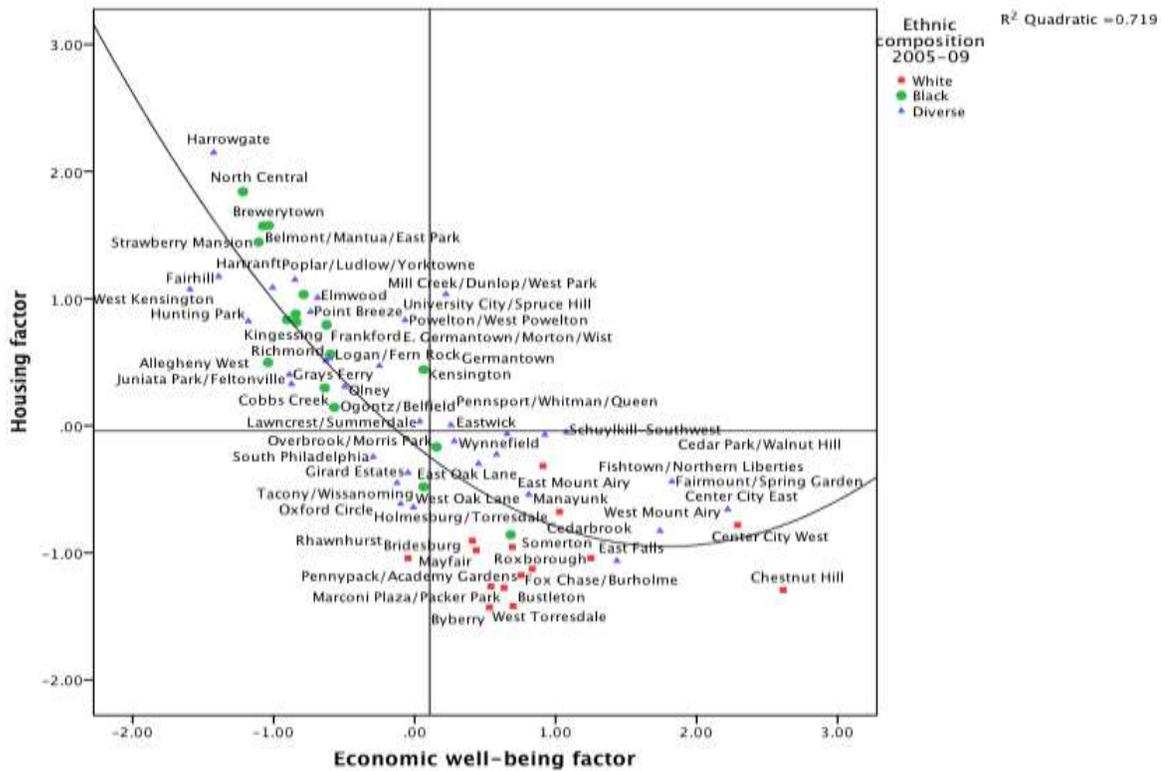
Table 1-21. Housing problems factor, component variables

Variable	Factor score
Vacancy rate (USPS)	0.764
Reported housing violations	0.776
Act 91 percent	0.451
Percent "underwater"	0.610
Percent owner-occupied	-0.549
Percent of renters paying more than 50 percent of income for housing	0.337
Percent of owners with mortgage paying more than 50 percent	0.312
Occupants per room over 1.5	0.419
Occupants per room over 1.00	0.583
Percent with conventional mortgage	-0.213

One consequence of the emphasis of our housing dimension on the financial aspects of housing is that the final factor is highly correlated with our economic wellbeing factor, with an r-square of .62. African American and diverse/Latino neighborhoods have the lowest scores on economic wellbeing and the highest score on housing problems, while the city’s white neighborhoods are at the other end of the spectrum. However, as the scatterplot suggests, the relationship is not all together linear. In fact, many of the city’s

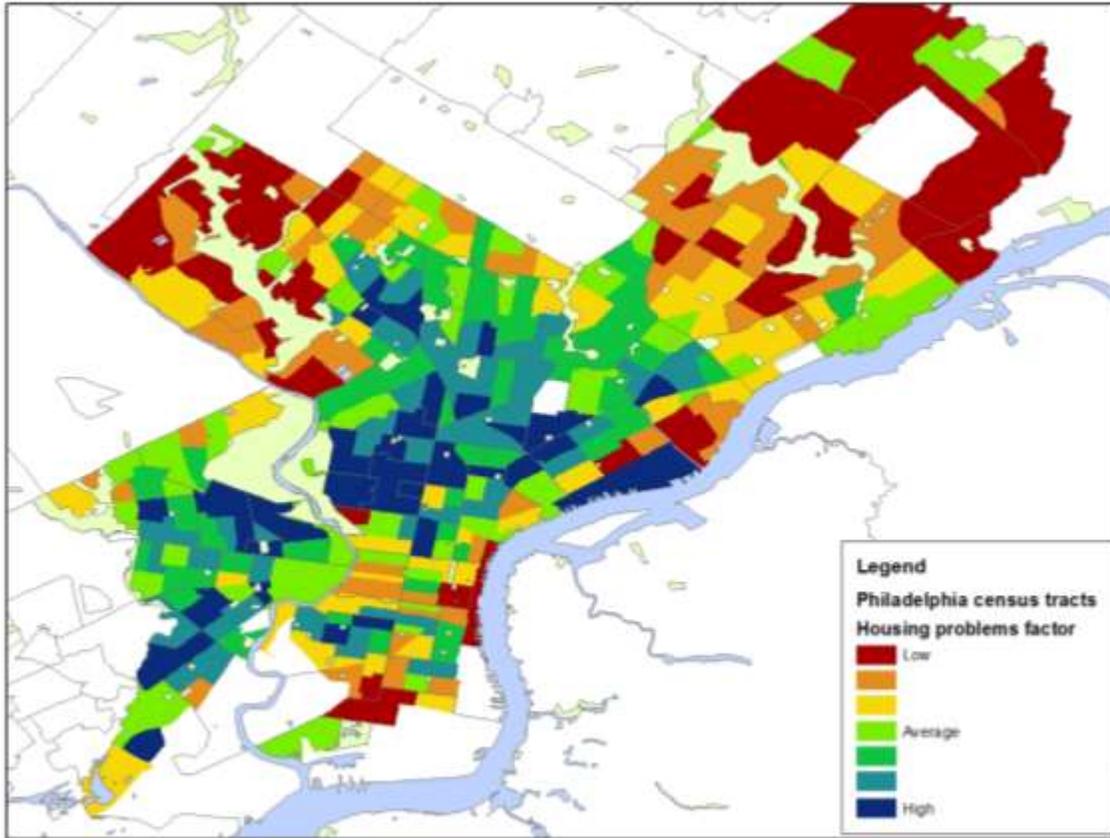
more prosperous areas have housing scores that are worse than those of some average economic wellbeing sections, likely a result of the challenge of buying and renting in these desirable neighborhoods.

Figure 1-22. Scatterplot of housing problems factor by economic wellbeing, Philadelphia neighborhoods 2005-09



As this scatterplot would lead us to expect, the map (below) of housing wellbeing looks much like those we've already encountered. The only divergence from the economic wellbeing map occurs near Center City, where a number of census tracts that are economically strong have housing scores that are closer to the citywide average.

Figure 1-23. Housing problems factor, Philadelphia census tracts 2005-09



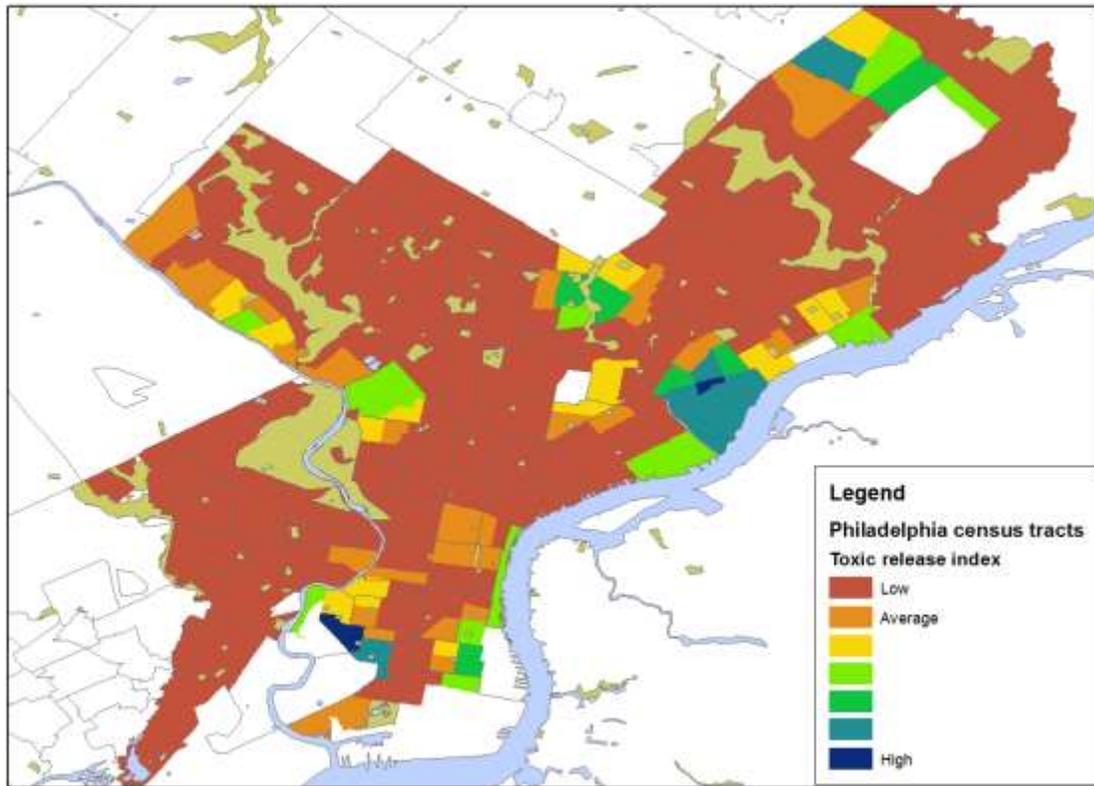
Environment

Environmental wellbeing takes on a different meaning at the local level than it does from a national perspective. Many ways that environmental factors vary across a nation or continent are irrelevant. Most natural disasters that hit Philadelphia will not have a significantly larger impact on one neighborhood than another, nor are the laws governing environmental hazards different in Mayfair or Eastwick.

However, a number of environmental conditions will affect one section of the city more than another. The concentration of environmental amenities like parks and trees will benefit particular neighborhoods. Similarly, toxic releases—at least those measured by the EPA—will adversely impact certain parts of the city.

Our preliminary environment analysis included data from the toxic release index (TRI) as well as data on flood plains, underground streams, location of parks, and concentration of trees and grass across the city. The TRI analysis produced a distinctive pattern of air quality associated with the refineries in Southwest Philadelphia and chemical plants in Bridesburg. Because the toxic release index identified only a few neighborhoods with significant risks, we did not include it in our final analysis.

Figure 1-24. Toxic release index, Philadelphia census tracts 2005-09



We conducted a factor analysis on the remaining variables. The resulting factor loaded positively on a variety of environmental amenities, including parks and concentration of trees and grass. It loaded negatively on underground streams, which are related to soil subsidence. Initially we were surprised that proximity to a flood plain also received a positive loading. However, further analysis revealed that Philadelphia's parks comprise a large share of the neighborhoods near a flood plain, which explained the high correlation of these two factors. As a result, we dropped the flood plain data from the final analysis.¹⁶

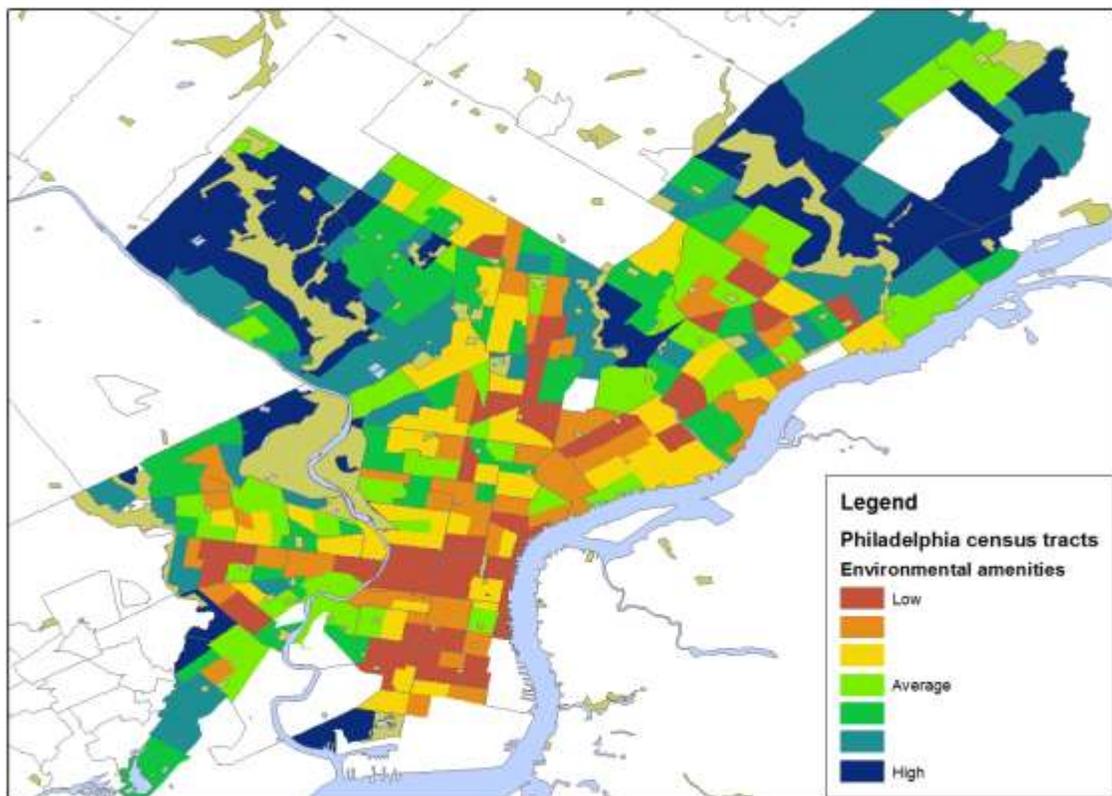
¹⁶ After we calculated this version of the environment sub-index, we decided to integrate data on thermal radiation, which will be included in future drafts of the paper. The heat data, it turns out, is strongly correlated with the concentration of trees in a census tract, so we anticipate that its inclusion will not make a large difference in the sub-index.

Table 1-25. Environmental amenities factor, component variables

Variable	Factor score
Underground streams	-.583
Parks	.690
Trees percent	.723
Grass percent	.768

The map of environmental amenities shows that Northwest Philadelphia—and, to a limited degree, parts of the Northeast—enjoy the highest concentration of these features. Center City and its surrounding neighborhoods, which have high scores on many other dimensions we’ve examined, suffer with respect to environmental amenities because of the high proportion of buildings and impervious surfaces.

Figure 1-26. Environmental amenities, Philadelphia census tracts 2005-09



As noted, several advantaged neighborhoods in the Northwest, like Chestnut Hill and West Mount Airy, have high levels of environmental amenities; while Center City and its surrounding neighborhoods have below average rankings on this sub-index.

Health

The health dimension of our index is perhaps our most complex set of indicators. First, it's the one domain for which the census has virtually no information. So we have relied on two local sources of data: the Philadelphia Health Department's vital statistics and the PHMC community health surveys. Second, the different elements of health are related to one another but not closely enough to justify reducing them to a single dimension.

As a result, we've ended up with three sub-indexes of health for Philadelphia: morbidity (the concentration of bad health), health access (measures of insurance and provider access), and social stress.

Morbidity

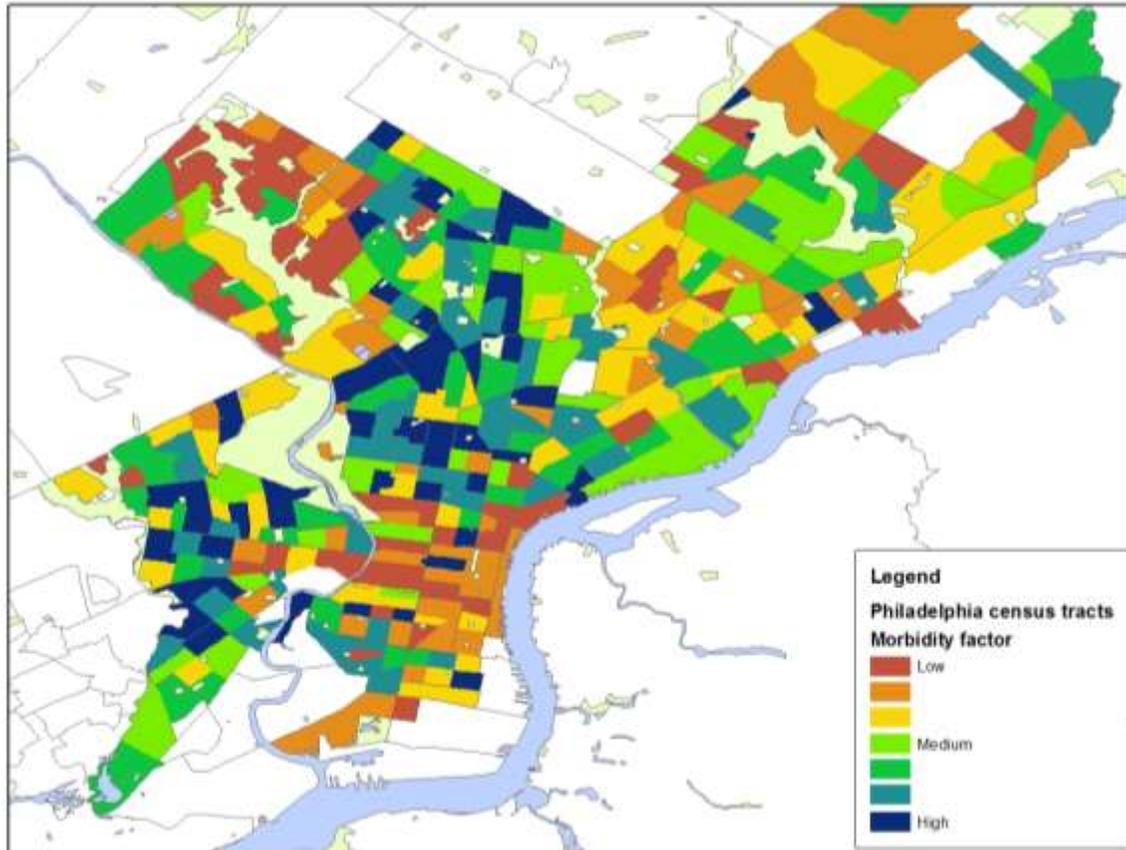
The PHMC community health survey provides a number of measures of the current health of respondents. Our analysis focused on six measures: proportion of respondents who reported a chronic condition, diabetes, hypertension, or obesity; whether respondent ever smoked; and body mass index. The principal component analysis explained 45 percent of the variance in the variables. The factor loaded heavily on all variables except whether the respondent had ever smoked.

Table 1-27. Health—morbidity factor, component variables

Variable	Factor score
	1
Percent reporting chronic condition 2006-08	.538
Ever had diabetes	.673
Ever smoked	.279
High blood pressure	.732
Obese	.789
Average BMI (Body Mass Index)	.838

The map of morbidity suggests a significant association of morbidity with economic wellbeing. Morbidity was also associated with the concentration of African Americans in a neighborhood, with even middle-income black neighborhoods having higher scores on this sub-index. The low-income neighborhoods in North and West Philadelphia exhibit the highest levels of morbidity, while residents of Center City and the Northwest are less likely to suffer bad health.

Figure 1-28. Morbidity factor, Philadelphia census tracts 2005-09



Health Access

The PHMC survey provides a number of measures of access, including whether the respondent has health insurance, whether he or she did not seek care or fill a prescription because of the cost, and several measures of emergency room utilization. Our factor analysis included five variables, and the single factor explained 51 percent of the variance in the five variables. The factor has strong negative loadings on the cost and ER measures and a positive loading on insurance.¹⁷

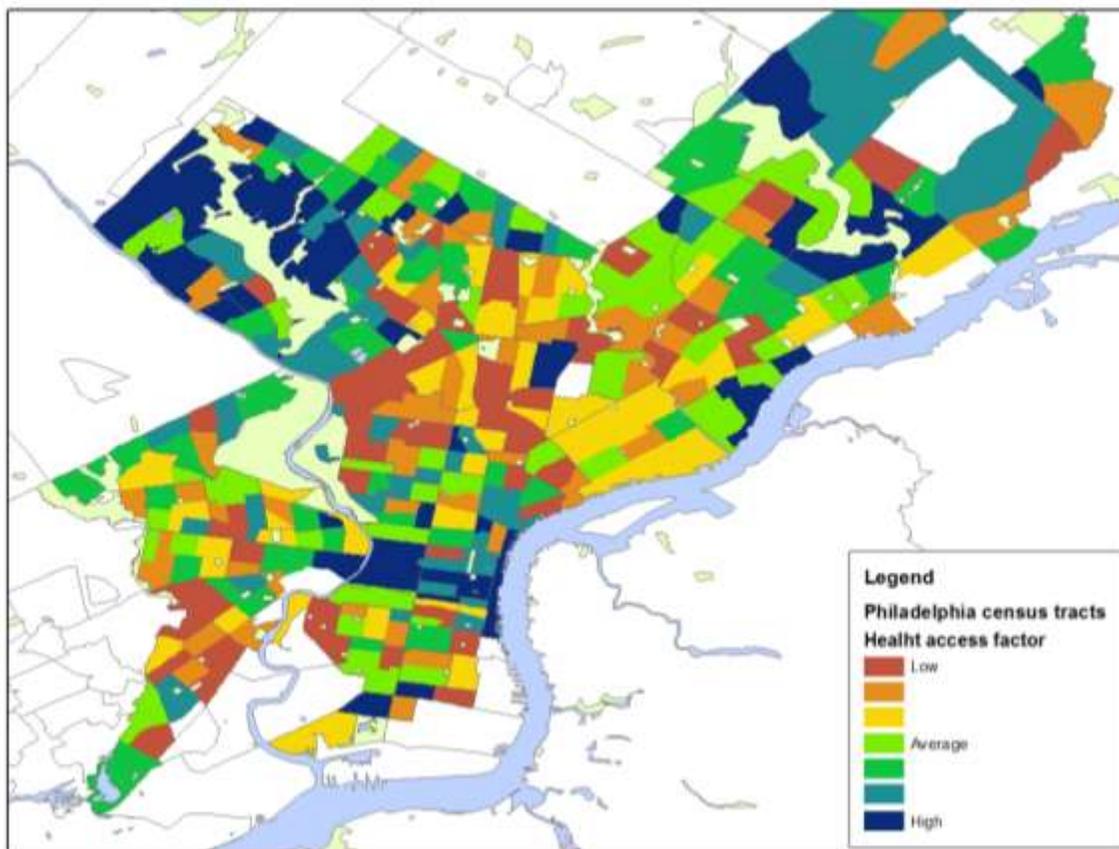
¹⁷ The original factor loaded positively on the bad health indicators. We inverted the scores so that a positive score indicates high levels of insurance and low levels of cost-induced behaviors and use of ER.

Table 1-29. Health access factor, component variables

Variable	Factor score
No care because of cost	-0.725
No RX because of cost	-0.783
Visits to ER	-0.741
Have insurance	0.570
Ever use ER	-0.745

The map of health access shows generally higher values—that is, better access—in much of Center City and Northwest Philadelphia. Neighborhoods around Center City, however, have much spottier indicators of health access, perhaps because of the large number of young adults who don't have health insurance or avoid going to the doctor. Our data predate the implementation of the Affordable Care Act, so this phenomenon may change over the next few years.

Figure 1-30. Health access factor, Philadelphia census tracts 2005-09



Social Stress

Four behavioral variables in our health database were very closely associated. Three are associated with pregnancy: teen birthrate, likelihood that a prospective mother would receive prenatal care, and proportion of low birthweight babies in a population. The fourth behavior—homicide death rate—was also highly correlated with the birth-related indicators. This factor shares many features with the *social stress index* proposed by Kennen Gross and Paul McDermott based on an earlier set of data.¹⁸

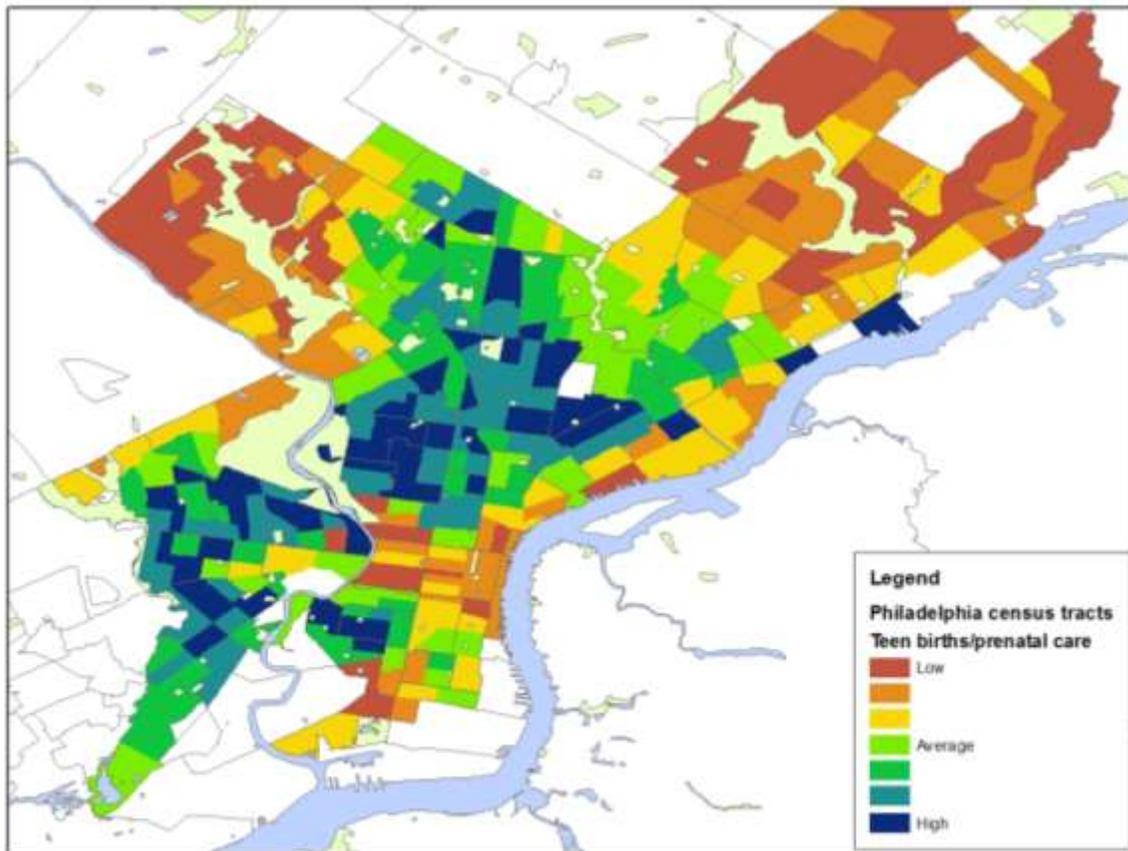
Table 1-31. Social stress factor, component variables

Variable	Factor score
Teen birth rate	0.820
Prenatal care percent	-0.866
Homicide rate	0.838
Low birthweight percent	0.783

This factor is notable in a number of ways. First, as we might expect, it is more closely related to very poor neighborhoods in Philadelphia. Moreover, it is more strongly related to the other health factors to emerge from the analysis—morbidity and access—with a Pearson’s *r* of .49 and -.49 respectively.

¹⁸ Gross, Kennen S. and Paul A. McDermott. 2009. “Use of City-Archival Data to Inform Dimensional Structure of Neighborhoods.” *Journal of Urban Health—Bulletin of the New York Academy of Medicine* 86 (2): 161-182. 2009doi: 10.1007/s11524-008-9322-7. We received data on reports of child abuse and neglect from the city too late to incorporate in this version of the index, but future versions will incorporate it.

Figure 1-32. Teen birth rate/lack of prenatal care, Philadelphia census tracts 2005-09



Security

The Sen/Stiglitz commission proposed that nations gather data on two dimensions of insecurity: protection against the vicissitudes of life and personal security. Obviously social protection, like unemployment or disability insurance, do not vary across the city of Philadelphia. Our analysis, therefore, focuses on personal security. In particular, we used data on reported crimes (serious personal and serious property) and incidents of interpersonal disputes—either intergroup conflicts or neighbor disputes—based on complaints to the Philadelphia Human Relations Commission.

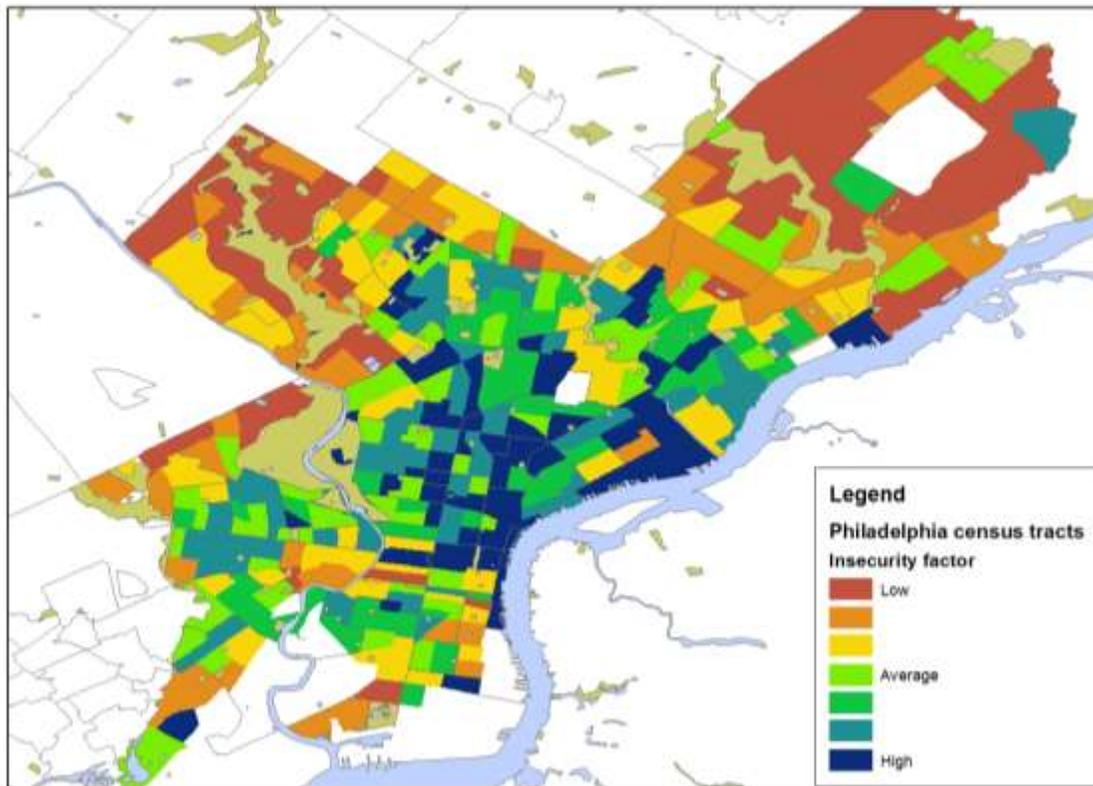
The security factor analysis included six variables: five measures of crime (serious personal, serious property, and all serious crimes) and total number of complaints to the Human Relations Commission for 2007-2009 and 2011. The factor loaded most strongly on the 2005-09 crime data and somewhat less on the 2006-10 data. The Human Relations data had a much weaker effect on the sub-index.

Table 1-33. Insecurity factor, component variables

Variable	Factor score
All serious crime rate 2005-09	0.893
Serious property crime rate 2005-09	0.864
Serious personal crime rate 2005-09	0.936
Human Relations complaints	0.507
Personal crime near tract 2006-10	0.778
Property crimes near tract 2006-10	0.829

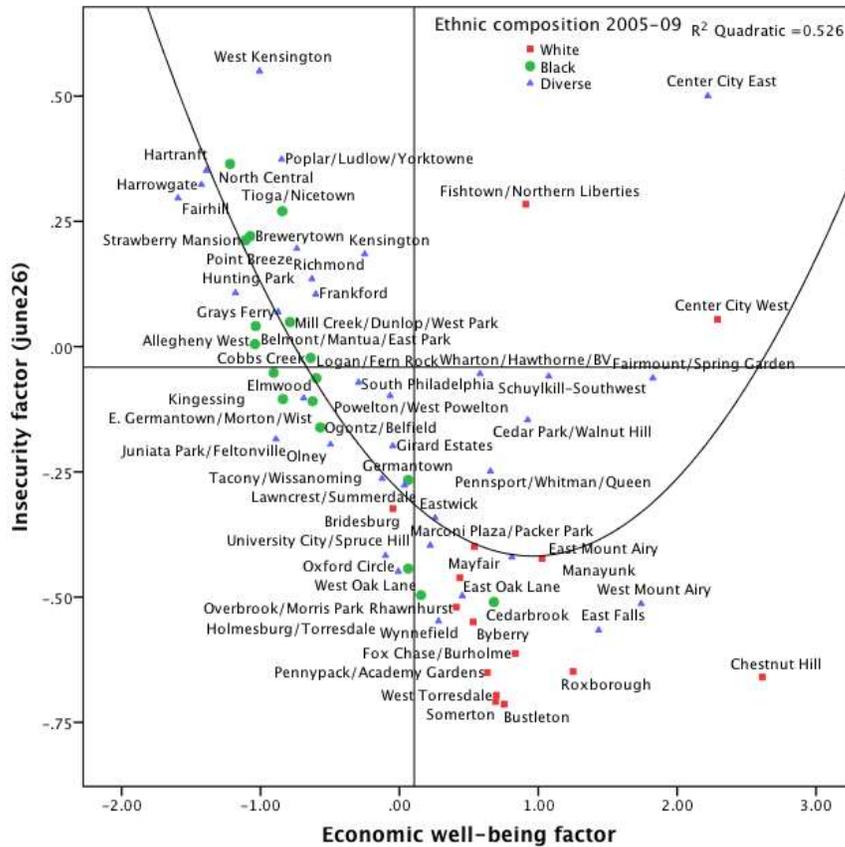
As we might suspect, crime rates are correlated to some extent with race and socio-economic status. Certainly, sections of North Philadelphia have high crime rates, but high rates are present as well in some areas in and around Center City that have higher socio-economic status.

Figure 1-34. Insecurity factor, Philadelphia census tracts 2005-09



This perception is confirmed by the scatterplot of insecurity against the economic wellbeing factor. Several poorer neighborhoods—including West Kensington, Poplar, and Hartranft—have high rates of insecurity, but so do Fishtown and Center City East. It’s also noteworthy that among African American neighborhoods, insecurity clearly declines with increased economic wellbeing, a pattern not seen in the rest of the city.

Figure 1-35. Scatterplot of insecurity factor by economic wellbeing, Philadelphia neighborhoods 2005-09

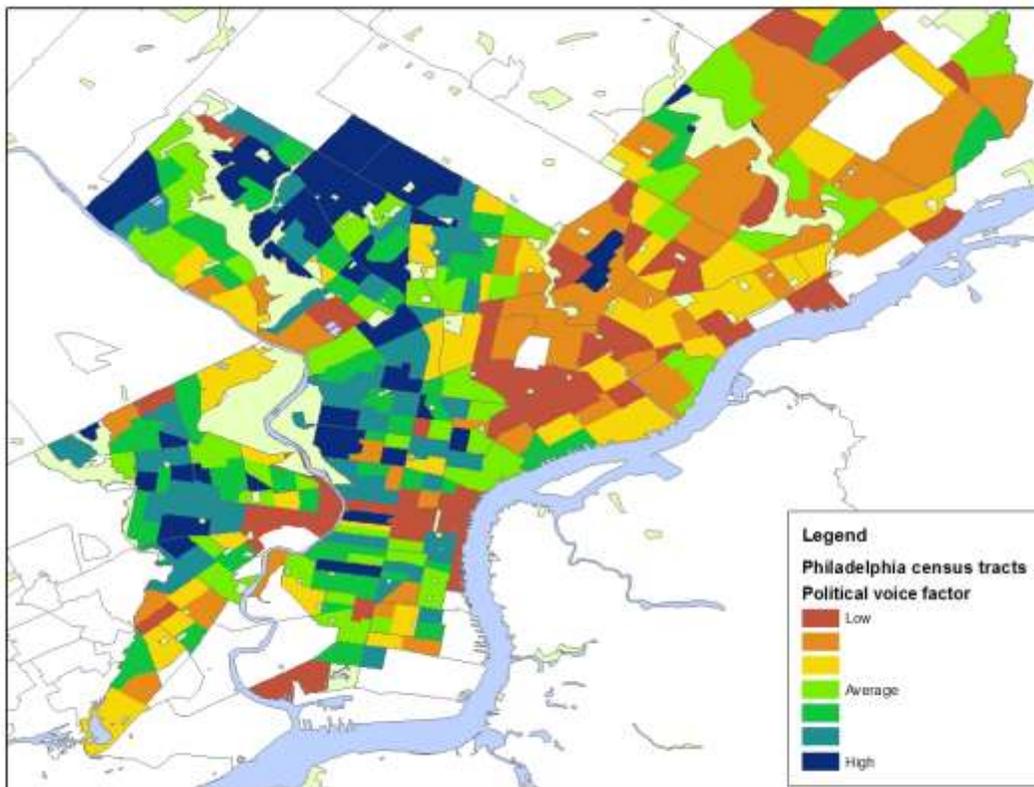


Political voice

Political voice is the least satisfying of the indexes that we’ve estimated as part of this project. First, there is a conceptual problem. Sen and Stiglitz, following the work of other capabilities approach writers, give great emphasis to freedom of expression and its abridgment through censorship and intimidation. Whatever we might say about the state of free expression, it certainly does not vary dramatically across the city of Philadelphia. Indeed, of the four dimensions of political voice mentioned by Sen and Stiglitz—institutional rights, discrimination, open political institutions, and civic participation—only civic participation might significantly vary across the city’s census tracts.

Second, we have a data challenge. The most obvious measure of civic engagement concerns voting: what proportion of the eligible population registered to vote, and what proportion of those registered actually voted. The first obstacle had to do with the nature of the data. Election data are gathered for the city's 1,684 voting divisions. Because election boundaries do not match census boundaries, we developed a complicated process to assign a voting division's numbers to each block in the district according to its population and then aggregated those totals for all of the blocks within each tract. We then calculated the number of eligible voters by aggregating census data on the number of US-born and naturalized citizens over the age of 18 within each tract.¹⁹ Unfortunately, when we combined these two sets of figures to calculate the percent of eligible voters who were registered, we discovered that 49 percent of the city's tracts reported a number of registered voters that exceeded the eligible voting population. This was particularly surprising because our estimate of eligible voters was clearly higher than the actual figure. We suspect that this discrepancy is a result of a failure to remove people from the rolls when they die or move. As a result, the total registration reported for Philadelphia (1.06 million) is only slightly lower than our estimate of eligible voters (1.08 million).

Figure 1-36. Political voice factor, Philadelphia census tracts 2005-09



¹⁹ This is a high estimate of eligible voters because many citizens have lost their right to vote due to their involvement in the criminal justice system.

The suspect registration figures mean that two possible indexes of voting—percent of eligible voters who are registered and percent of registered voters who actually vote—are also suspect. This leaves us with one measure of voting: the percent of eligible citizens who voted.

We conducted a factor analysis using this measure for two elections—the 2008 Presidential election and the 2007 mayoral primary.²⁰ The pattern of voting in the two did not vary much. As a result, the single factor explained 89 percent of the variance in the two elections and both variables had a factor loading of .945.

The spatial distribution of this factor diverged from the patterns we've seen in previous analyses. The Northeast and the Latino sections of North Philadelphia had the lowest vote total, while African American sections of the Northwest, West, and South Philadelphia had the highest proportion of voters.

Indeed, across the entire population, there was virtually no relationship between economic wellbeing and the political voice factor. One set of predominantly black neighborhoods (Brewerytown, West Oak Lane, Cedarbrook) and two diverse neighborhoods with large black populations (East and West Mount Airy) had the highest scores on this factor. In the rest of the city, it was difficult to discern many patterns. Among predominantly white neighborhoods, economic wellbeing seemed to make a difference; the r-square for these neighborhoods was .71. In black and diverse neighborhoods, the pattern was less clear.

Conclusion

This paper has outlined the rationale and procedures for development of a multi-dimensional index of social wellbeing for the city of Philadelphia and presented some initial findings of our analysis. Although the availability of data and fit with our conceptualization of wellbeing vary from one sub-index to another, overall the research team believes that the index has accomplished our goal of developing a means for examining the strengths and weaknesses of the city's neighborhoods.

Following is our companion paper, *CultureBlocks Working Paper #2—The Geography of Culture and Social Wellbeing: Patterns of Advantage and Disadvantage in Philadelphia Neighborhoods*. In that paper, we use the social wellbeing index and its constituent parts to examine, first, the clustering of advantage and disadvantage in particular Philadelphia neighborhoods and, second, the role that the arts and culture might play in promoting other aspects of wellbeing.

²⁰ Because of the dominance of the Democratic Party in the city, the primary in 2007 attracted more voters than the general election.

CultureBlocks Working Paper #2.

The Geography of Culture and Social Wellbeing: Patterns of Advantage and Disadvantage in Philadelphia Neighborhoods

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The Reinvestment Fund

The goal of the Culture and Social Wellbeing project has been to conceptualize and measure the value of the arts and culture as an integral dimension of the social wellbeing of urban communities. As discussed in CultureBlocks Working Paper #1, the SIAP/TRF research team has developed a conceptually anchored way of measuring the various factors that make life better or worse for Philadelphians. The Philadelphia index is a multi-dimensional approach that moves beyond narrow economic measures of welfare (“beyond the GDP”). It integrates cultural opportunities and engagement as dimensions of social welfare, and it measures wellbeing at the neighborhood level, enabling assessment of livability or quality community life. Thus, the Philadelphia social wellbeing index advances the debate over the social value of the arts by integrating the arts and culture into broader concerns about the valuation of social progress and equitable community development.

The SIAP/TRF project was inspired by an international body of theory and policy known as the *capabilities approach*, first articulated in the 1980s by welfare economist Amartya Sen. The 2009 publication by the international Commission on the Measurement of Economic Performance and Social Progress, headed by Joseph Stiglitz and Amartya Sen, served as the foundation for development of the Philadelphia social wellbeing index. Because of our interest in urban communities, the Philadelphia index modified the Sen/Stiglitz framework in two significant ways. First, instead of developing national measures of wellbeing, we calculated indexes for the city of Philadelphia at the census tract level. Second, we expanded the number of indexes that operationalize quality community life from eight to twelve dimensions and included cultural indicators as components of social connection (Table 2-1).

In this paper we discuss our findings, based on implementation of the Philadelphia social wellbeing index, regarding the geography of culture and social wellbeing in Philadelphia. What we have found are neighborhood clusters of advantage and disadvantage across the city as well mixed neighborhoods that sustain assets as well as vulnerabilities.

Table 2-1. Dimensions of social wellbeing, Philadelphia sub-indexes¹

Dimension	Sub-indexes	Description
<i>Economic wellbeing</i>		Material standard of living: income, educational attainment, labor force participation
<i>Economic diversity</i>		Gini coefficient (measure of inequality), poverty, unearned income
<i>School effectiveness</i>		Current school proficiency scores, dropout rate, truancy
<i>Housing problems</i>		Overcrowding, housing financial stress, vacancy rate, code violations
<i>Social connection</i>		
	Institutional connection	Nonprofit organizations, cultural assets, percentage lived elsewhere one year ago
	Face-to-face connection	Trust, belonging, neighborhood participation
<i>Insecurity</i>		High personal and property crime rates, Human Relations Commission complaints
<i>Health</i>		
	Morbidity	Diabetes, hypertension, chronic conditions, obesity
	Insurance, access	Low insurance rates, delayed care due to cost
	Social stress	High teen pregnancy, lack of prenatal care, high homicide, reports of child abuse & neglect
<i>Environment</i>		
	Environmental assets	Parks, trees, grass, (flood plains), underground streams (inverse), heat vulnerability
<i>Political voice</i>		Percent of eligible population casting ballots in 2007 and 2008

¹ Source: *CultureBlocks Working Paper #1: Culture as a Dimension of Social Wellbeing: Development of a Neighborhood-Based Wellbeing Index for Philadelphia* (SIAP/TRF 2013).

Two elements dominate the geography of social wellbeing in Philadelphia: ethnicity and economic wellbeing. In spite of the rapid expansion of ethnic diversity in the city since the 1990s, homogeneous African American and Latino neighborhoods score much worse on most of our measures of social wellbeing. Social wellbeing is correlated as well with our income/education/labor force factor—which we have combined as an economic wellbeing sub-index. Once we know the ethnic composition and income/education/labor force profile of a particular place, many dimensions of its wellbeing can be predicted.

Many, but not all. What is new from our analysis of the geography of social wellbeing is a fresh appreciation of a set of mitigating factors associated with social connection. Three associated factors—face-to-face social interaction, institutional connection, and cultural assets—are correlated with the income/ethnic scale but still exercise an independent influence on other dimensions. Indeed, when we statistically correct for income and ethnicity, we find that these social connection factors explain a considerable amount of the variation in neighborhood wellbeing in such measures as educational outcomes, prenatal outcomes, and morbidity (rate of chronic illness).

What emerges from the analysis is a more complete and persuasive understanding of the contribution of the arts and culture to the social wellbeing of Philadelphians. As we have found, the arts are *not* a magic bullet that can overcome the role of profound social and economic inequality. Cultural engagement does, however, make a significant contribution to the wellbeing of urban communities—often mitigating, rather than eliminating, the impact of inequality and social exclusion.

Relationship of Social Wellbeing to Demographic Characteristics

As noted in Working Paper #1, the racial/ethnic profile of a neighborhood has a significant relationship to patterns of social wellbeing. In this paper we explore in more detail the relationship of wellbeing to race/ethnicity as well as other demographic variables, in particular, age and household structure.

As shown on Table 2-2, the percent of non-Hispanic whites (% White) residing in a census tract is strongly correlated with its economic wellbeing sub-index (.70). Percent white also has a comparably strong relationship with high wellbeing in the spheres of housing (-.70), school effectiveness (.72), and social stress (-.71). The only wellbeing factor with which a tract's percent white is not correlated is institutional connection.

By contrast, the percent of African Americans (% Black) and percent of Latinos (% Hispanic) residing in a census tract generally are correlated with low wellbeing, although the percent black has a stronger relationship than the percent Latino. The exception here is face-to-face social connection, where the percent Latino is more highly correlated (-.41 versus -.30). The political voice index is very strongly related to the percent black (.43) but negatively correlated with both the percent Latino (-.23) and the percent Asian (-.35). A neighborhood's Latino percentage is also more strongly correlated with low health access and less strongly correlated with social stress than the percent African American.

A tract's foreign-born population percentage generally is not strongly related to any of the indexes of social wellbeing. The two exceptions are social stress, where the percent foreign-born is negatively correlated, and political voice where unsurprisingly there is a negative relationship.

Due to a strong correlation between race and household structure, many household variables reflect the relationships between race and social wellbeing. For example, both percent of the population under the age of 18 and household size are negatively correlated with economic wellbeing, face-to-face social connection, health access, housing problems, and school effectiveness.

Institutional connection and our cultural asset indicators and share a distinctive pattern of demographic correlation. These sub-indexes are strongly correlated with Center City location, percent of young adults, and percent of nonfamily households. As SIAP has noted in earlier work, household diversity is one of the distinctive characteristics of "natural" cultural districts. We are surprised, however, by the low correlations between ethnic diversity and the cultural measures, although this may be a result of using census tract instead of block group as our unit of analysis.

Table 2-2. Correlation of social wellbeing sub-indexes and demographic variables, Philadelphia census tracts 2005-09

	Percent White	Percent Black	Percent Asian	Percent Hispanic	Percent Foreign Born	Median age of population	Percent under 18	Percent 18-34 years old	Percent over 65	Average Household Size	Percent nonfamily households
Cultural asset index 2010 (tract)	0.285	-0.275	0.206	-0.102	0.133	-0.010	-0.503	0.482	-0.018	-0.495	0.528
Cultural participants per 1000 households 2010	0.426	-0.352	0.101	-0.173	0.030	0.152	-0.486	0.323	0.006	-0.543	0.321
Cultural resource index (tract)	0.217	-0.227	0.188	-0.054	0.135	-0.045	-0.434	0.437	-0.030	-0.443	0.515
Economic wellbeing sub-index	0.700	-0.521	0.032	-0.342	0.115	0.396	-0.590	0.109	0.191	-0.595	0.244
Environmental sub-index	0.261	-0.119	-0.165	-0.200	-0.076	0.378	-0.044	-0.321	0.210	-0.096	-0.192
Face-to-face connection sub-index	0.522	-0.304	-0.015	-0.414	-0.021	0.462	-0.500	0.025	0.321	-0.353	0.100
Gini coefficient	-0.272	0.212	0.078	0.051	-0.061	-0.280	-0.0240	0.338	-0.079	-0.076	0.266
Health access sub-index	0.348	-0.215	0.008	-0.265	0.006	0.267	-0.382	0.082	0.213	-0.398	0.097
Housing problems sub-index	-0.692	0.558	-0.102	0.267	-0.172	-0.468	0.416	0.094	-0.338	0.377	0.051
Insecurity sub-index	-0.134	0.076	-0.015	0.136	-0.037	-0.103	0.021	0.090	-0.101	-0.036	0.233
Institutional connection sub-index	-0.004	-0.053	0.262	-0.010	0.115	-0.306	-0.419	0.700	-0.169	-0.367	0.629
Morbidity sub-index	-0.465	0.449	-0.135	0.046	-0.199	-0.095	0.274	-0.153	-0.023	0.284	-0.127
Political voice sub-index	-0.264	0.425	-0.345	-0.230	-0.341	0.227	0.120	-0.346	0.150	-0.174	-0.078
School effectiveness sub-index	0.719	-0.613	0.135	-0.213	0.210	0.416	-0.476	0.024	0.283	-0.402	0.117
Social stress sub-index	-0.712	0.631	-0.112	0.161	-0.246	-0.258	0.386	-0.076	-0.118	0.395	-0.075

Relationship among Dimensions of Social Wellbeing

As noted in Working Paper #1, many dimensions of social wellbeing appeared to have the same spatial distribution as the economic wellbeing index with which we began the discussion. Correlation analysis of the wellbeing indexes, shown on Table 2-3, confirmed these relationships. Of the 15 other sub-indexes calculated, seven have a correlation coefficient that exceeds .3 with economic wellbeing. These associations include several predictable variables—in particular, the housing problems factor (-.74), school effectiveness (.74), and social stress (-.73). More surprisingly, however, economic wellbeing is also strongly related to face-to-face connections (.66).

The social connection variables have distinct patterns of association. The institutional connection sub-index has few strong associations, with the exception of the cultural indicators and the Gini coefficient (our indicator of economic diversity). Because face-to-face connection is strongly associated with economic wellbeing, it also has strong correlations with housing problems, school effectiveness, and health access. Face-to-face connection is also related to cultural participation, but not to the cultural asset index or cultural resource index.

Table 2-3. Correlations among dimensions of wellbeing, Philadelphia census tracts 2005-09

	School effectiveness	Insecurity	Housing problems	Morbidity	Health access	Social stress	Institutional connection	Face2face connection	Gini coefficient	Economic wellbeing	Environment	Political voice	Cultural resource	Cultural participants	Cultural asset index
School effectiveness	1.00	-0.21	-0.72	-0.40	0.44	-0.69	-0.03	0.60	-0.27	0.74	0.31	-0.06	0.26	0.44	0.32
Insecurity	-0.21	1.00	0.35	0.07	-0.10	0.37	0.25	-0.20	0.03	-0.24	-0.27	-0.10	0.09	-0.03	0.06
Housing problems	-0.72	0.35	1.00	0.38	-0.43	0.76	0.30	-0.60	0.43	-0.74	-0.39	0.01	-0.06	-0.34	-0.15
Morbidity	-0.40	0.07	0.38	1.00	-0.28	0.39	-0.12	-0.34	0.04	-0.54	-0.15	0.15	-0.27	-0.48	-0.35
Health access	0.44	-0.10	-0.43	-0.28	1.00	-0.37	0.09	0.35	0.02	0.52	0.25	0.07	0.24	0.40	0.31
Social stress	-0.69	0.37	0.76	0.39	-0.37	1.00	0.04	-0.51	0.21	-0.73	-0.38	-0.01	-0.19	-0.44	-0.28
Institutional connection	-0.03	0.25	0.30	-0.12	0.09	0.04	1.00	0.01	0.48	0.09	-0.35	-0.16	0.61	0.41	0.66
Face2face connection	0.60	-0.20	-0.60	-0.34	0.35	-0.51	0.01	1.00	-0.20	0.66	0.38	0.12	0.08	0.49	0.22
Gini coefficient	-0.27	0.03	0.43	0.04	0.02	0.21	0.48	-0.20	1.00	-0.18	-0.19	0.13	0.24	0.20	0.29
Economic wellbeing	0.74	-0.24	-0.74	-0.54	0.52	-0.73	0.09	0.66	-0.18	1.00	0.36	0.07	0.38	0.68	0.49
Environment	0.31	-0.27	-0.39	-0.15	0.25	-0.38	-0.35	0.38	-0.19	0.36	1.00	0.16	-0.32	0.22	-0.22
Political voice	-0.06	-0.10	0.01	0.15	0.07	-0.01	-0.16	0.12	0.13	0.07	0.16	1.00	-0.08	0.11	-0.04
Cultural resource	0.26	0.09	-0.06	-0.27	0.24	-0.19	0.61	0.08	0.24	0.38	-0.32	-0.08	1.00	0.46	0.92
Cultural participants	0.44	-0.03	-0.34	-0.48	0.40	-0.44	0.41	0.49	0.20	0.68	0.22	0.11	0.46	1.00	0.65
Cultural asset index	0.32	0.06	-0.15	-0.35	0.31	-0.28	0.66	0.22	0.29	0.49	-0.22	-0.04	0.92	0.65	1.00

Neighborhood Clusters of Wellbeing

In addition to correlation analyses, we conducted a multivariate cluster analysis in order to answer two questions. First, how do we explain the clustering patterns that we've seen in the bivariate correlations? In particular, do particular types of advantages and disadvantages tend to cluster in particular neighborhoods? Second, as a conceptual approach, can cluster analysis help us understand the contribution of the arts and culture to various aspects of social wellbeing?

In order to determine the extent to which different dimensions of wellbeing cluster in particular neighborhoods, we conducted a cluster analysis that included all of the major sub-indexes discussed in Working Paper #1 (and shown on Table 2-1). After some testing, we settled on a four-cluster solution that divided Philadelphia's populated census tracts into clusters ranging in size from 30 to 139 tracts.

As we would expect, the economic wellbeing index—which combines data on income, educational attainment, and labor force participation—was the most important variable in differentiating the clusters. Three other sub-indexes—social stress, housing problems, and school effectiveness—also had a significant impact on differentiating the clusters.

Table 2-4. Characteristics of social wellbeing clusters, Philadelphia 2005-09 (page 1 of 2)

	Center City plus (30)	Mixed neighborhoods (114)	High wellbeing (77)	Concentrated disadvantage (139)	Total		Eta squared	Sig.
Percent Not Hispanic White Alone	62.366	45.864	79.563	9.893	39.794		0.596	0.000
Percent Not Hispanic Black or African American Alone	18.163	36.512	9.596	67.375	41.819		0.38	0.000
Percent Not Hispanic Asian Alone	11.976	6.809	4.932	3.379	5.493		0.095	0.000
Percent Hispanic or Latino	5.389	8.750	4.632	17.446	11.037		0.096	0.000
Percent Foreign Born	14.443	13.755	12.311	7.272	11.056		0.105	0.000
Lived in same house previous year	0.703	0.884	0.888	0.868	0.866		0.321	0.000
Percent nonfamily households	0.703	0.420	0.412	0.403	0.431		0.315	0.000
Median age of population	31.491	35.560	40.863	31.259	34.668		0.278	0.000
Percent under 18	7.987	23.473	19.165	30.209	24.151		0.478	0.000
Percent 18-34_07	52.931	25.901	23.204	24.927	26.852		0.444	0.000
Percent over 65	10.616	12.691	17.674	10.701	12.753		0.164	0.000
School effectiveness factor jun26 (higher=better schools)	0.594	0.175	1.251	-0.877	0.010		0.626	0.000
Insecurity factor, combining 2 sets of crime plus HRC total events.	0.069	-0.338	-0.592	0.101	-0.192		0.36	0.000

Table 2-4. Characteristics of social wellbeing clusters, Philadelphia 2005-09 (page 2 of 2)

	Center City plus (30)	Mixed neighborhoods (114)	High wellbeing (77)	Concentrated disadvantage (139)	Total		Eta squared	Sig.
Housing problems factor June 2013	-0.133	-0.375	-1.168	0.948	-0.008		0.692	0.000
Morbidity factor june2013	-1.274	-0.145	-0.482	0.613	0.001		0.306	0.000
Health access factor june2013 (higher=more access)	1.057	-0.002	0.845	-0.619	-0.001		0.361	0.000
Social Stress	-0.648	-0.274	-1.174	0.976	0.003		0.683	0.000
Institutional connection jun13	2.664	-0.353	-0.477	0.079	-0.007		0.588	0.000
Face2face connection jun13	0.692	0.070	1.124	-0.761	-0.001		0.502	0.000
Gini coefficient 2007	0.536	0.412	0.403	0.471	0.441		0.39	0.000
Economic well-being factor (may2013)	1.212	0.168	1.092	-0.919	0.004		0.664	0.000
Environmental factor	-0.910	-0.142	1.192	-0.326	-0.007		0.38	0.000
Political voice factor	-0.485	-0.089	-0.035	0.198	0.004		0.038	0.003
CRI tract level (five factors)	2.309	-0.101	-0.118	-0.249	0.003		0.393	0.000
Cultural participants per 1000 households 2010	248.905	41.564	84.190	18.330	55.071		0.476	0.000
Cultural asset index 2010 (tract)	2.448	-0.113	-0.072	-0.342	-0.018		0.442	0.000

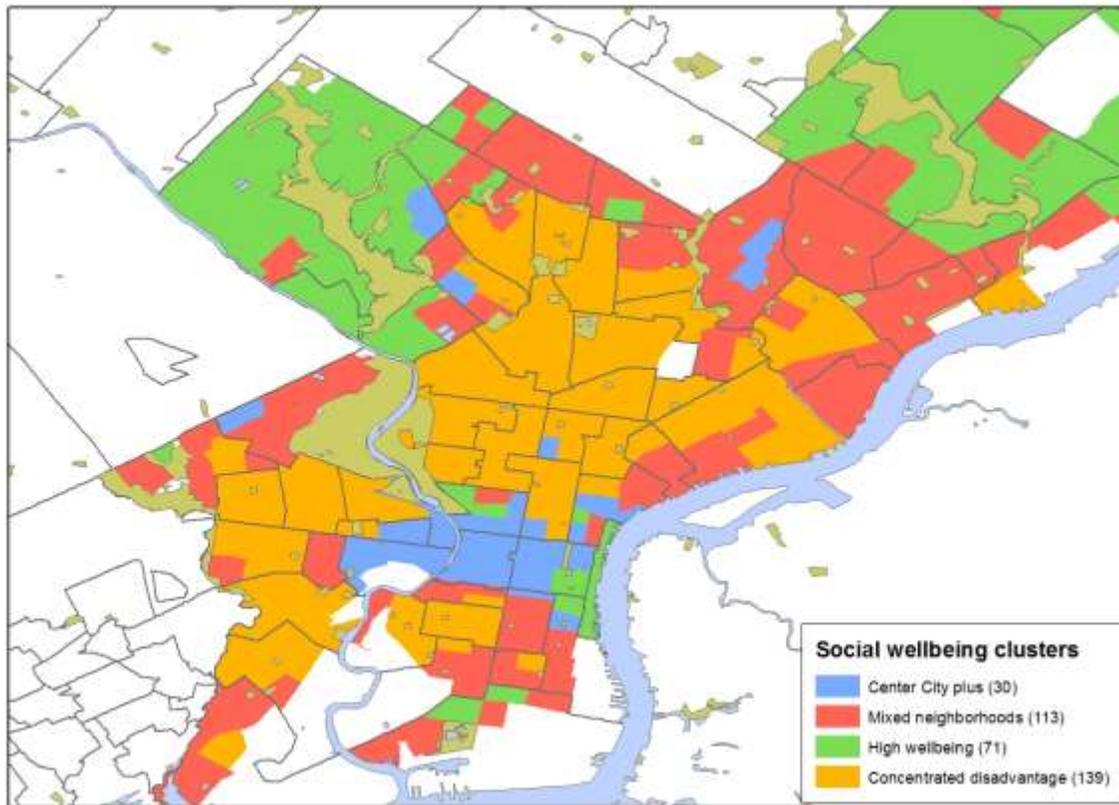
The analysis highlights three clusters that have strong concentrations of advantage or disadvantage. The largest cluster—which we call *Concentrated Disadvantage* (139 census tracts)—represents sections of North and West Philadelphia where many of the city’s African-American and Latino residents live. These neighborhoods had consistently negative scores on a host of variables, including economic standing, social stress, morbidity, and school effectiveness. More than 80 percent of residents of these tracts were either black or Latino. They also are home to more children and fewer young adults than clusters with advantages.

Two advantaged clusters—*Center City Plus* (30 tracts) and the *High Wellbeing* (77 tracts)—enjoyed positive scores on the core dimensions of wellbeing. At the same time, they differentiated from one another on several dimensions. Center City had a higher insecurity sub-index associated with higher crime in the area. The housing situation in Center City was not as good as that in the *high wellbeing* sections of the city. Although downtown residents enjoyed higher incomes, they were likely to spend a larger share of that income on housing. Center City also scored lower on environmental amenities. Finally, Center City scored higher on institutional connections but lower on face-to-face social connections.

Between the concentrations of advantage and disadvantage was a vast section of the city that fell in the middle—*Mixed Neighborhoods* (114 tracts). The economic standing of this cluster was just above the citywide average, and its housing situation was actually better than that of Center City residents. However, school effectiveness was only a bit above average (in a city where the average school did not meet basic standards), and scores were lower on both institutional and face-to-face connection than in the privileged sections of the city. Although this cluster had a somewhat higher percent white than the city as a whole, all four ethnic groups (white, black, Latino, and Asian) as well as foreign-born residents were well represented in these census tracts.

The map of the clusters confirms the view that emerged from our analyses of independent dimensions of wellbeing. The Concentrated Disadvantage cluster includes large parts of North and West Philadelphia—reaching as well northwest into Germantown and east into Kensington and Frankford—that are dominated by a whole series of social and economic problems. The High Wellbeing cluster includes much of both the Northwest and Northeast as well as smaller pockets of Center City and South Philadelphia. The remainder of the city—including sections of the lower Northeast, Oak Lane, Germantown, and South Philadelphia—presents a more complex picture. This Mixed Neighborhood cluster includes places that are doing well on some dimensions of wellbeing but poorly on others.

Figure 2-5. Social wellbeing clusters, Philadelphia census tracts c. 2010



The cluster analysis confirms that many dimensions of social wellbeing tend to reinforce one another. As Jonathan Wolff and Avner de-Shalit note in their book, *Disadvantage*,³ one use of the capabilities approach is to understand how inequalities build on one another, that is, the *clustering of disadvantage*. Residents of the poorest sections of Philadelphia, in particular, suffer not only from economic disadvantage; they also endure bad housing, inadequate or inaccessible health care, bad schools, and high crime. At the same time, residents of other neighborhoods experience a more variable experience, excelling on some dimensions of wellbeing while lagging on others.

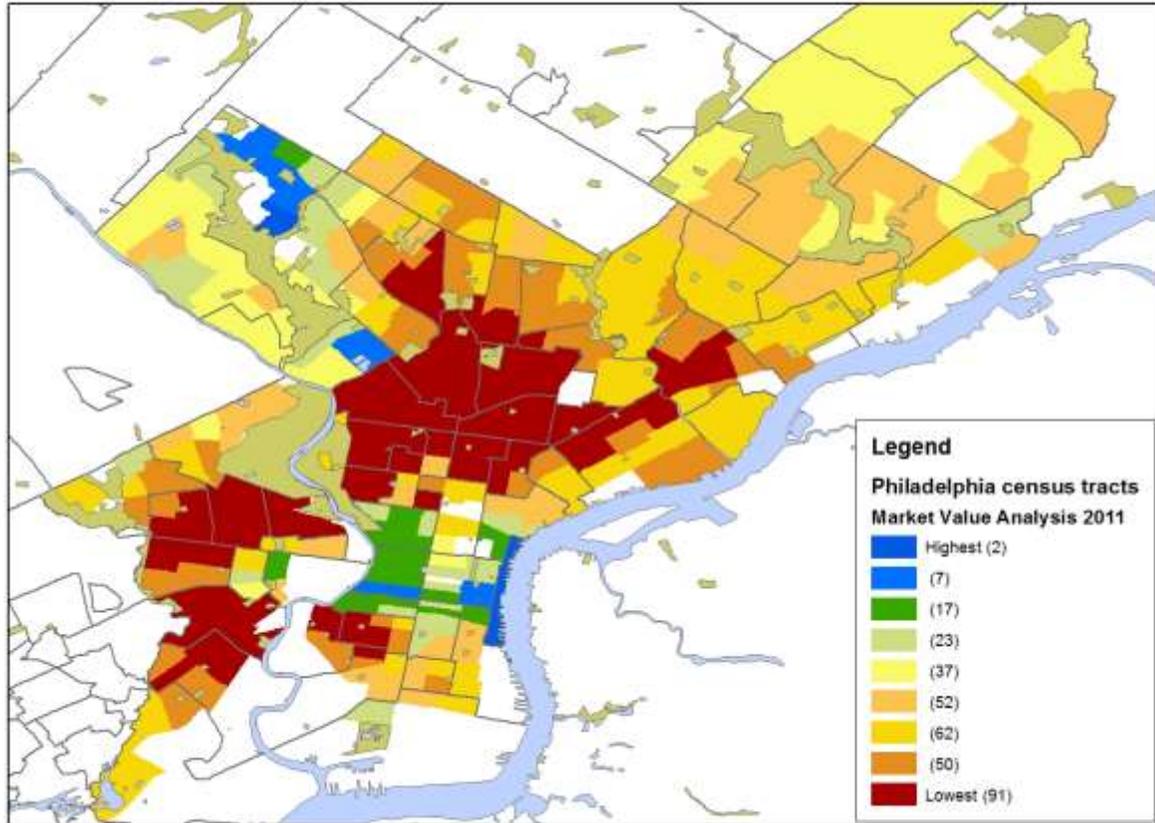
The social wellbeing cluster map has more than a passing similarity to the map of market value developed by The Reinvestment Fund (TRF).⁴ Indeed, the vast majority of the census tracts in the High Wellbeing cluster also have high MVA ratings, and fully 87 percent of tracts in the Concentrated Disadvantage cluster are at the bottom of the MVA scale. The Mixed Neighborhood cluster tracts are somewhere in the middle,

³ Jonathan Wolff and Avner de-Shalit, *Disadvantage*, Oxford University Press, Oxford and New York 2007

⁴ TRF's Market Value Analysis (MVA) is calculated by block group. We derived census tract estimates by taking the average score weighted by number of housing units.

although more scattered. In fact, one mixed census tract is near the top of the MVA scale, while more than 20 others are near the bottom.

Figure 2-6. Market Value Analysis, Philadelphia census tracts 2011



Note: TRF's Market Value Analysis was originally calculated for block groups. Authors calculated average scores for census tracts.

Table 2-7. Relationship of Market Value Analysis (MVA) to cluster analysis, Philadelphia census tracts c. 2010

Market Value Analysis	Center City plus	Mixed neighborhoods	High wellbeing (NW and NE Phila)	High disadvantage (N and W Phila)	Total
Highest	0.0%	0.0%	2.8%	0.0%	0.6%
2	4.0%	0.9%	6.9%	0.0%	2.1%
3	28.0%	4.6%	6.9%	0.0%	5.0%
4	24.0%	4.6%	15.3%	0.7%	6.7%
5	8.0%	4.6%	41.7%	0.0%	10.9%
6	24.0%	23.9%	23.6%	2.2%	15.2%
7	8.0%	41.3%	2.8%	9.6%	18.2%
8	0.0%	20.2%	0.0%	20.7%	14.7%
Lowest	4.0%	0.0%	0.0%	66.7%	26.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
N	25	109	72	135	341

Note: Because of missing values, the number of census tracts in each category varies from earlier tables.

Culture and Social Wellbeing

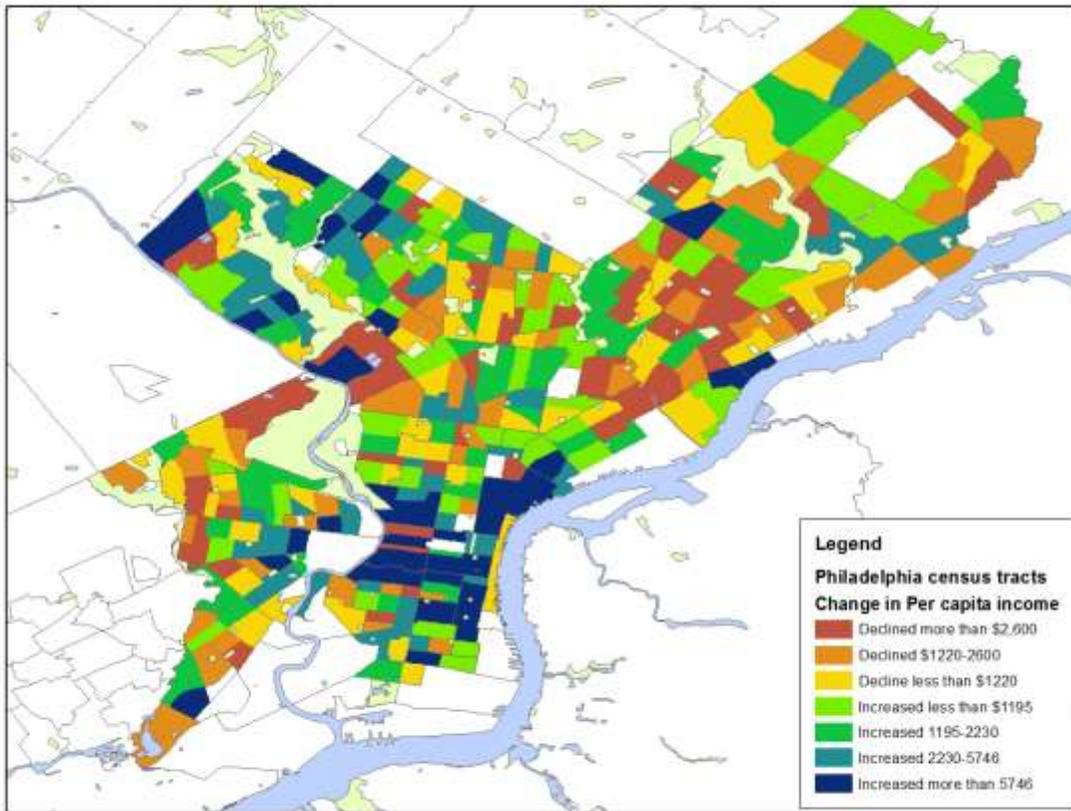
In the last section of this paper, we focus on the contribution of the arts and culture to social wellbeing. Using a work like *contribution* is clearly a finesse. On the one hand, it's a bit stronger than claiming that there is an *association* between the arts and some other dimension of wellbeing, but it certainly does not claim that the arts *cause* other indexes to be higher or lower.

With our existing data, we can make some stronger and some weaker arguments. Our strongest arguments have to do with change over time. We've been able to construct equivalent measures of factor scores for the income sub-index for the early 2000s. Here we can actually examine change over time and the factors that are associated with those changes. In other cases, we can examine only correlations within our 2005-09 data and try to make sense of the co-variations of particular dimensions of social wellbeing.

Change over time—income

Most of the data used in our social wellbeing index comes from 2005-09. These years, of course, coincided with the end of the economic expansion and the major recession that began in 2007. However, Philadelphia experienced a decline in household income even before the recession hit. Between 1999 and 2005, income had declined by seven percent (7%) in real terms. Between 2005 and 2009, income remained relatively flat; the 2009 household income was only one percent lower than it was in 2005. The recession hit all parts of the city, but some sections suffered more than others. While residents of the bottom three-fifths of census tracts saw their income decline, residents of the top census tracts (where the richest 20 percent of the population lived) enjoyed an income increase of \$4,166 (adjusting for inflation). Center City and its environs and Northwest Philadelphia benefited the most of these changes, while the lower Northeast and West Philadelphia (except for University City) were the biggest losers.

Figure 2-9. Change in per capita income 2000 to 2005-09, Philadelphia census tracts



What explains the decline of income in particular census tracts? We calculated a regression model to examine the relationships between percent change in per capita income and ethnic composition, economic wellbeing, face-to-face social connection, and our cultural asset index⁴. Only two of the variables in the analysis—economic wellbeing and the corrected cultural asset index (CCAI)—were statistically significant. Overall, the analysis explained 8.6 percent of the variance in percent change in per capita income, when adjusted for the number of variables in the analysis.

Table 2-10. Percent change in per capita income 2000 to 2005-09, Philadelphia census tracts: regression model, summary statistics

Tests of Between-Subjects Effects						
Dependent Variable: Percentage change in per capita income 2000 to 2005-09						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5.030 ^a	13	.387	3.581	.000	.119
Intercept	1.693	1	1.693	15.664	.000	.043
Face-to-face connection	.923	4	.231	2.137	.076	.024
Ethnic composition	.184	2	.092	.850	.428	.005
Economic wellbeing	2.085	3	.695	6.431	.000	.053
Corrected CAI	1.414	4	.354	3.272	.012	.037
Error	37.280	345	.108			
Total	43.916	359				
Corrected Total	42.310	358				
a. R Squared = .119 (Adjusted R Squared = .086)						

⁴ In the multivariate analysis, we use the cultural asset index corrected for the effects of location (Center City) and per capita income.

Most of the explanatory power of the corrected cultural asset index (CCAI) was a function of the tracts with the highest concentration of cultural assets. When corrected for the other variables in the analysis, per capita income increased by 19 percent (plus or minus eight percent) between 2000 and 2005-09 in the tracts with the highest concentration of cultural assets. For most of the rest of the city, per capita income changed very little.

Table 2-11. Multivariate analysis of percent change in per capita income 2000 to 2005-09, by corrected cultural asset index, Philadelphia census tracts.

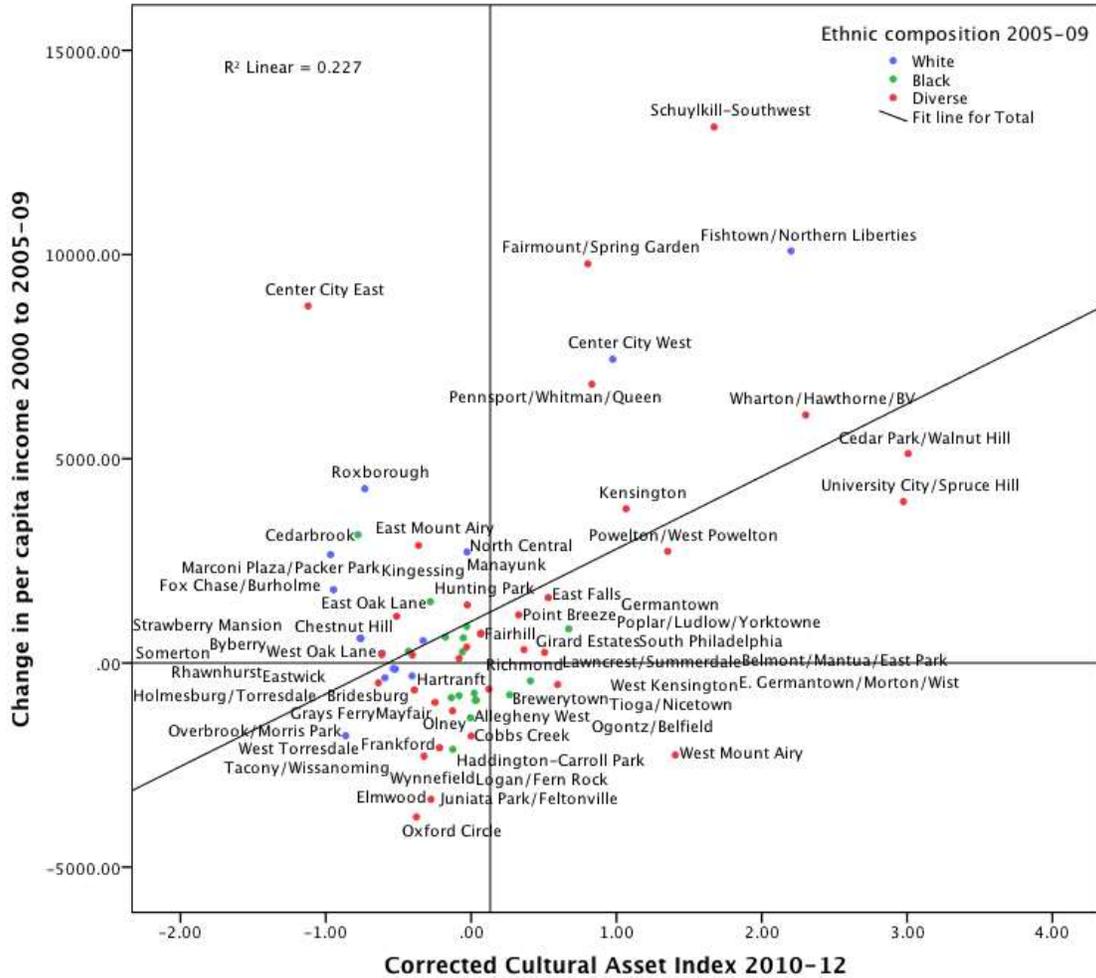
Corrected Cultural Asset Index (ranked)

Dependent Variable: Percentage change in per capita income 2000 to 2005-09

Corrected CAI (ranked)	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Lowest quintile	.092	.039	.016	.168
20%-39%	.042	.042	-.041	.124
40%-59%	.046	.043	-.038	.130
60%-79%	-.013	.042	-.096	.071
Highest quintile	.191	.041	.110	.271

Controlling for income and Center City location, we can see that diverse and white neighborhoods near Center City—including Schuylkill-Southwest, Fishtown, and Wharton—displayed the strongest association between cultural assets and income.

Figure 2-12. Scatterplot of neighborhoods, change in per capita income 2000 to 2005-09 by corrected cultural asset index, Philadelphia



Another analysis reinforced the conclusion that cultural assets had a positive effect on a neighborhood’s economic standing, even controlling for its current income level. We developed equivalent factor scores for income (using family and household median income, per capita income, poverty rate, and percent of the population with interest, dividend, or rental income) for both 2000 and 2005-09.⁵ In this analysis, the cultural asset index and economic wellbeing were the strongest influences on change in income when other factors were controlled. Each explained about five percent of the variance in the dependent variable. In this analysis, ethnic composition had a significant influence, explaining two percent of the variance.

Table 2-13. Multivariate analysis of change in income sub-index 2000 to 2005-09: summary statistics, Philadelphia.

Tests of Between-Subjects Effects

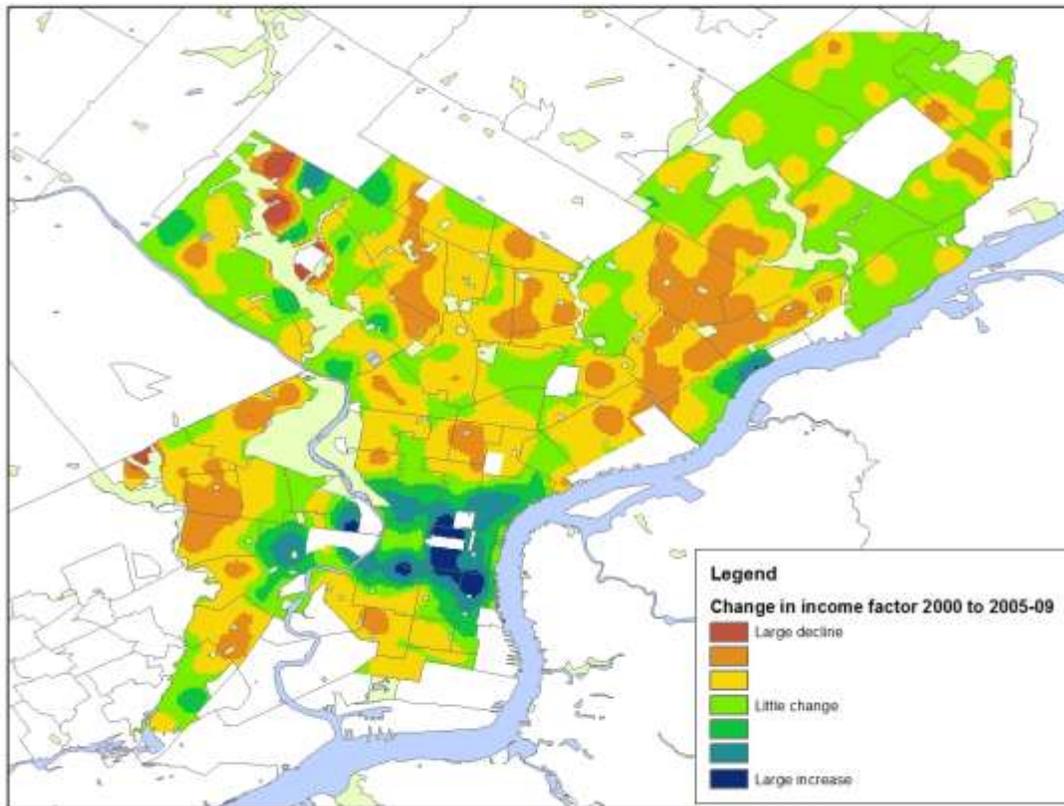
Dependent Variable: Change in Income **sub-index** 2000—2005-09

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3091.012 ^a	13	237.770	3.856	.000	.127
Intercept	2941.275	1	2941.275	47.704	.000	.121
Face-to-face connection	84.727	4	21.182	.344	.848	.004
Ethnic composition	513.067	2	256.533	4.161	.016	.024
Economic wellbeing	1312.700	3	437.567	7.097	.000	.058
Corrected CAI	1128.058	4	282.015	4.574	.001	.050
Error	21271.613	345	61.657			
Total	27523.985	359				
Corrected Total	24362.625	358				

a. R Squared = .127 (Adjusted R Squared = .094)

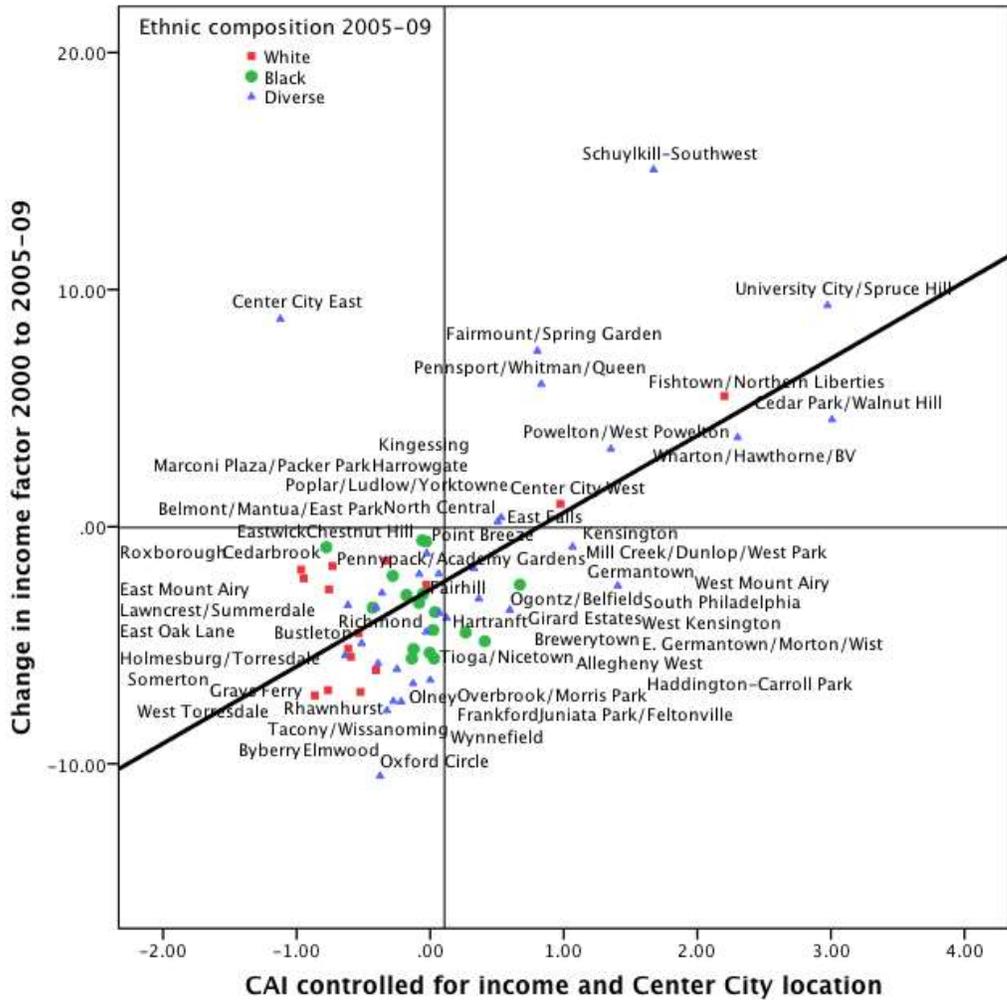
⁵ As discussed in Working Paper #1, we originally developed an income sub-index for the social wellbeing index, but later combined it with educational attainment and labor force sub-indexes to create the economic wellbeing sub-index. In this analysis, we used the original income sub-index for 2005-09 to estimate an equivalent measure for 2000 and then examined change in the sub-index over time.

Figure 2-14. Change in income sub-index 2000 to 2005-09, Philadelphia census tracts



This analysis identifies the same set of predominantly diverse neighborhoods that benefited from the connection of cultural engagement and rising incomes. The news, however, was not entirely good. African American neighborhoods and those with high numbers of Latinos found themselves as losers on both measures. What is more, even those African American neighborhoods with higher cultural asset scores were not able to translate those assets into increasing incomes.

Figure 2-15. Scatterplot of neighborhoods, change in income sub-index 2000 to 2005-09 by corrected cultural asset index, Philadelphia



R² Linear = 0.388

Social connection and other dimensions of wellbeing

Over the past several decades, many scholars along with an extensive literature on *social capital* have argued that a vital civic life can ameliorate the problems encountered by urban residents. Participation in local organizations fosters a civic life that generates a variety of benefits for local residents. Somewhat less expansively, Robert Sampson and his colleagues have suggested that the determination of local residents to combat the corrosive effects of poverty and crime—what they call *collective efficacy*—plays an important role in making some communities more livable than others.⁶

The Philadelphia neighborhood-based social wellbeing index provides an obvious test case for this theory. In essence, we can now ask: if we control for the effects of socio-economic standing and ethnicity, do social connections have an independent influence on measures of social wellbeing?

We have three measures by which to test this hypothesis: face-to-face social connection, institutional connection, and cultural assets. We ran multiple regressions with categorical versions of the interaction of ethnicity and economic wellbeing as one term and our measures of social connections as the other. We tested four sub-indexes:

- *school effectiveness*—In neighborhoods where there are stronger social connections, do kids perform better in school or at least stay in school?
- *insecurity*—Do social connections reduce crime and disputes?
- *social stress*—Following Sampson, do social connections mitigate crime and teen pregnancy?
- *morbidity*—Controlling for economic status, do residents of neighborhoods with many social connections live healthier lives?

The analysis suggests that each dimension of social connections has a different set of influences (Table 2-16). Face-to-face connection had a significant impact on school effectiveness, insecurity, and social stress, but no significant relationship to health access or morbidity. Institutional connection seemed to be the least influential dimension of social connection. It had a statistically significant relationship to the insecurity factor, but the relationship was in the “wrong” direction—that is, higher institutional connection was associated with higher levels of crimes and disputes. By the same token, its statistically significant relationship to school effectiveness also was in the “wrong” direction; tracts with higher institutional connection had lower scores on school effectiveness.

Cultural assets were significantly related to three dimensions—insecurity, social stress, and morbidity. In the cases of insecurity and social stress, as with institutional connection, the relationship was significant but was not in the predicted direction—that is, tracts with higher cultural asset scores had higher crime and more social stress as

⁶ Robert J. Sampson, Stephen W. Raudenbush, and Felton Earls, "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy," *Science* 277 (1997): 918–24.

well. The relationship with morbidity, however, was both statistically significant and in the predicted direction.

Table 2-16. Multivariate analysis of social wellbeing sub-indexes by measures of social connection, controlled for socio-economic standing and ethnicity, summary statistics

<i>School effectiveness</i>	<i>Sig</i>	<i>Eta Sq</i>
Cultural assets index (CAI)	0.794	0.005
Face to Face connection	0.001	0.054
Institutional connection	0.555	0.009
<i>Insecurity</i>	<i>Sig</i>	<i>Eta Sq</i>
CAI	0.000	0.133
Face to Face	0.012	0.036
Institutional connection	0.000	0.146
<i>Morbidity</i>	<i>Sig</i>	<i>Eta Sq</i>
CAI	0.000	0.065
Face to Face	0.058	0.026
Institutional connection	0.000	0.092
<i>Social stress</i>	<i>Sig</i>	<i>Eta Sq</i>
CAI	0.090	0.023
Face to Face	0.022	0.032
Institutional connection	0.034	0.029

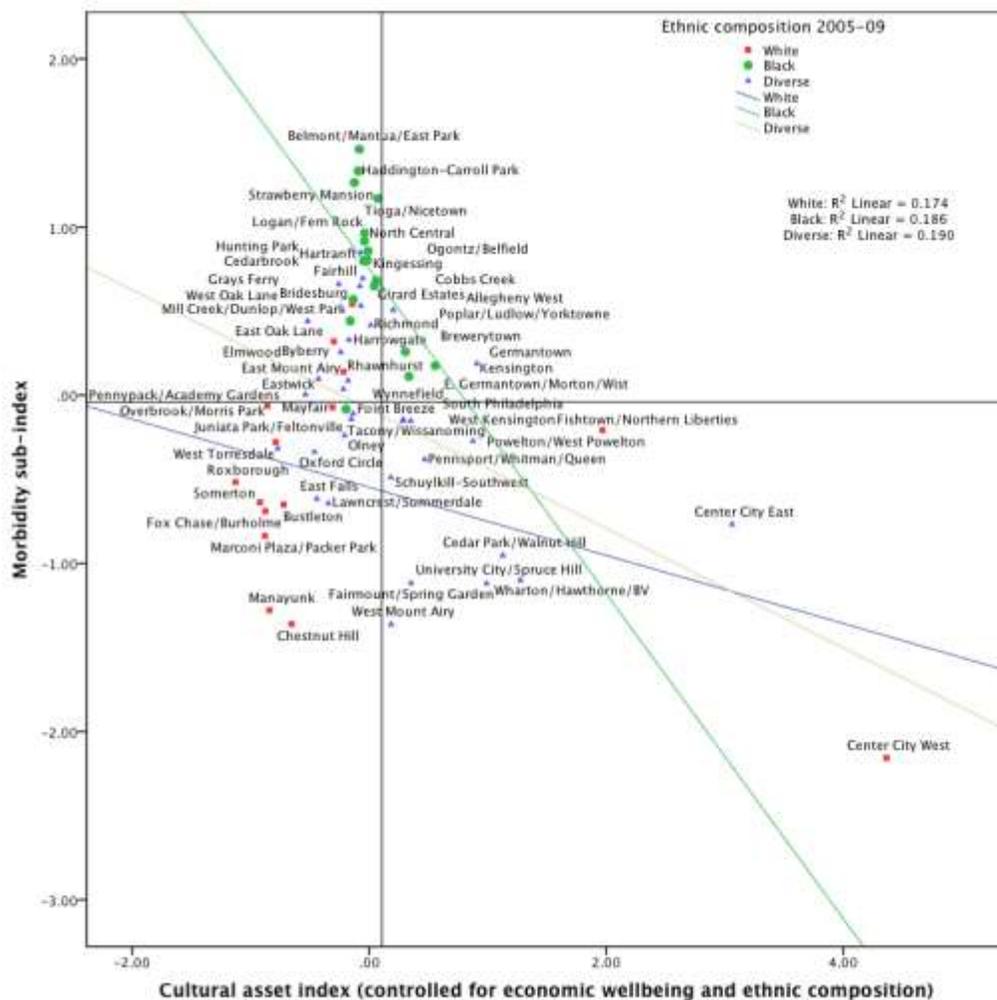
Controlling for other variables, tracts with higher cultural asset index scores had lower morbidity (Table 2-17). Consistent with earlier SIAP research, the relationship was non-linear. Neighborhoods with the highest concentration of cultural assets—what we call “natural” cultural districts—are where the relationship was strongest.

Table 2-17. Adjusted means, morbidity sub-index by cultural asset index, controlled for ethnicity and economic wellbeing sub-index, Philadelphia

Dependent Variable: Morbidity factor june2013		
CAI (ranked)	Mean	Std. Error
Lowest quintile	0.129	0.103
20%-39%	0.162	0.105
40%-59%	0.177	0.101
60%-79%	0.200	0.100
Highest quintile	-0.411	0.113

The neighborhood scatterplot on Figure 2-18 shows that the negative relationship between cultural assets (controlled) and morbidity—that is, higher cultural assets, lower incidence of chronic disease—was present across all ethnic composition categories. In fact, among white census tracts, the relationship was weakest. Among African American neighborhoods with the lowest corrected cultural asset index—like Belmont/Mantua, Haddington, and Strawberry Mansion—morbidity scores were well above average; while among neighborhoods with higher cultural asset scores—like Germantown and Overbrook—morbidity was much lower. Still, even in these “low” morbidity black neighborhoods, the morbidity index was still above the citywide average.

Figure 2-18. Scatterplot of neighborhoods, cultural asset index (controlled) by morbidity



The analysis of social connection and social wellbeing in Philadelphia neighborhoods reinforces the hypotheses with which we began this investigation. Forces of structural inequality—like income, educational attainment, labor force participation, and race/ethnicity—frame the wellbeing of most Philadelphians. Community connectedness, whether it takes the form of face-to-face connection or cultural engagement, cannot reverse these forces but can play a mitigating role. Indeed, this analysis shows that face-to-face connection plays that role with respect to school effectiveness, insecurity, and social stress. By the same token, we found that cultural engagement, when controlled for structural forces, is related to lower levels of morbidity in urban neighborhoods.

One lesson for policy to be drawn from this analysis has to do with the weak relationship between face-to-face social connection and cultural engagement. As we have seen, cultural engagement is much more strongly associated with institutional connection than with face-to-face connection. As discussed in Working Paper #1, the arts and culture have the potential to build capacity both within and across communities. In Philadelphia, at least, it appears that most cultural engagement is not related to face-to-face social connection. Whether enlightened policy could enhance the connection of the arts and culture to community building is a key question. The evidence suggests that such a linkage could pay off with a more robust relationship between community engagement and overall social wellbeing.

Conclusion

We began this project with the hypothesis that social wellbeing is composed of many dimensions and that those dimensions to some degree would be correlated with one another. Our investigation of social wellbeing in Philadelphia neighborhoods has supported this hypothesis to a great extent. Below is a summary of findings drawn from CultureBlocks Working Papers #1 and #2.

- Three dimensions of wellbeing that the Sen/Stiglitz Commission report saw as distinct—material standard of living, educational attainment, and work activity—are so highly correlated with one another that they should be treated as a single *economic wellbeing* dimension.
- A number of our sub-indexes of social wellbeing are strongly correlated with economic wellbeing, including: school effectiveness, housing problems, and social stress.
- Two distinct types of social connection emerged from the analysis. *Institutional connection* derives from the presence of institutions in the neighborhood—nonprofit organizations and community gardens—and is associated with high geographic mobility. *Face-to-face connection* is associated with high levels of neighborhood participation and trust.
- Philadelphia neighborhoods display a strong clustering of advantages or disadvantages with respect to dimensions of social wellbeing. About two-thirds of the city's census tracts fit into one or the other of these categories.
- The remaining one-third of the city's census tracts can be classified as mixed with respect to social wellbeing in that they exhibit strengths as well as weaknesses on different dimensions. Given Philadelphia's citywide weakness on some dimensions—school effectiveness, housing, and crime, in particular—residents of these neighborhoods are far from comfortable.
- Different types of social connection have a mitigating influence on some neighborhoods with high levels of disadvantage. Face-to-face connection, in particular—when corrected for income and ethnicity—is associated with higher school effectiveness, lower crime, and lower social stress.
- Concentration of cultural assets was associated with lower morbidity—that is, incidence of chronic disease—particularly in non-white neighborhoods.
- With respect to change over time, cultural asset accumulation was associated with above average increases in economic wellbeing between 2000 and 2005-09.

The contrast between face-to-face social connection and institutional connection, of which cultural assets are a factor, raises questions about the social impact of the arts. In a way, culture and the arts straddle the community versus society divide. Traditional cultural forms emerged as a way of reinforcing face-to-face social interaction and

personal connections, and contemporary cultural practice continues to serve this purpose even in “modern” societies. The arts—understood as the conventional “art world” composed of trained artists and supporting occupations, organizations and enterprises that support artistic efforts, and patrons who consume the products of artistic endeavor—are strongly associated with the less embedded forms of institutional connection and broader civil society.

One of the surprises of this study, given previous SIAP research, is the lack of relationship between presence of cultural assets in a neighborhood and several elements of concentrated disadvantage—such as school effectiveness, insecurity, and social stress. In past work on Philadelphia, we found that community-based cultural assets were associated with social benefits, such as fewer incidents of ethnic and racial harassment and improved child welfare outcomes. In CultureBlocks Working Paper #3, we examine changes in the cultural ecology of Philadelphia since the 1990s. That analysis will help us understand the extent to which our failure to find these associations is a product of changes in composition of the city’s cultural sector.

Finally, what emerges from this analysis is “a tale of three cities.” Residents of Center City and its environs and of Northwest and Northeast Philadelphia enjoy a level of social welfare almost unimaginable to residents of the clusters of disadvantage in North and West Philadelphia. Between these two Philadelphias is a sizable slice of the city that experiences neither a predictable supportive environment nor unrelenting challenges. Its schools aren’t abject failures; its crime rate is not epidemic; and its levels of social stress are not shocking. Yet, neither do these neighborhoods provide the conditions for human flourishing that are associated with social wellbeing. The concentrated disadvantage of North and West Philadelphia and the vulnerability of the many neighborhoods in the middle pose two sets of challenges for the city.

CultureBlocks Working Paper #3.

**THE CHANGING CONTOURS OF PHILADELPHIA'S CULTURAL ECOLOGY,
1997-2012**

Prepared by:

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For nearly two decades, the Social Impact of the Arts Project (SIAP) has been gathering data on Philadelphia’s cultural assets. During that time, we have gained a fuller appreciation of the sector’s various elements and how they work with one another. We have learned that the geographic and social features of a neighborhood contribute to its cultural ecology and evolution. Access to downtown, an upscale rental market, and different forms of social diversity—in particular, economic, ethnic, and household diversity—increase the likelihood that a neighborhood will spawn cultural assets and emerge as a “natural” cultural district. We’ve also learned that disadvantaged but diverse neighborhoods tend to evolve as cultural clusters that help build community, foster collective efficacy, and connect isolated enclaves with external resources.¹

At the same time, we have discovered that, within the broader social context, the cultural sector persistently finds itself in a struggle between the forces of social diversity and those of economic inequality. As the imperative of the market influences both the commercial and nonprofit arts, many organizations find that pursuit of earned income, expanding of market share, institutional capacity building often overshadow the social aspects of their mission.

This paper takes advantage of SIAP’s long-term data gathering to provide the most detailed portrait to-date of how Philadelphia’s cultural sector has changed during recent decades. In 1997 we completed our first comprehensive database of cultural assets—including inventories of nonprofit cultural providers and commercial cultural enterprises as well as estimates of cultural participants and resident artists—for the city’s 1,800 census block groups. In 2010-12 we again compiled a database of these four types of assets. In this paper we compare the two sets of data—and a synthetic *cultural asset index (CAI)*—for each year. With the CAI we identify concentrations of cultural assets and then classify these clusters based on their socio-economic and location advantages.

In working paper mode, we ask several basic questions about Philadelphia’s changing cultural sector and its affect on neighborhood cultural ecology. Where did the cultural sector grow? Where did it stagnate or decline? Did different types of cultural assets have the same trends and patterns or did they diverge? Did cultural assets become more or less equally distributed across different neighborhoods during these years? Can we identify factors—in particular, geographic and socio-economic features and measures of diversity—that predicted the changing contours of Philadelphia’s cultural ecology?

¹ See Social Impact of the Arts Project website re Culture and Community Revitalization, a SIAP collaboration with The Reinvestment Fund with support by the Rockefeller Foundation. http://www.sp2.upenn.edu/siap/completed_projects/culture_and_community_revitalization.html

The answers to these questions are not altogether happy ones. During this period— from the late 20th century to the second decade of the 21st— with respect to quality of community life, it appears that the rich got richer and the poor poorer. Those sections of the city with many cultural assets tended to acquire more, while those with few fell farther behind.

A significant implication of this shift might not be obvious. With the decline in the presence of the arts and culture in low-wealth neighborhoods comes a decline in the potential of the arts to generate social impact. In Working Paper #2, we identified different sections of Philadelphia that are characterized by concentrated advantages or disadvantages. We found in that paper that the arts appear to mitigate some disadvantages, but that other forms of social connection may have a broader social influence. As the arts become increasingly associated with advantaged neighborhoods, their potential to play that mitigating role begins to disappear.

A caveat emptor before we get too far. This paper uses the best available data on cultural assets in Philadelphia. The good news is that our ability to gather data on most of these indicators has improved since 1997. Digital sources and more in-depth knowledge have enhanced our ability to give an accurate portrait of the cultural sector. The bad news is that we can't go back and apply these lessons to the past. Our current databases have many more nonprofit providers, commercial firms, and participants than do our earlier versions. We don't believe that this reflects the actual growth of the sector. Therefore, for the most part, the paper discusses the relative concentration of cultural assets in particular neighborhoods and how these have shifted. We have much less to say about the actual number of assets and how that has changed over the years.

Data and Methods

In this paper, the primary data we use to assess the composition and changing contours of Philadelphia's cultural ecology are SIAP-constructed databases based on inventories of four types of cultural assets: nonprofit cultural resources, commercial cultural firms, resident artists, and cultural participation.

1997 Philadelphia cultural asset database

In 1996-97 SIAP developed its first integrated geographic database that linked information on arts and cultural institutions, other social organizations, cultural participation, and neighborhood characteristics to particular areas of the region. Central to this database is an inventory of nonprofit arts and cultural providers located in the five Pennsylvania counties of metropolitan Philadelphia.²

Nonprofit cultural resources

The 1997 nonprofit cultural inventory was developed from two types of sources. To document formal, nonprofit organizations in the region, we drew from existing sources: city and state funding applications, Greater Philadelphia Cultural Alliance Membership Directory, Pennsylvania Cultural Directory, Philadelphia Folklore Project directory, and the IRS Master File of tax-exempt organizations. In addition, to identify unincorporated nonprofit associations—such as small, emerging, and participatory groups and embedded programs—we combed weekly newspapers, specialized publications, and community news sources. The 1997 database included information on location, discipline, institution, budget size, parent organization or fiscal conduit, public facility, community or regional orientation, youth focus, activities, constituency, year founded, and text data on mission and collaborative activity for qualitative analysis.

Commercial cultural firms

The 1997 commercial culture database was derived from a proprietary computerized yellow pages produced by InfoUSA. Using the revised Standard Industrial Code attached to each record, we identified firms in the following categories:

- art school
- dance school
- gallery
- music or art school
- music store
- movie theater
- theatre
- theatre support
- art restoration
- photography

² In this paper, we restrict our analysis to the city of Philadelphia.

- commercial and graphic design
- art supply
- audio studio
- art studio.

For both the nonprofit and commercial databases, we drew quarter-mile buffers around each organization or firm. We computed counts of the numbers of each type of organization or firm located within the city's block groups and within a quarter mile. We used buffers for two reasons. First, many block groups contain no non-residential uses, so buffers give a better sense of residents' access to cultural programs or services. Second, buffers "smooth" the mapping of sites, which makes it clearer where concentrations of a particular type of program or service are located.

Resident artists

For 1997 our estimates of the concentration of resident artists across the city was based on data provided by Pew Fellowships in the Arts. Until 2009, Pew Fellowships allowed for the self-nomination of artists of all disciplines for their awards. We used the Pew application file to estimate the relative concentration of artists living in each of the city's block groups and living within a quarter mile of each block group.

Cultural participants

Our measure of cultural participation in 1997 derived from lists of participants provided by a cross-section of regional cultural organizations. These lists consisted of computer files maintained by the organizations as part of their administrative routine. The most common sources were: mailing lists, subscriber or membership lists, single ticket buyers, and class registration records.

We solicited information from 27 organizations drawn from a list of regional arts and cultural institutions. We did not select a random sample. Our criteria for inclusion were: (1) range of size and type of institution; (2) geographical distribution across the city and region; and (3) probability that the organization maintain a computerized database. Of the organizations from which we requested data, all but three were able to provide us with lists. The cooperation of Upstages, a downtown ticketing service for nonprofit organizations, augmented the number of patron lists and the number of organizations represented. The participant database, therefore, includes 38 lists representing 28 regional cultural institutions. Approximately 205,000 unique households were included in the database.

Our data sources rarely contained any information on individuals apart from their address. Our major means of analyzing the social context of participation, therefore, was based on geographically coding (geo-coding) the data by longitude and latitude. By doing so, we were able to examine the characteristics of the geographical unit in which the participant lived. (In this case, the unit of analysis was the block group, an area of six to eight city blocks.) Thus, we had no individual information on participants; we examined only the neighborhood effects of participation.

After geocoding the data, we produced a set of counts of individuals from each participant list who lived in a particular block group. We then compiled these counts into a single database and computed rates of participation (per 1,000 residents). Individuals whom we could not geocode by address were geocoded by zip code. We then distributed the number of zip code-geocoded cases across all of the block groups in the zip code area proportional to the block groups' percent of the total zip code population. Cases with addresses outside of the five Pennsylvania counties of the metropolitan area were not included in this analysis.

2010-12 Philadelphia cultural asset database

As part of the Chairman's Award from NEA that preceded the current project, SIAP provided TRF with four cultural indexes for the city of Philadelphia aggregated to census block group: nonprofit cultural resources, commercial cultural firms, resident artists, and cultural participation rates. It was anticipated that SIAP would refine these 2010 indexes for the current project.

Although we characterized this work as *refining* the inventories, in many ways it resulted in new versions of the databases. Because of the interest in having data on individual organizations, SIAP decided to differentiate nonprofits that we could find on the IRS Master File from those that we could not. For the latter group, we had no direct information on the budget size or age of an organization. Likewise, this led us to differentiate commercial firms that we found on the InfoUSA database from those that we did not. Again, we had data on size and age of firm for the former but not the latter.

We also made several other refinements to the databases. We broke out college-based programs, both because they are numerous and because they have a distinctive geography (located on or near campus). We differentiated arts or cultural programs run by non-arts nonprofits. Again, this is an important set of programs, but their organizational data do not accurately reflect the actual size of the arts programs and could distort our view of the sector.

Nonprofit cultural resources and commercial cultural firms

Taking all of these changes together, the 2010-12 organization inventory represents a combination of five separate databases³:

- nonprofit art and cultural organizations (IRS Exempt Organizations Master File);
- commercial cultural firms (infoUSA proprietary business database);
- college-based arts and cultural programs;
- arts and cultural programs run by (other) non-arts nonprofit organizations (IRS Exempt Organizations Master File); and
- emerging cultural resources (nonprofit and commercial).

³ For purposes of comparison with 1997, we used the aggregate numbers of nonprofit and commercial (or for-profit) organizations. Later in the paper, we conduct a separate analysis of emerging cultural resources as a proxy for recent growth of the cultural sector.

The emerging cultural resources database needs a bit of explanation. As mentioned above, it includes nonprofit cultural groups or programs not listed on the IRS master file and cultural businesses not listed on the infoUSA database. Also included are two additional sets of resources: arts or cultural programs run by non-arts nonprofits not listed on the IRS master file and artists' spaces.

For these five databases, we geocoded all sites and calculated block group counts for each inventory overall and for subcategories with them. Specifically, we conducted separate counts for the following categories:

Nonprofit cultural organizations (IRS Master File)

Type of organization:

- Artist-based group (all disciplines)
- Community-based center, participatory program
- Cultural facility (all disciplines)
- Cultural resource/arts service program
- Cultural steward or affiliation group
- Ethnic-focus program
- Historic site/district, preservation
- Library/archive/historic society (collections)
- Media and media arts
- School/training program

Size (annual expenditures):

- Under \$100,000
- \$100,000 - \$500,000
- \$500,000 - \$3 million
- \$3 - \$10 million
- Over \$10 million

Ruling year (received IRS exempt organization status):

- 2000 or since
- 1990-1999
- 1980-1989
- 1970-1979
- Before 1970

Commercial cultural firms (InfoUSA)

Type of industry:

- Advertising
- Architecture
- Broadcasting
- Film and video
- Music production
- Performing arts
- Publishing
- Visual arts

Decorative arts and crafts
Other independent artists

Number of employees:

1
2-9
10-49
50-249

Estimated annual sales (on location):

Under \$500,000
\$500,000 - \$2.5 million
\$2.5 - \$10 million
\$10 - \$50 million
Over \$50 million

Non-arts nonprofit organizations with embedded arts program (IRS Master File)

College-based arts and cultural programs (IRS Master File)

Emerging cultural resources (NOT FOUND on IRS Master File OR infoUSA):

Arts or cultural nonprofit organizations/programs
Non-arts nonprofits with arts or cultural program
Artist spaces
Arts or cultural businesses/firms

For each of the above categories, we calculated two counts: the number of organizations or groups within the block group (point counts) and the number of organizations within one quarter-mile of the block group (buffer counts). As with the 1997 database, because of the character of block groups (relatively small areas of 6 to 8 city blocks, often without a commercial street), the quarter-mile buffer counts give a more accurate sense of the cultural resources accessible to its residents. Counts of organizations within the block group allow the counts to be aggregated to larger geography. For the larger geographies (census tract and above), these counts provide an accurate sense of available cultural resources.

Resident artists

For 2010 our estimates of the concentration of resident artists across the city were based on a sample of artists across disciplines (performing, visual, literary, film/video, and interdisciplinary arts) residing in Philadelphia between 2005 and 2010. We gathered artist address data for this period from Pew Fellowships in the Arts⁴ (as in 1997) as well as other local grant-makers and arts service organizations: Leeway Foundation, Philadelphia Independent Film & Video Association (PIFVA), Philadelphia Live Arts

⁴ As noted above, until 2009 Pew Fellowships in the Arts allowed self-nomination by artists for their awards. Unfortunately, beginning in 2010, with its introduction of a formal nomination and invitation process, Pew Fellowships no longer compiles a database of self-identified Philadelphia-area artists in 12 discipline categories.

Festival & Philly Fringe, Stockton Rush Bartol Foundation, Theatre Alliance of Greater Philadelphia, and the Philadelphia Cultural List Cooperative, a program of the Greater Philadelphia Cultural Alliance. As with the 1997 file, we use the 2010 resident artist database to estimate the relative concentration of artists living in each of the city's block groups and within a quarter-mile of each block group.

Cultural participants

Our measure of cultural participation in 2010 was derived from organizational records compiled by the Philadelphia Cultural List Cooperative, a program of the Greater Philadelphia Cultural Alliance and constructed by TRG Arts. Participation represents all types of activities routinely tracked by nonprofit cultural programs, including membership, subscribers, single ticket buyers, and workshop and class registration.⁵

The 2010 List Co-Op represents 135 member organizations and over two million unique households in the Greater Philadelphia region. As in 1997, we geocoded address data and produced counts of individuals from each participant list who lived in a particular block group. We then compiled these counts into a single database and computed rates of participation (per 1,000 population).

Cultural asset index

For both years, we calculated a cultural asset index (CAI) based on a factor analysis of seven indicators: nonprofit cultural organizations, commercial cultural firms, and resident artists (two indicators of each: within block group and within quarter mile of block group), and cultural participation rate (participants per 1,000 residents). The analysis explained 60 percent of the variance across the seven variables in 1997 and 63 percent in 2010-12. Most of the variables remained fairly stable, although cultural participation was more central to the index in 1997 and resident artists weighting increased in 2010-12.

⁵ For the 2010 analysis, however, we excluded mailing lists.

Table 3-1. Cultural asset indexes, factor weighting, Philadelphia 1997 and 2010-12

		Component
	1997	2010-12
Cultural participation rate	0.852	0.692
Resident artists	0.631	0.803
Resident artists within 1/4 mile	0.763	0.888
Commercial arts firms	0.606	0.662
Commercial arts within 1/4 mile	0.893	0.825
All nonprofits within 1/4 mile	0.882	0.877
All nonprofit providers	0.742	0.782

Although the factor analyses were similar, the differences between them make it difficult to compare scores over time. To correct this problem, we used the formula used to calculate factor scores in 2010-12 and applied it to the standardized variables for 1997. These weights, shown in the following table, provide scores that are more easily compared over time. We refer to this as the replicate CAI.

Table 3-2. Coefficients used to calculate the replicate CAI for each year

	Factor coefficients
Resident artists	.182
Resident artists within quarter mile	.201
Cultural participation rate	.157
Commercial arts	.187
Commercial arts within quarter mile	.150
All nonprofit resources	.177
All nonprofits within quarter mile	.199

Cultural Assets—Geography by Type of Resource, Philadelphia 1997 and 2010-12

Our Philadelphia database suggests a rapid increase over the past 15 years in the number of cultural resources and participants located in the city. In 1997 we identified only 727 nonprofit cultural providers and 313 commercial cultural firms. In the 2010-12 database these numbers had swelled to 1,707 and 2,661 respectively. However, as noted above, our methods for gathering data on cultural assets have changed considerably over the years. As a result, we are not in a position to identify how much of this apparent increase is “real” and how much is attributable to changes in our ability to identify resources. Changes in the organizations and types of data that we use to estimate participation have clearly had a considerable impact on our participation rates.

Table 3-3. Total number of assets in SIAP databases, Philadelphia 1997 and 2010-12

	Total		Mean		Std error	
	1997	2011	1997	2011	1997	2011
Nonprofit arts within block group	727	1,707	0.41	0.97	0.03	0.05
Nonprofit arts within 1/4 mi of block group			4.47	29	0.23	1.04
Commercial culture within block group	313	2,661	0.18	1.51	0.1	0.01
Commercial culture within 1/4 mile of block group			1.87	13.25	0.65	0.06
Resident artists within block group	1,088	2,069	0.62	1.17	0.04	0.06
Resident artists within 1/4 mile of block group			6.97	11.74	0.28	0.46
Cultural participants per 1,000 residents			65.08	117.99	2.9	4.01

In this paper, therefore, we focus not on absolute numbers of resources but rather on the *concentration* of different types of resources by block group. In practical terms, this means that we’ve converted our indicators into a standardized form (mean of zero, standard deviation of 1) as a way of estimating change—that is, which neighborhoods in the city have more or fewer resources in 2010-12 than they did in 1997 relative to the rest of the city.

One thing that is clear is that there has been consistency among neighborhoods that have the most cultural resources and engagement. Of the ten neighborhoods (out of 69 citywide) with the highest rank in 1997, eight remained in the top ten in 2010-12. Center

City, its surrounding neighborhoods—like Fairmount, Wharton and Schuylkill-Southwest (South Philadelphia)—and two neighborhoods in Northwest Philadelphia—Chestnut Hill and West Mount Airy—were the highest-ranking neighborhoods at both the beginning and the end of our study period.

The strengths and weaknesses of these neighborhoods, however, were not consistent. Only the two Center City neighborhoods ranked high on all types of assets in both years. In 2010-12, for example, a neighborhood like Schuylkill-Southwest (now more commonly called South of South) ranked high on organizations and artists but low on participation, while West Mount Airy ranked lower on commercial firms but high on participation.

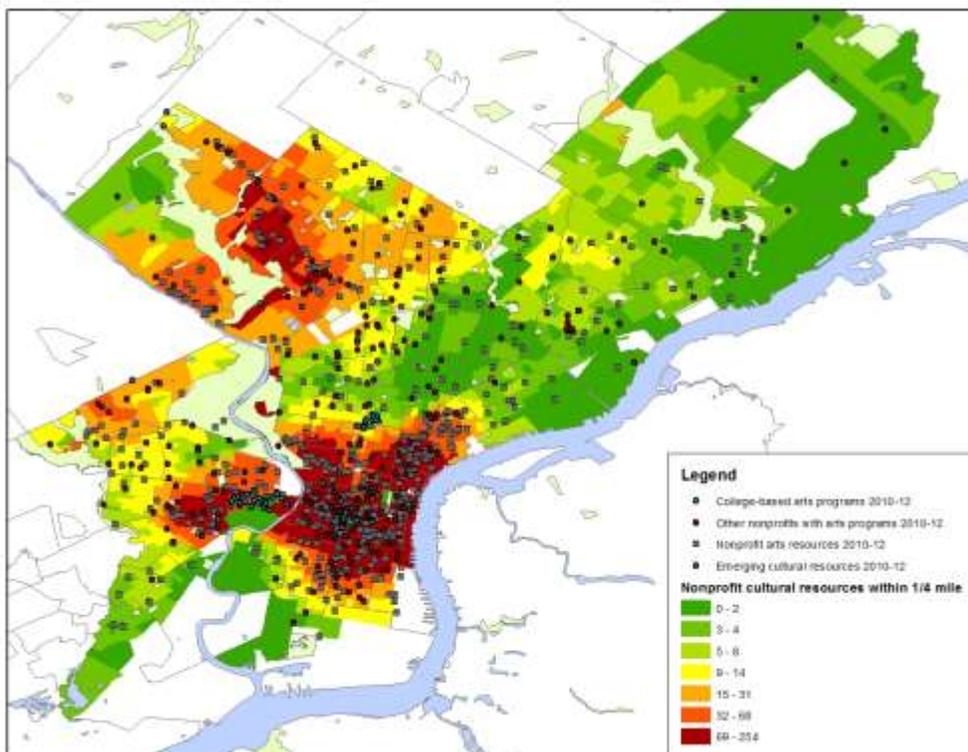
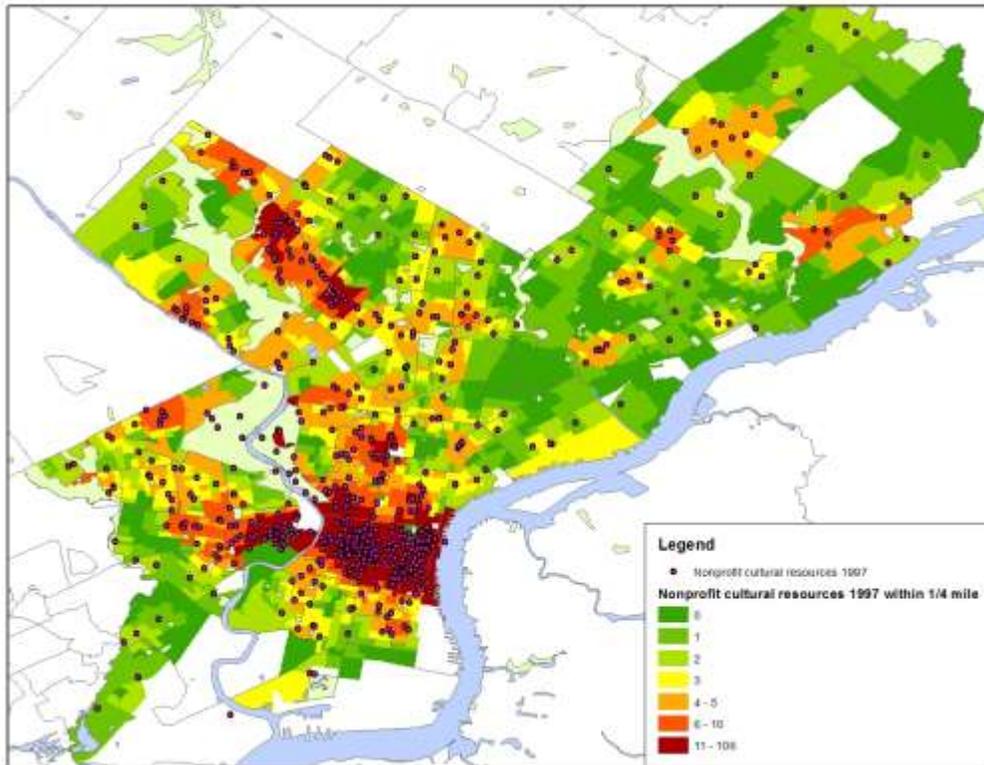
Table 3-4. Cultural asset ranking, neighborhoods with highest cultural asset index, Philadelphia 1997 and 2010-12

Neighborhood	Non profit rank 2011	Commer- cial rank 2011	Artist rank 2010	Participa- tion rank 2010	Non- profit rank 1997	Commer- cial rank 1997	Artist rank 1997	Partici- pation rank 1997	CAI 2010- 12	CAI rank 1997
Center City West	3	2	4	4	1	2	2	1	2	1
Riverfront	1	1	2	-- ⁶	3	1	1	3	3	2
Center City East	2	3	3	5	2	3	3	2	1	3
West Mount Airy	11	18	8	2	10	39	8	5	8	4
Wharton/ Hawthorne/Bella Vista	5	7	5	8	8	4	5	12	5	5
Fairmount/Spring Garden	6	8	9	7	6	17	6	4	9	6
Schuylkill- Southwest	4	6	6	11	7	9	4	13	6	7
Fishtown/Northern Liberties	9	5	7	14	19	6	7	17	7	8
Pennsport/ Whitman/Queen	8	9	10	16	9	8	11	14	12	9
Chestnut Hill	20	10	23	1	17	7	19	6	11	10

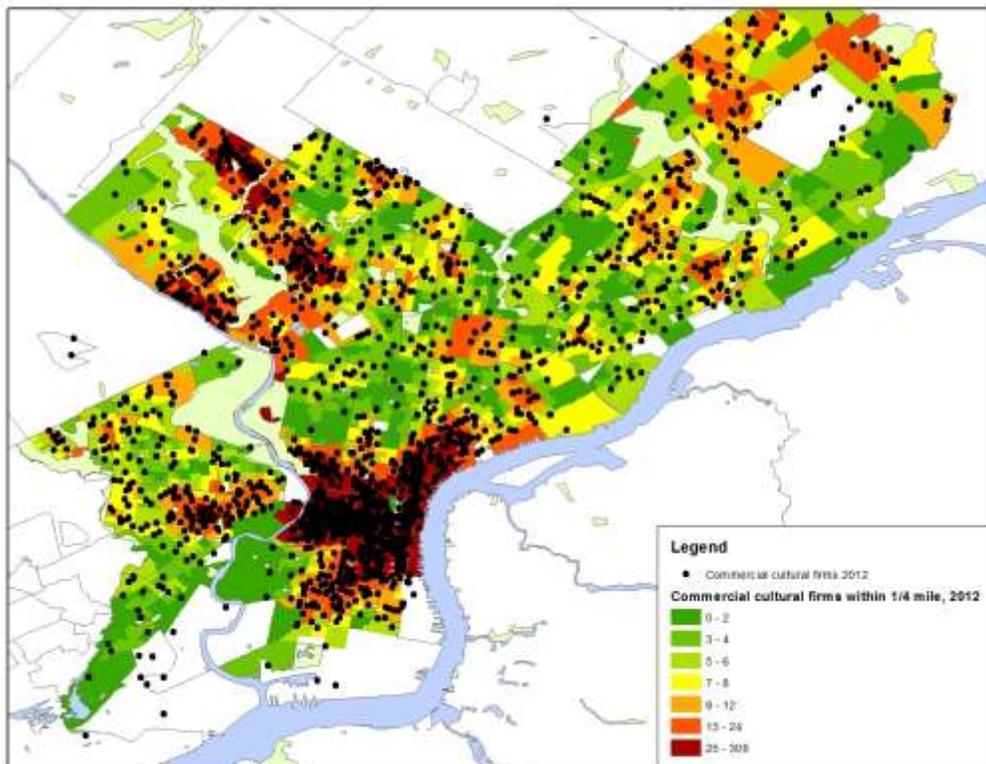
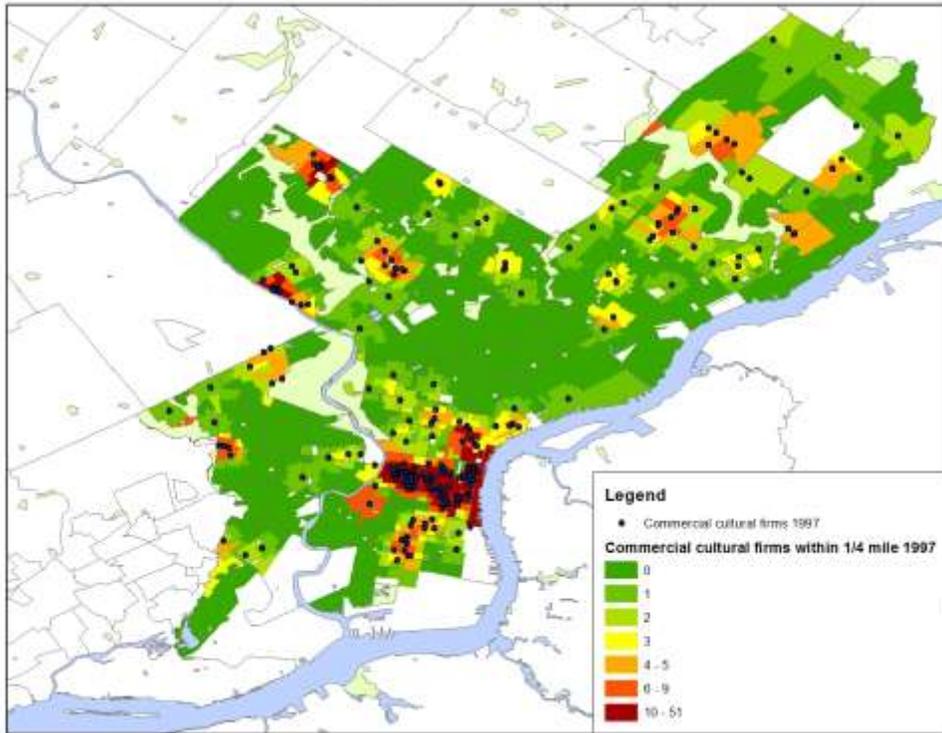
On the following four pages we present maps of the four types of cultural assets for each the two time periods. Again, the clear impression is of continuity in the neighborhoods with the highest number of assets, while we find more fluidity among those with fewer assets.

⁶ Riverfront is home to a number of institutions, but has a very small resident population so its participation rate is not meaningful.

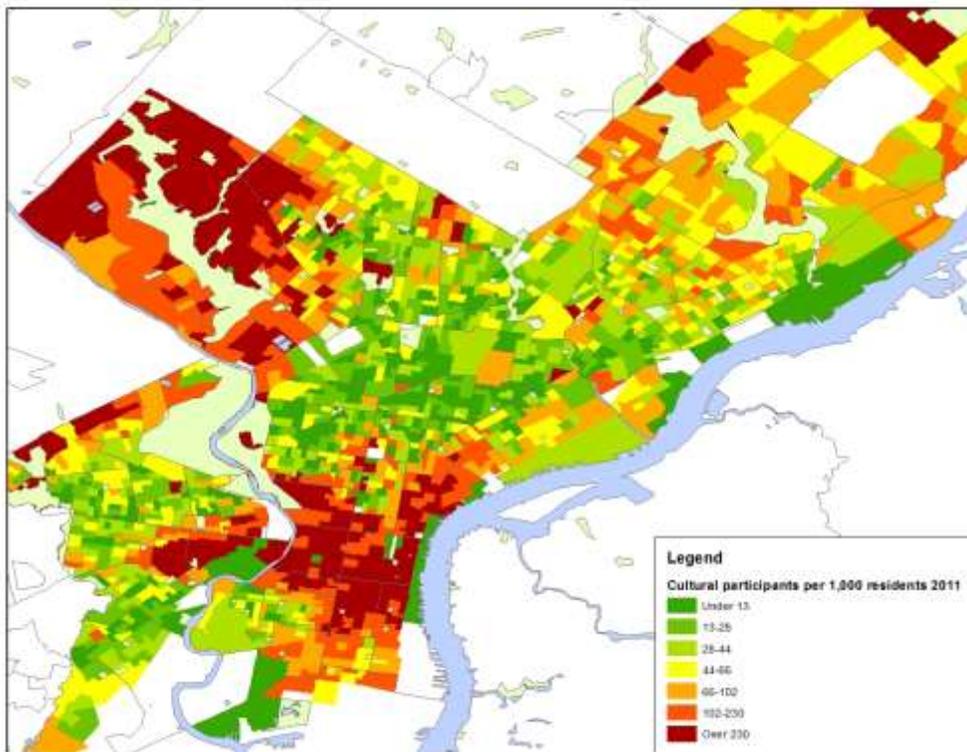
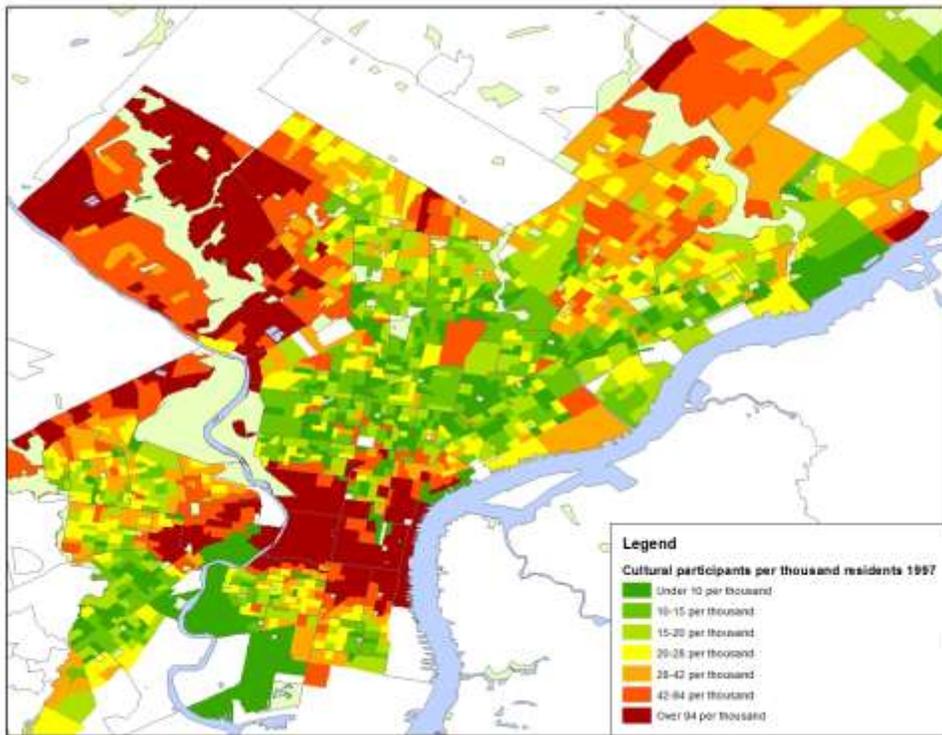
Figures 3-5 and 3-6. Nonprofit cultural resources within quarter-mile, Philadelphia block groups 1997 and 2012



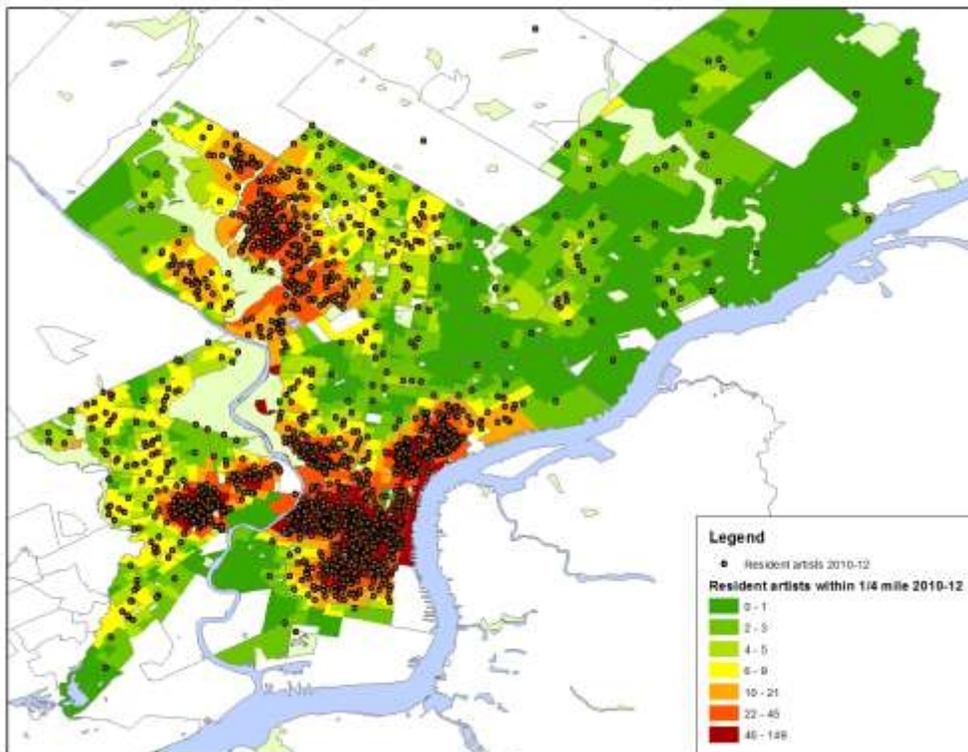
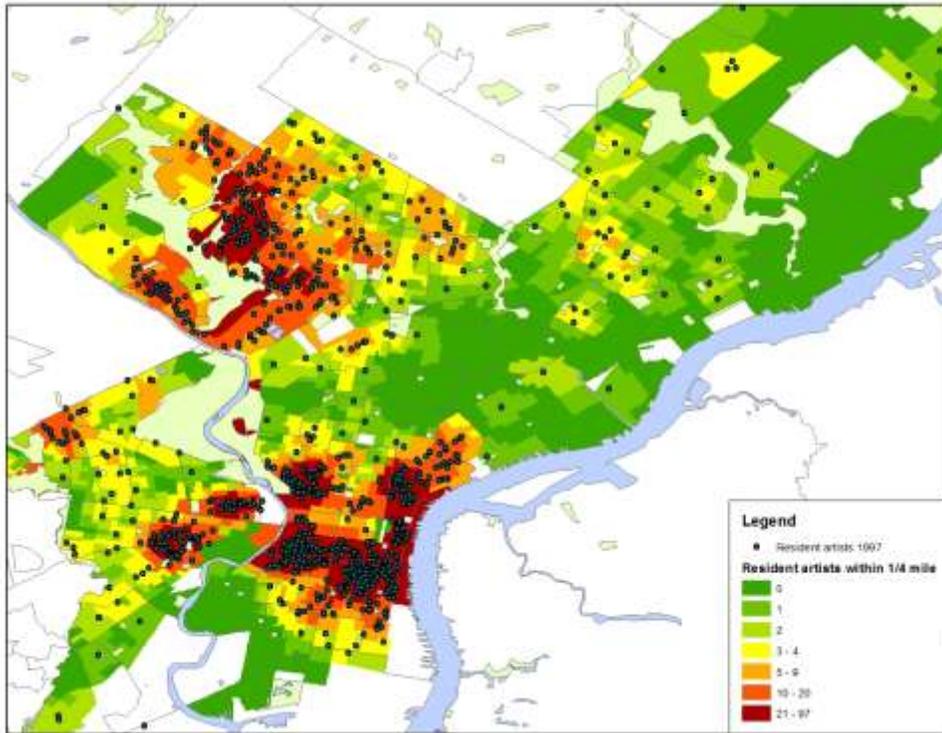
Figures 3-7 and 3-8. Commercial cultural firms within quarter-mile, Philadelphia block groups 1997 and 2012



Figures 3-9 and 3-10. Cultural participation rate, Philadelphia block groups 1997 and 2012

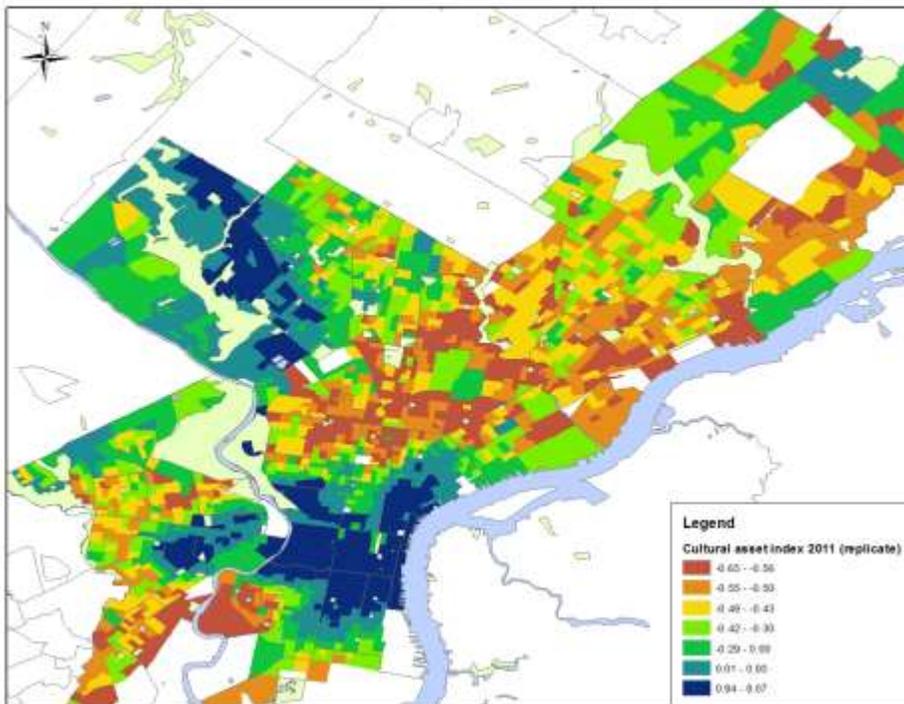
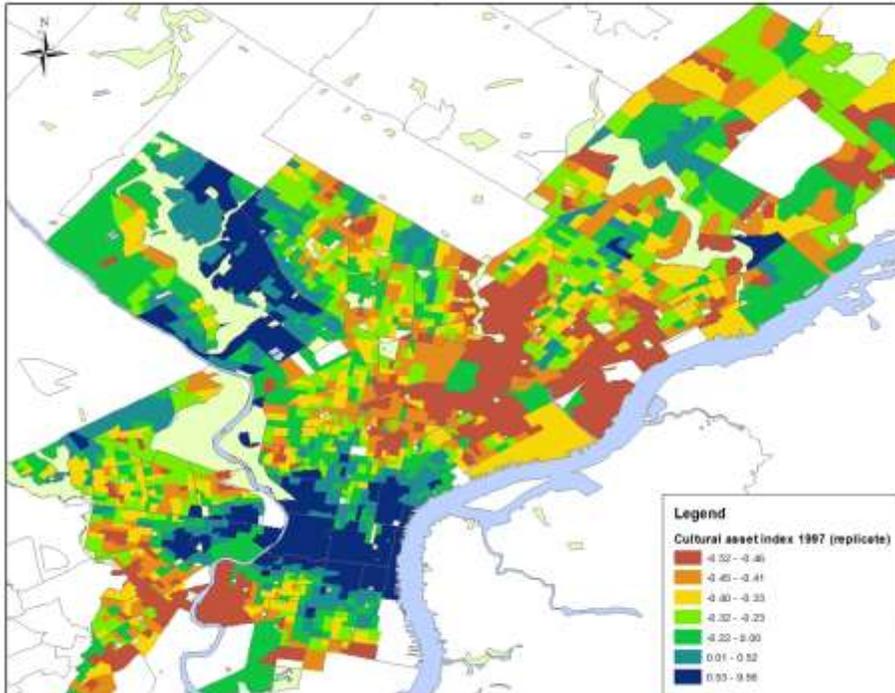


Figures 3-11 and 3-12. Resident artists within quarter-mile, Philadelphia block groups 1997 and 2012



We then used the four variables—including both point and buffer estimates for nonprofits, commercial firms, and artists—to calculate a *cultural asset index* (CAI) for each year. In most cases, these maps were consistent with the maps of individual assets.

Figures 3-13 and 3-14. Cultural asset index, Philadelphia block groups 1997 and 2012



Finally, for each year, we calculated a “corrected” cultural asset index (CCAI). As we know, presence of cultural assets in a neighborhood is highly correlated with its socio-economic and locational advantages. In order to identify neighborhoods that “exceed expectations”—that is, they have high levels of cultural assets given their disadvantages—we used regression analysis to correct for economic standing (per capita income) and location (distance from Center City—under one mile, one to two miles, more than two miles).

This analysis identified two distinctive types of neighborhoods: first, advantaged neighborhoods that have so many cultural assets that their scores remain high even when income and location are considered; second, neighborhoods that have a moderate level of cultural assets despite their considerable disadvantages.

Figure 3-15. “Corrected” cultural asset index, Philadelphia block groups 1997

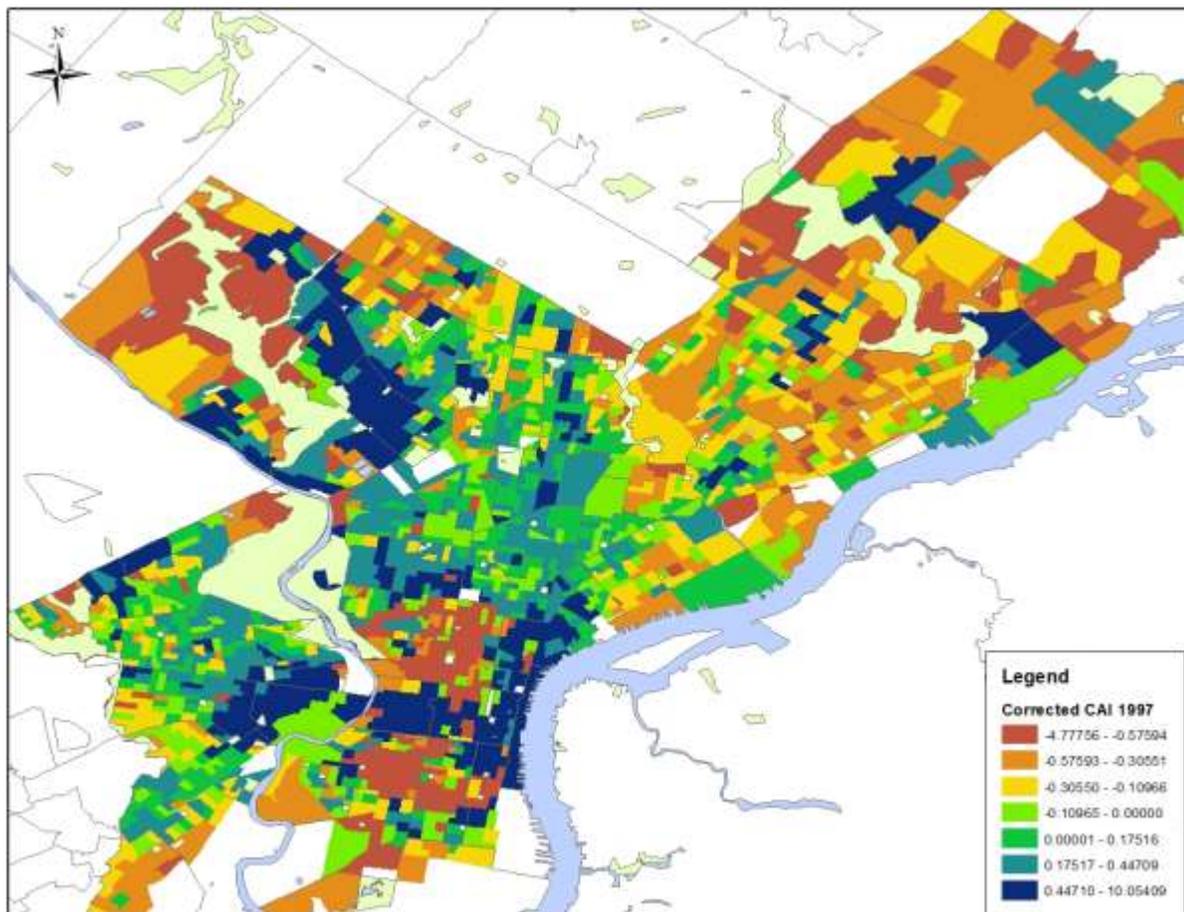
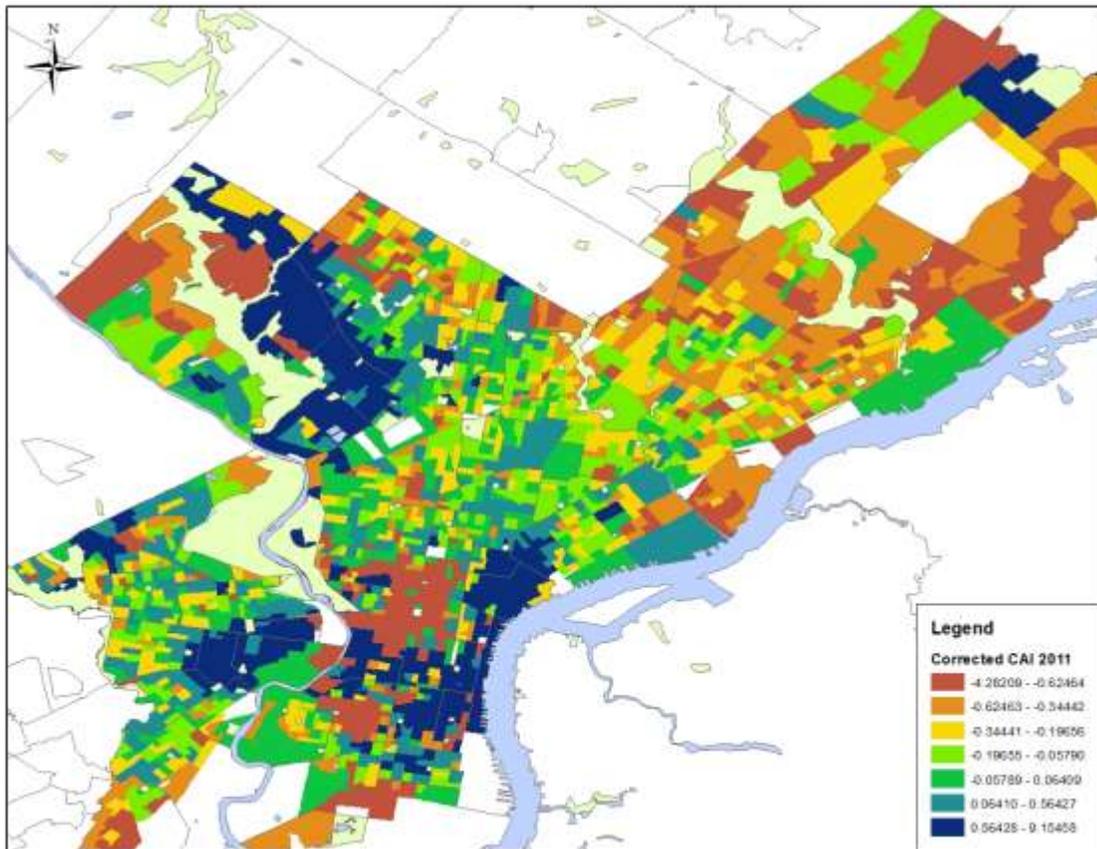


Figure 3-16. “Corrected” cultural asset index, Philadelphia block groups 2010-12



A scatterplot of the cultural asset and corrected cultural asset indexes illuminates the distribution of cultural asset clusters by economic and locational advantage. On the following two pages are scatterplots by neighborhood for each of the two years. As shown on the 1997 graph:

- One group of neighborhoods—Center City, neighborhoods surrounding Center City, and several in the Northwest—had strong scores on both indexes. Many had economic advantages, but even taking these into consideration, they still showed up as strong on the corrected index.
- A second set of neighborhoods—Chestnut Hill, Fairmount, East Mount Airy, Callowhill/Chinatown North—had high CAI scores, but when their economic and location advantages were taken into consideration, they fell short on the corrected index.
- A third set of neighborhoods in North and West Philadelphia and East Germantown had lackluster scores on the cultural asset index, but when their disadvantages were considered, they had much higher scores on the corrected index.
- Finally, many neighborhoods were low on both indexes.

The 2010-12 graph highlights the same divisions, although the particular neighborhoods change somewhat. The most significant difference between the two plots is the smaller number of neighborhoods in the 2010-12 data that are strong only on the corrected index.

Figure 3-17. Scatterplot of Philadelphia neighborhoods, Cultural Asset Index and Corrected Cultural Asset Index, 1997

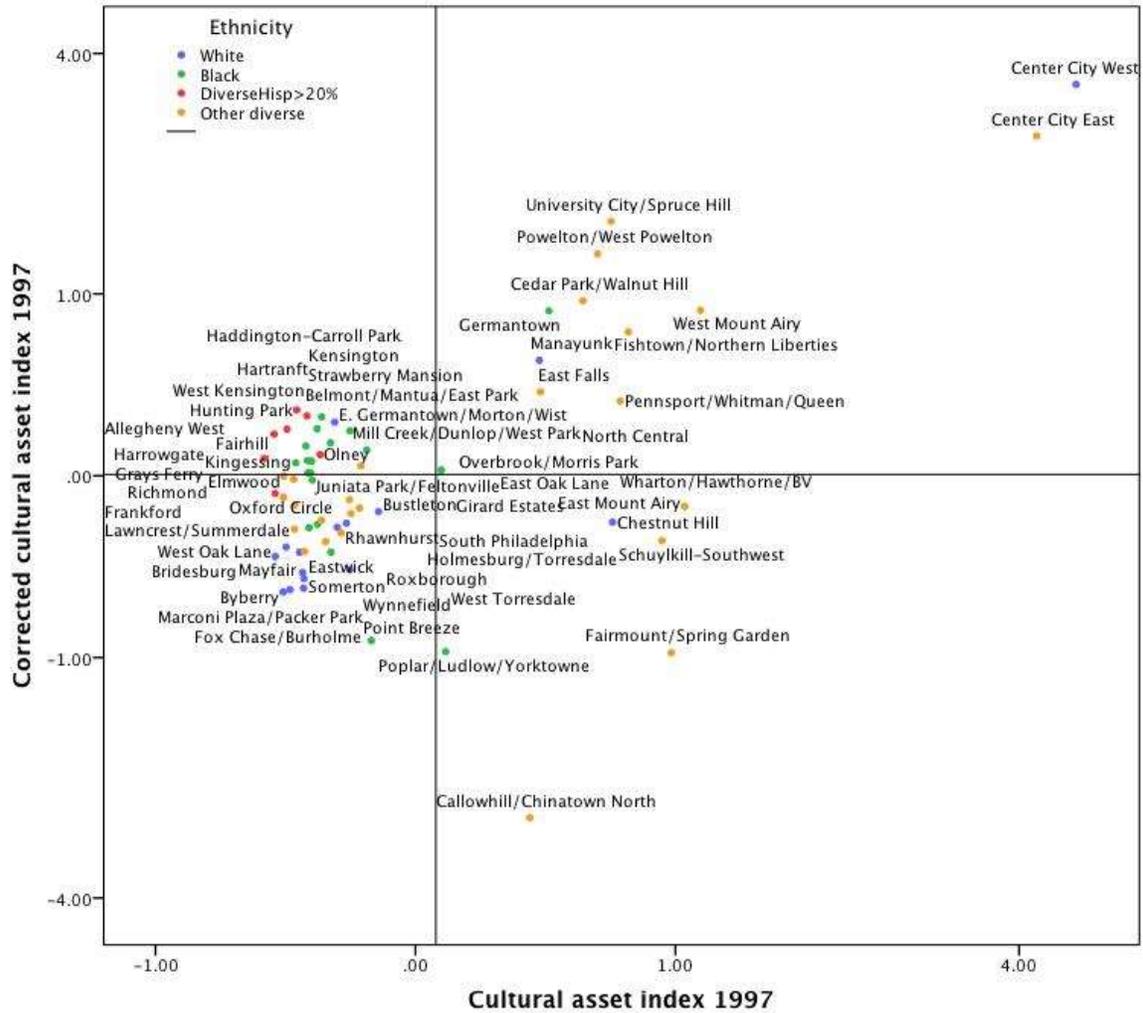
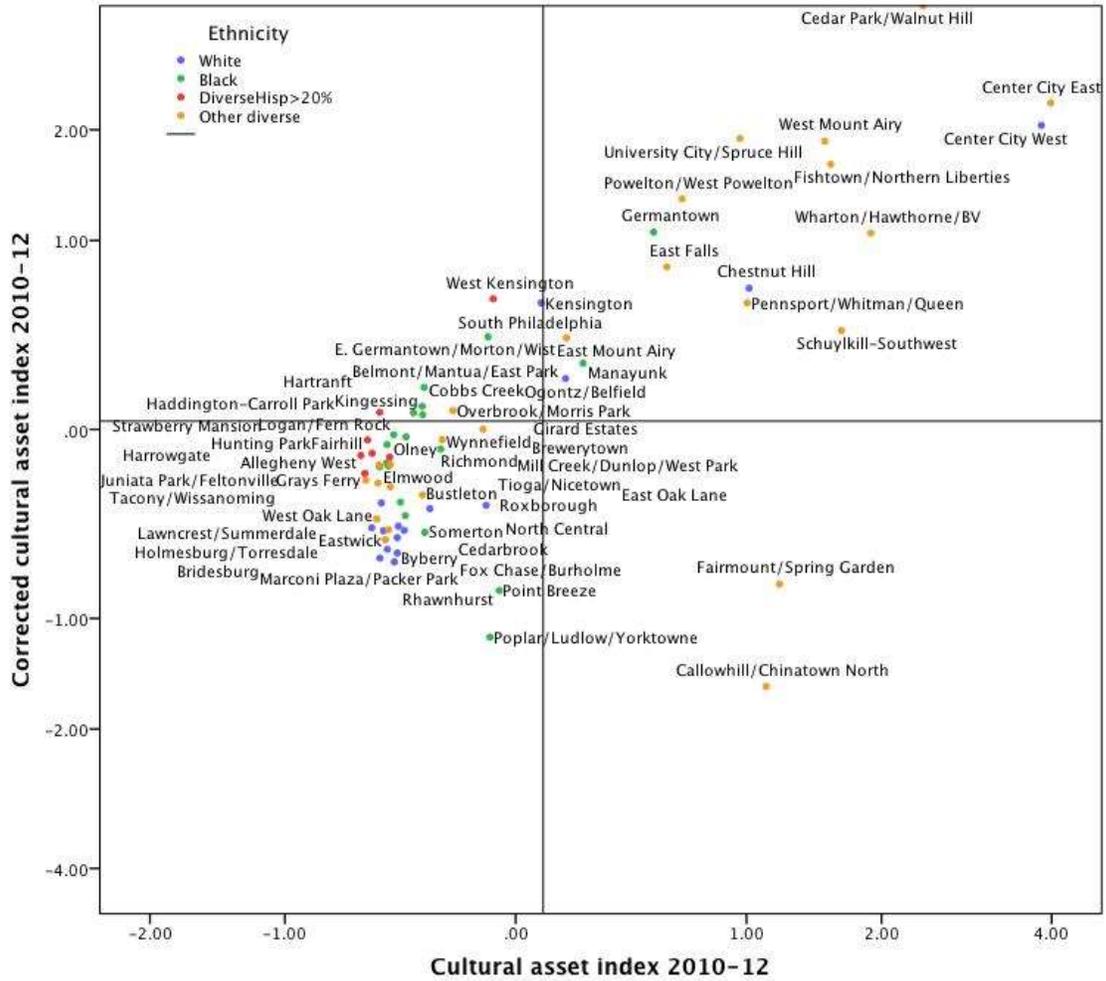


Figure 3-18. Scatterplot of Philadelphia neighborhoods, Cultural Asset Index and Corrected Cultural Asset Index, 2010-12

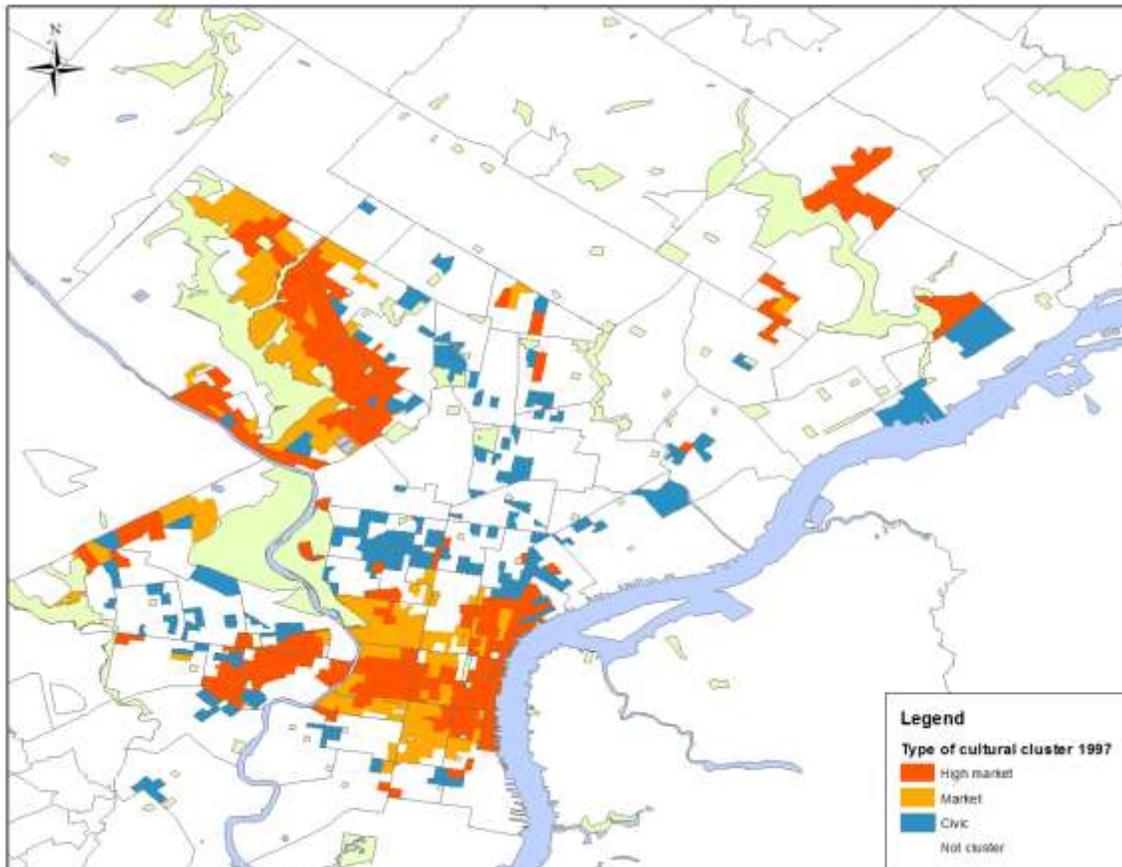


Cultural Clusters—Urban Context and Typology, Philadelphia 1997 and 2010-12

We can use the cultural asset index (CAI) and corrected cultural asset index (CCAI) to construct a typology of cultural clusters based on location with respect to downtown and socio-economic status.

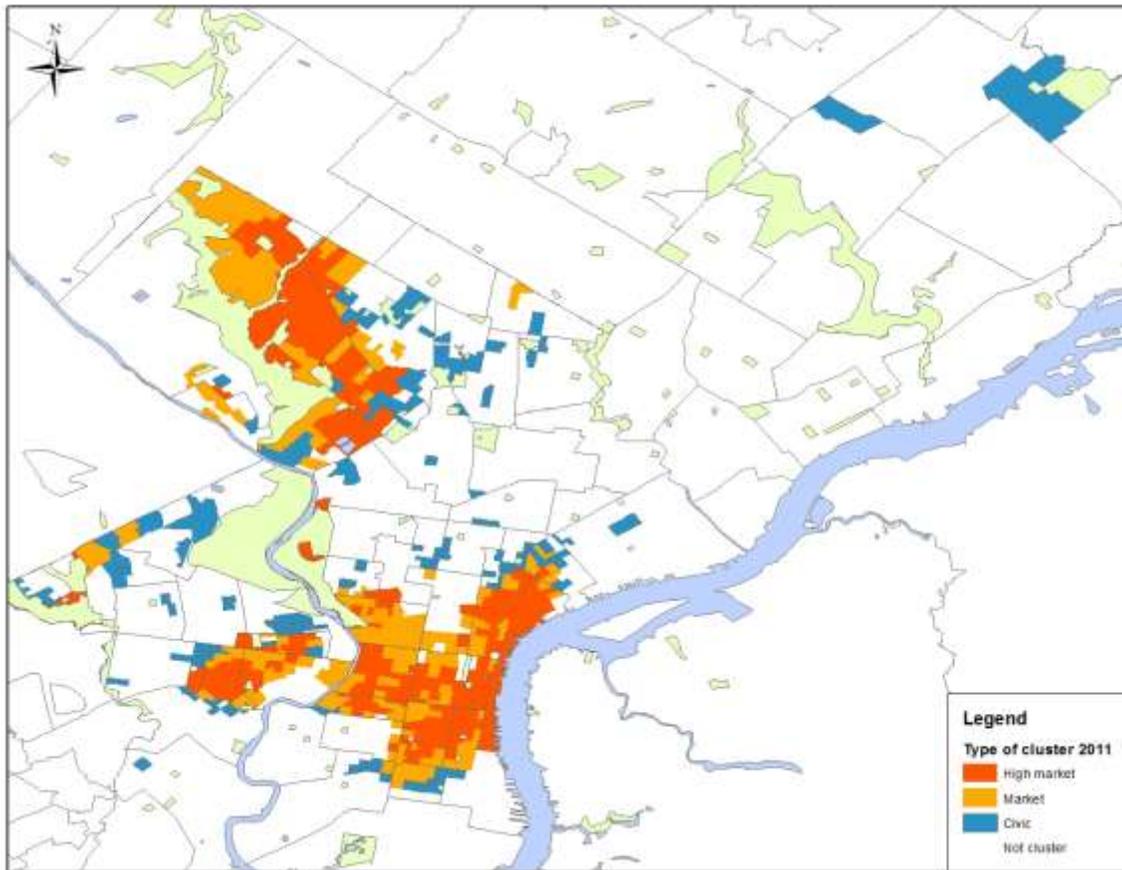
- *High market*—If a block group is in the top 20 percent on both indexes, we classify it as high market because it is relatively advantaged but assets still exceed the CAI predicted based on location and income.
- *Market*—Other block groups in the top 20 percent on the CAI we classify as market clusters because they have high concentrations of cultural assets consistent with their relative location and income.
- *Civic*—Finally, block groups that are in the top 20 percent only on the CCAI we call civic clusters because they are disadvantaged neighborhoods that exceed our modest expectations about their cultural assets.

Figure 3-19. Types of cultural clusters, Philadelphia block groups 1997



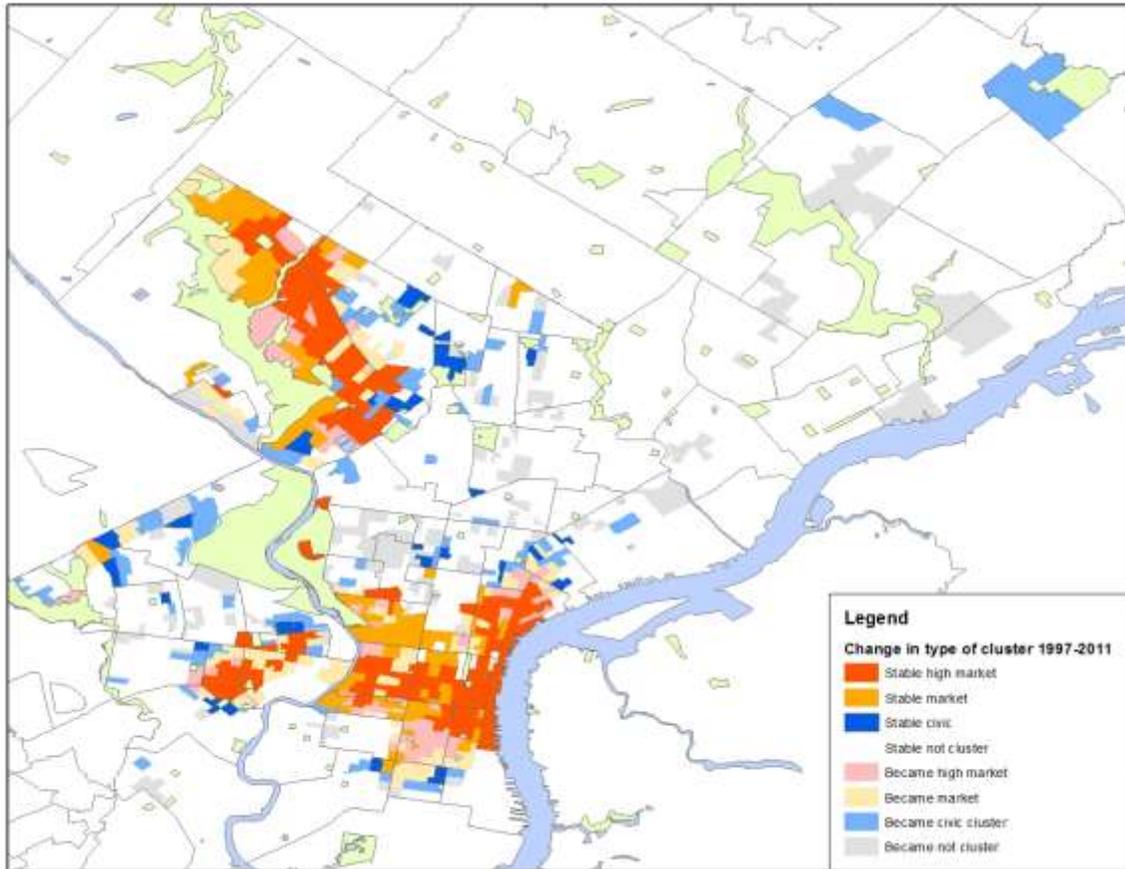
Because of their income and location status, civic clusters tend to foster community engagement but are less likely to generate high levels of economic activity. In addition, because of the relatively low number of cultural resources in these neighborhoods, civic clusters tend to be more volatile than the market-based clusters. However, a comparison of the 1997 and 2010-12 maps makes it clear that something more is at work.

Figure 3-20. Types of cultural clusters, Philadelphia block groups 2012



The areas of the city that became civic clusters between 1997 and 2010-12 were generally close to existing clusters, especially in Wynnefield (West Philadelphia near City Line Ave), Kensington (East Philadelphia), and Northwest Philadelphia. Meanwhile, most of the civic clusters that had been present in West and North Philadelphia in the late 1990s suffered a decline in the concentration of cultural assets. Where in 1997, clusters of various types were scattered around the city, by 2010-12 they encompassed a much smaller share of the city.

Figure 3-21. Change in type of cultural cluster, Philadelphia block groups 1997 to 2010-12



Change in Cultural Assets, Philadelphia 1997 to 2010-12—Geographic Features

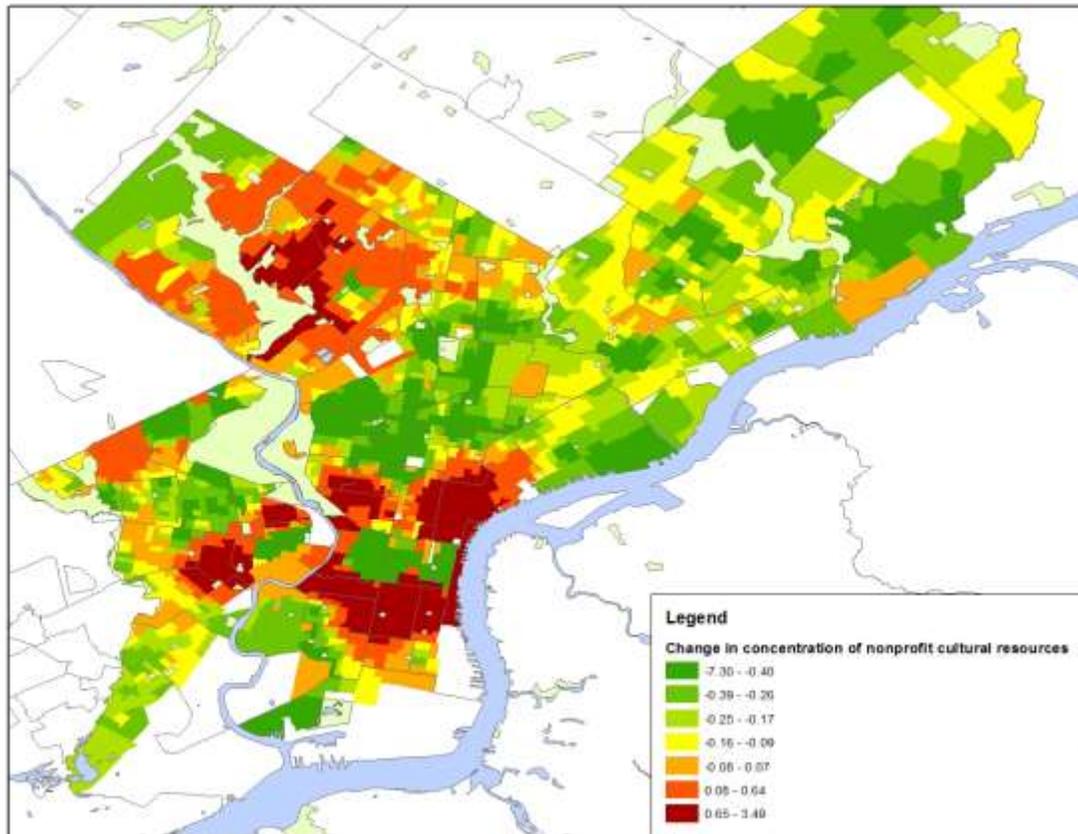
In this section, we look at the changing location and concentration of cultural assets across the city from 1997 to 2012. Here we are interested in the geography of change. In what neighborhoods did concentrations of particular types of resources remain stable and in what neighborhoods did they change?

Nonprofit cultural resources

During the years from 1997 to 2010-12, the concentration of nonprofit cultural resources remained relatively stable across the city. At the neighborhood level, the correlation between the standardized number of nonprofits in the two years was .72. As shown on the following scatterplot, to the extent that a neighborhood was above the regression line, it suggested that the concentration of nonprofits was above average, while neighborhoods below the line experienced a relative decline in that concentration. By this standard, Center City lost ground, although it remained the locus of a large share of the region's nonprofit cultural activity. Neighborhoods near Center City—Schuylkill-Southwest, Wharton, Fairmount, and Pennsport—enjoyed significant increases in their concentration of nonprofit cultural resources. A set of neighborhoods somewhat farther removed from the center—such as Cedar Park, Fishtown, and Germantown—also enjoyed substantial gains over these years.

The map of change in concentration of nonprofit resources by block group between 1997 and 2010-12 (Figure 3-23) reflects this same pattern. Center City lost ground relative to the neighborhoods immediately surrounding it but remained the dominant location of nonprofit cultural providers. More significantly, perhaps, are the swaths of West and North Philadelphia that formerly had some representation of nonprofit arts and culture but lost ground between during these years.

Figure 3-23. Change in concentration of nonprofit cultural resources, Philadelphia block groups 1997 to 2012



Commercial cultural firms

Center City held its own between 1997 and 2010-12 with respect to commercial culture. Where its dominance among nonprofits slipped, Center City actually increased its lead in terms of commercial firms, especially east of Broad Street. Again, the most significant increases in concentration occurred in neighborhoods bordering Center City. Callowhill/Chinatown North experienced the most rapid change. In 1997 representation by commercial culture in Callowhill/Chinatown North was actually below the citywide average, but by 2010-12 it was higher than any neighborhood save Center City. Fishtown and Schuylkill-Southwest also enjoyed healthy growth. Still, as shown on the map that follows, the overall distribution of for-profit firms citywide did not change dramatically.

Figure 3-24. Scatterplot of Philadelphia neighborhoods, commercial culture concentration 1997 by commercial concentration in 2010-12

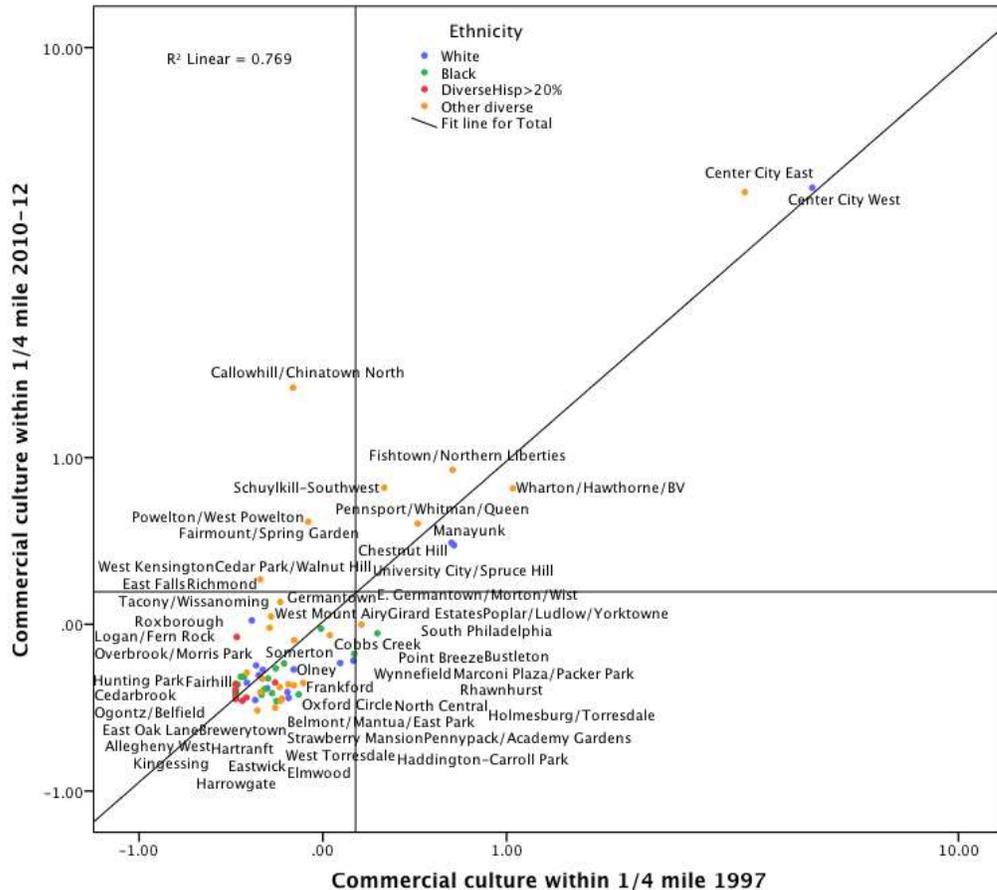
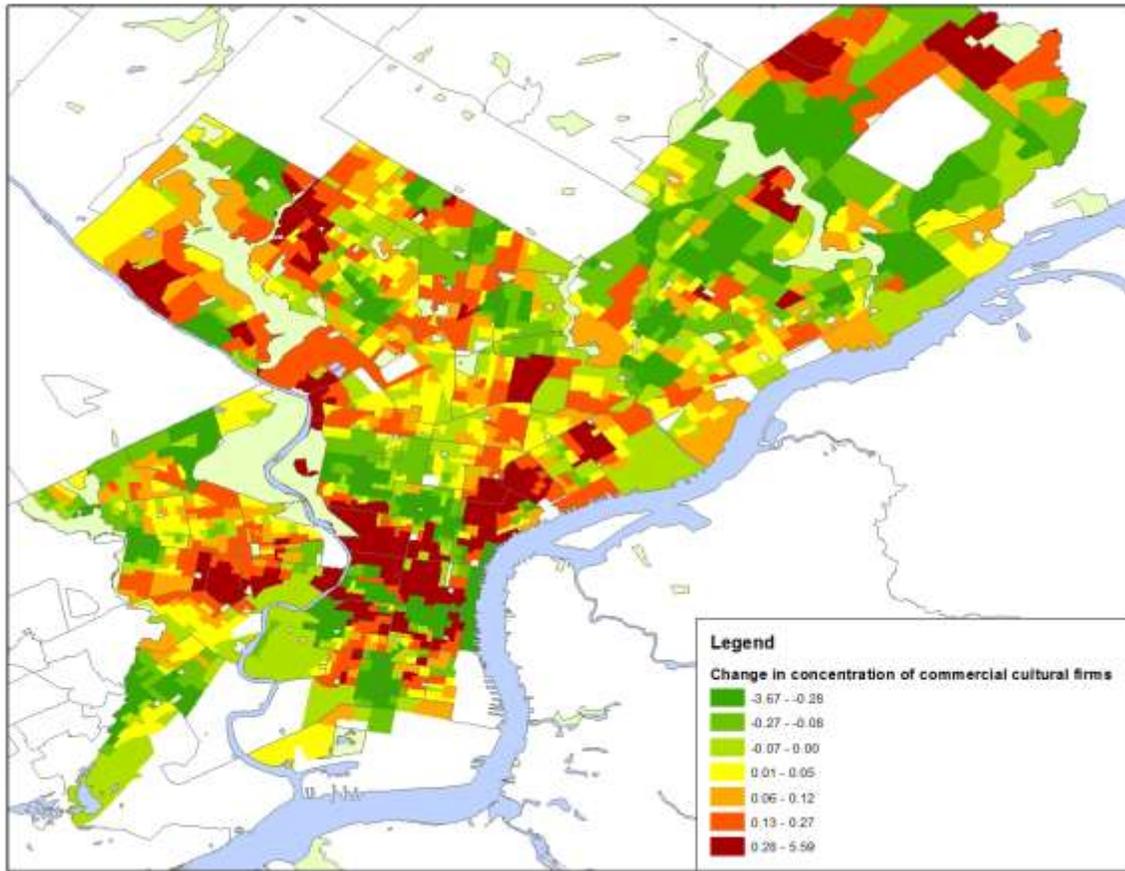


Figure 3-25. Change in concentration of commercial cultural firms, Philadelphia block groups 1997 to 2012



Resident artists

Resident artists represented the most dynamic element of the cultural ecology of the city between 1997 and 2010-12. In contrast to nonprofit organizations and commercial enterprises, which generally remained concentrated in the same sections of the city, artists relocated to a set of new neighborhoods during these years.

The most striking growth was in West Philadelphia beyond the University of Pennsylvania. In 2010-12 Cedar Park/Walnut Hill showed the highest concentration of resident artists. During this period, several neighborhoods that had a low number of artists in 1997—like South Philadelphia (below Morris St), West Kensington, and Elmwood—also became leading homes for Philadelphia artists. Meanwhile, several neighborhoods that had in 1997 been home to many artists—including Fairmount, Pennsport, and Powelton—saw their concentrations decline. From these areas, artists appear to have migrated a bit farther from Center City, for example, to Brewerytown in North Philadelphia and to University City/Spruce Hill in West Philadelphia.

Figure 3-26. Scatterplot of Philadelphia neighborhoods, resident artist concentration 1997 by artist concentration in 2010-12

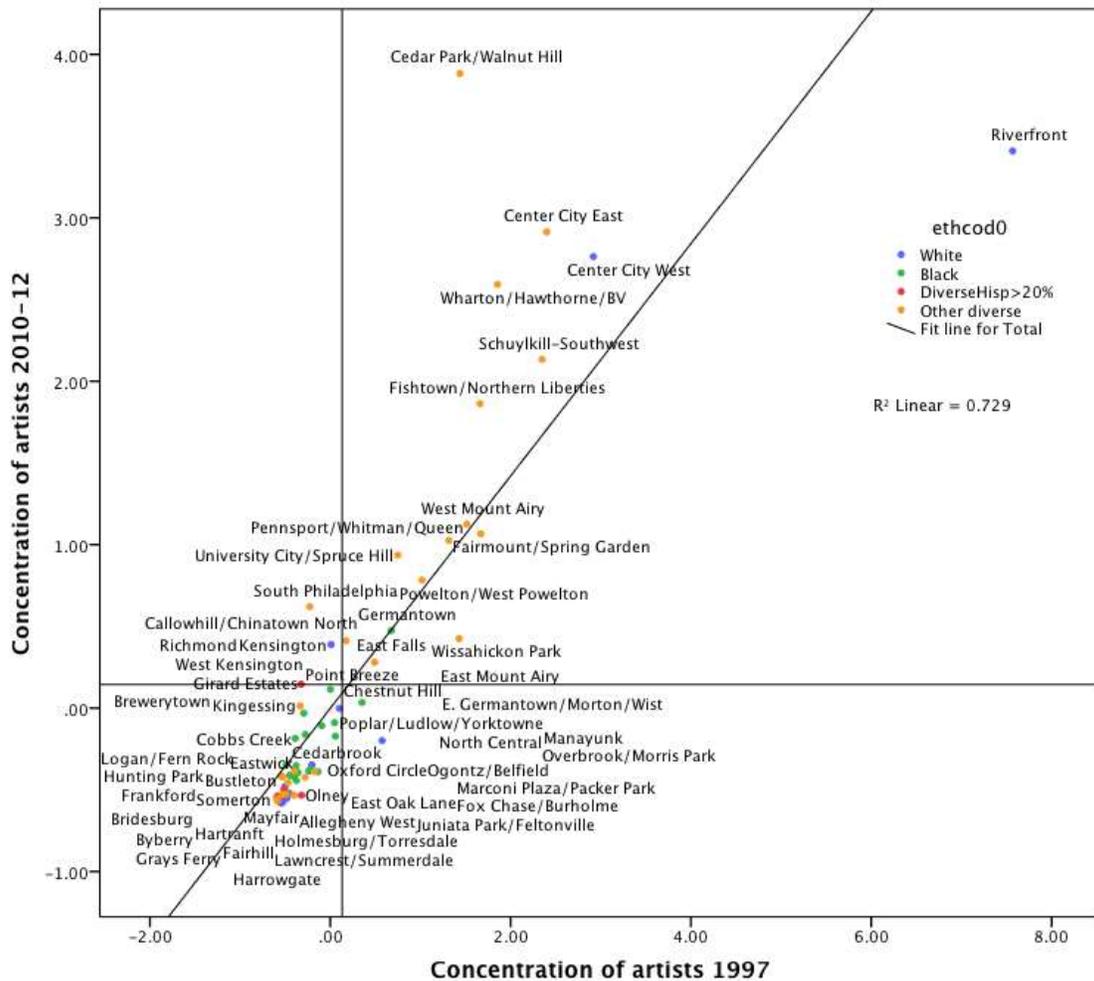
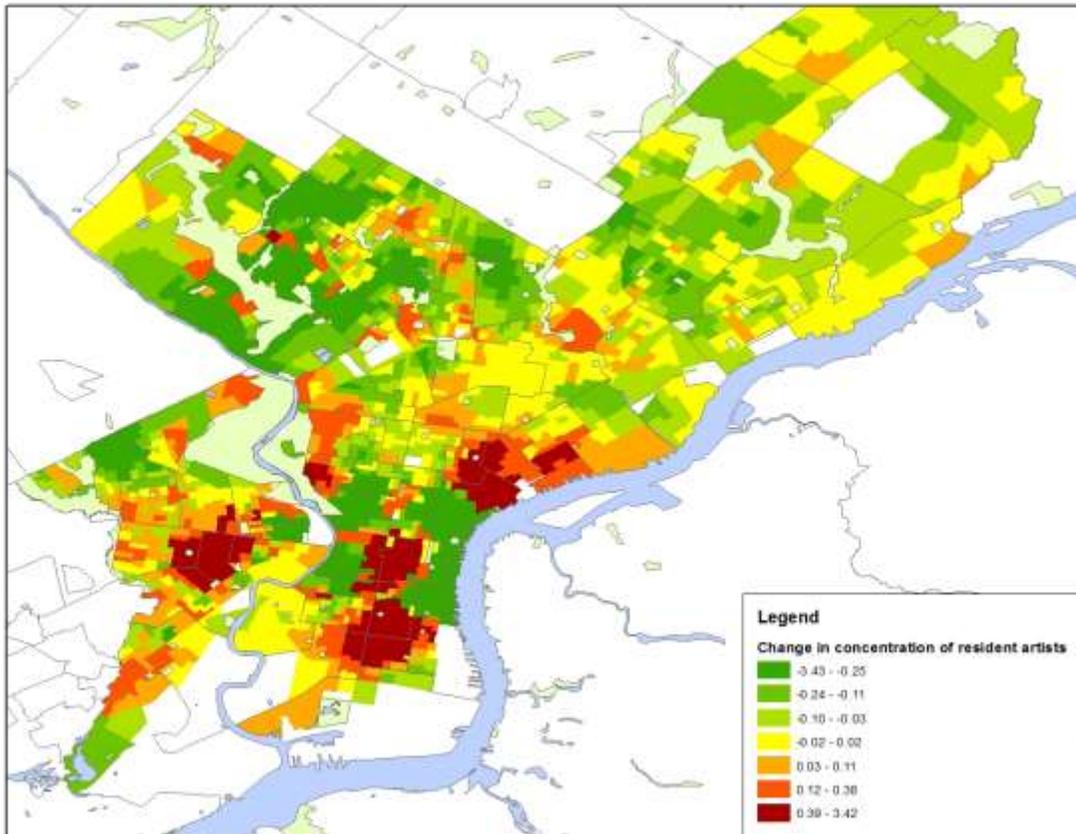


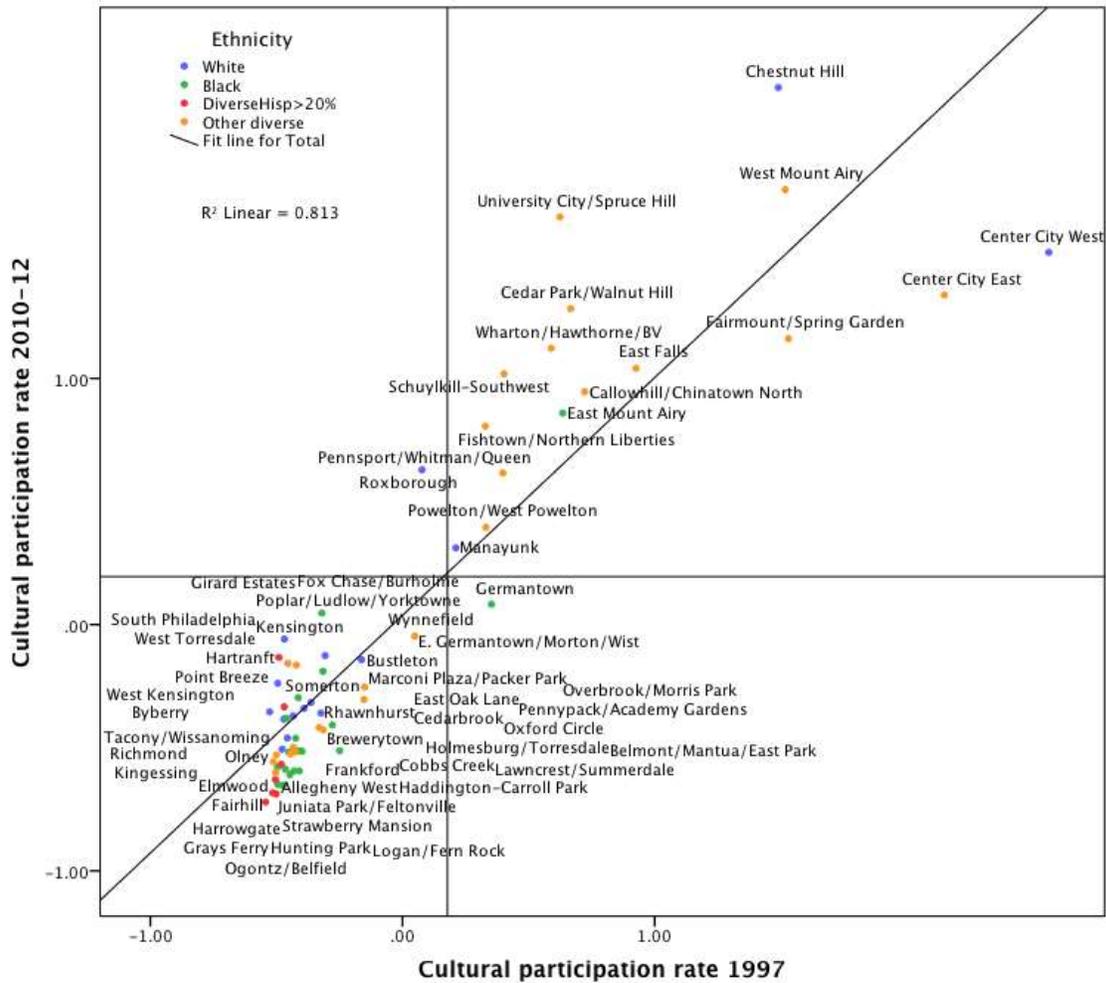
Figure 3-27. Change in concentration of resident artists, Philadelphia block groups 1997 to 2012



Cultural participation rate

Overall, the geography of cultural participation remained relatively stable between 1997 and 2010-12. Most neighborhoods with high participation in 1997 remained so in the later period, and the same was true of areas with lower participation rates. This pattern is indicated in the following plot by the virtual absence of any neighborhoods in the upper left and lower right quadrants. In addition, a high r-square indicates that a community's participation rate in 1997 was a good predictor of its rate in 2010-12.

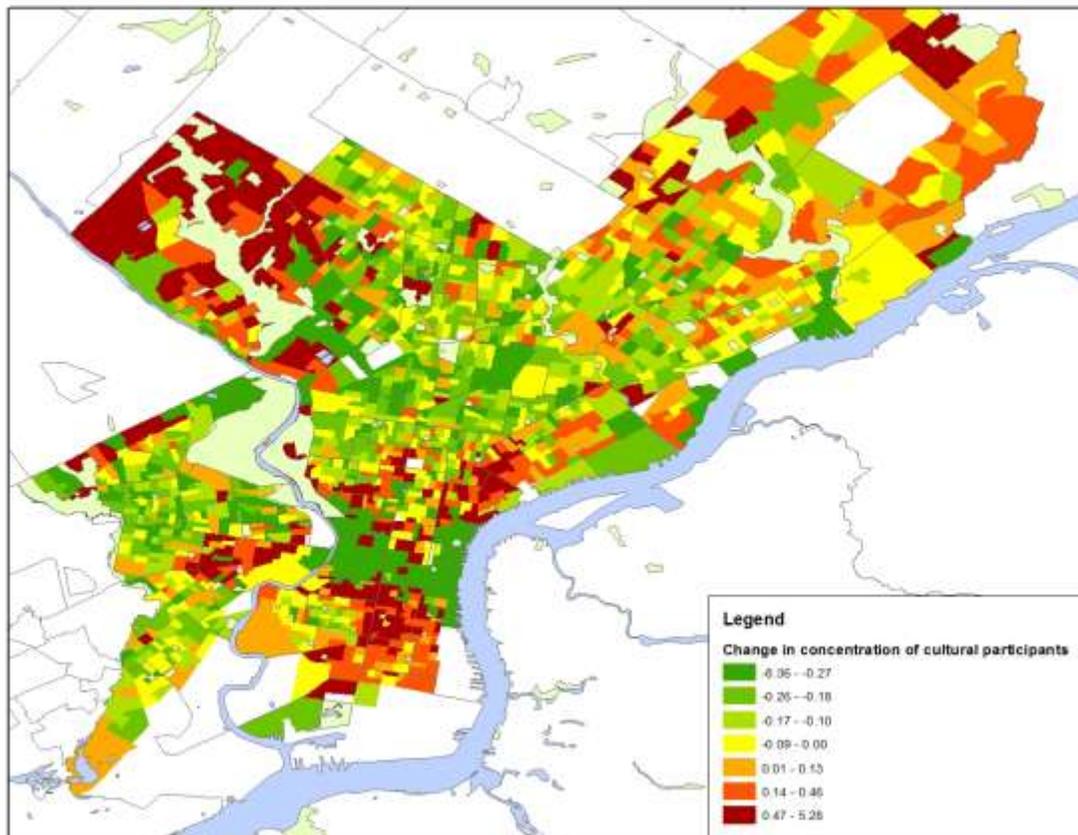
Figure 3-28. Scatterplot of Philadelphia neighborhoods, cultural participation rate 2010 by participation rate 1997



A closer look, however, shows a set of neighborhoods outside of Center City that stood out for significant increases in participation. In West Philadelphia, both University City and Cedar Park/Walnut Hill had larger than average increases in the concentration of participants. In South Philadelphia, Schuylkill-Southwest and Wharton/Hawthorne/Bella Vista stood out. Neighborhoods northeast of Center City—Fishtown/Northern Liberties—also had higher participation in 2010-12 than their earlier rates would have predicted.

Finally, neighborhoods with the highest participation rates in 1997—Chestnut Hill and to a lesser extent West Mount Airy—enjoyed an increased concentration of participants. Meanwhile, Center City lost some ground compared to the rest of the city.

Figure 3-29. Change in concentration of cultural participants, Philadelphia block groups 1997 to 2010



Cultural asset index (CAI)

As analysis of the individual indicators would lead us to expect, the overall cultural asset index remained quite stable over the 15-year period. By and large, a neighborhood's index in 1997 remained a very good predictor of its score in 2010-12. Again, Center City lost a bit of ground relative to its proximate neighborhoods but still remained at the top of the index. By contrast, a set of neighborhoods mentioned above—Cedar Park/Walnut Hill, Wharton/Hawthorne/Bella Vista, Fishtown/Northern Liberties, and Callowhill/Chinatown North—exceeded their 1997 scores.

The map below shows these increases most clearly. Clusters with an above average increase in the CAI were present to the northeast, northwest, west, and south of Center City as well as in Northwest Philadelphia. Again, sections of North Philadelphia and West Philadelphia—especially a group of homogeneous African American neighborhoods—had lower rates in 2010-12 than their 1997 scores would have predicted. Clearly, except for Center City, neighborhoods that already had a density of cultural assets grew stronger during these years, while those with fewer assets fell farther behind.

Figure 3-30. Change in cultural asset index (CAI), Philadelphia block groups 1997 to 2012

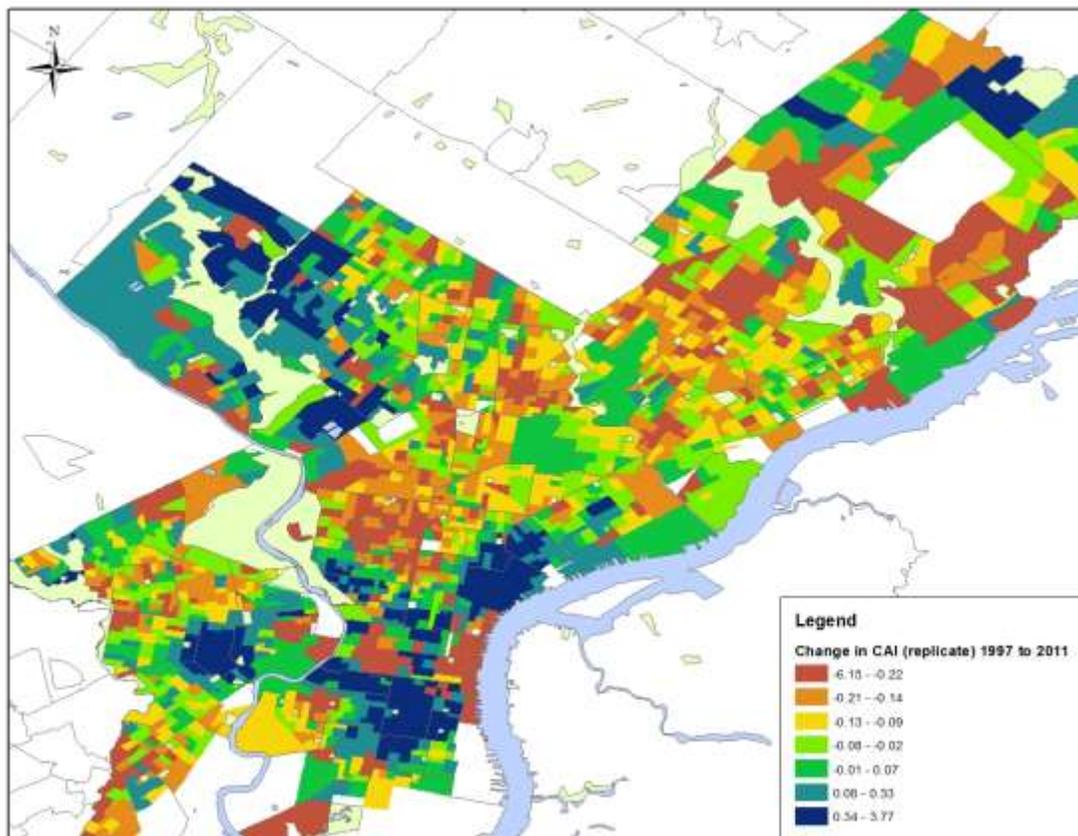
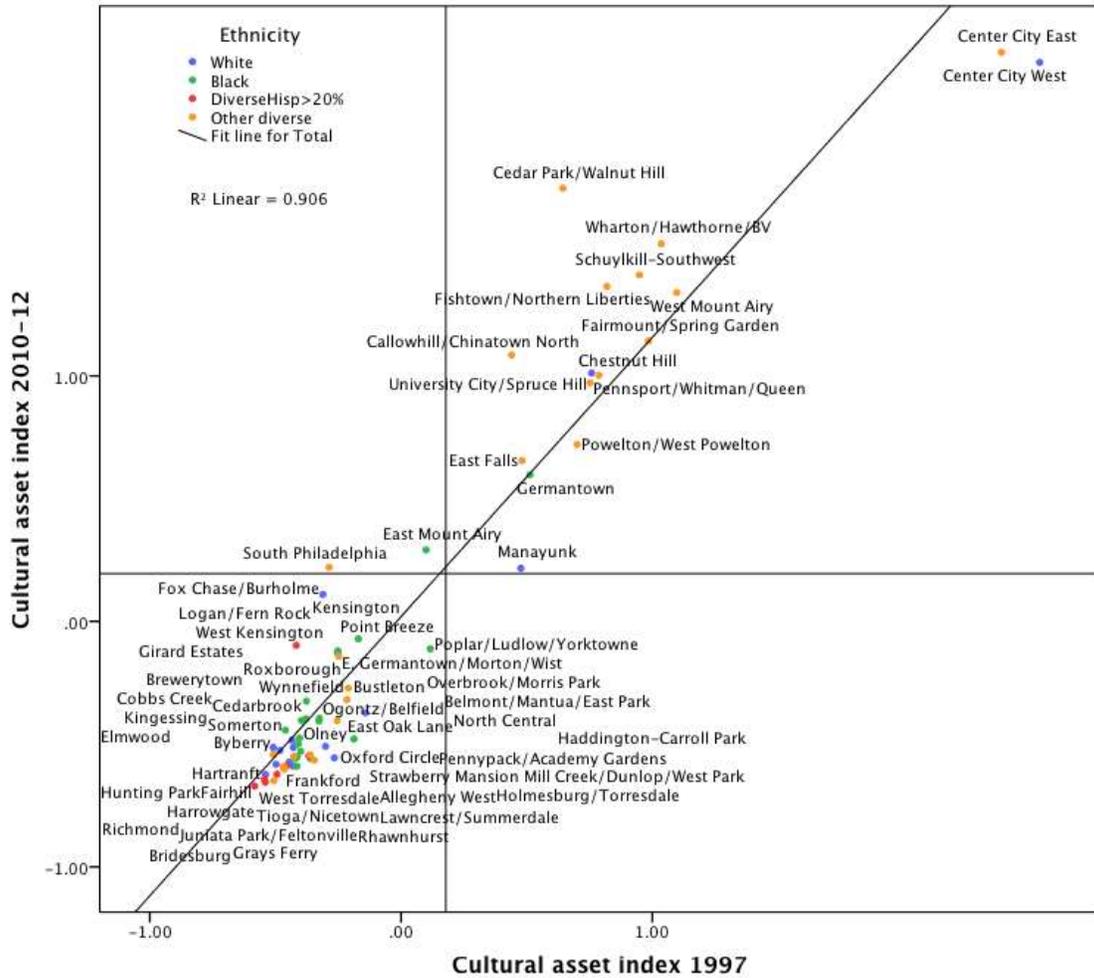


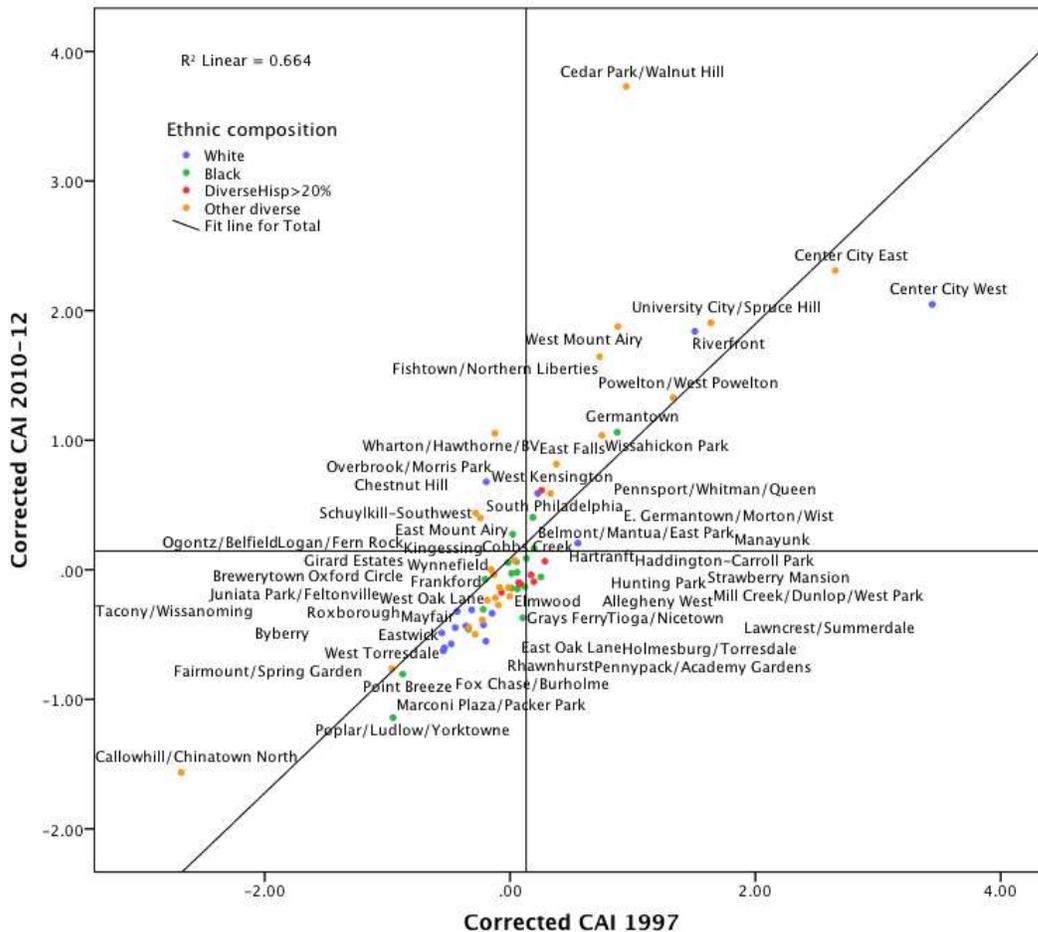
Figure 3-31. Scatterplot of Philadelphia neighborhoods, cultural asset index (CAI) 2010-12 by CAI 1997



Corrected cultural asset index (CCAI)

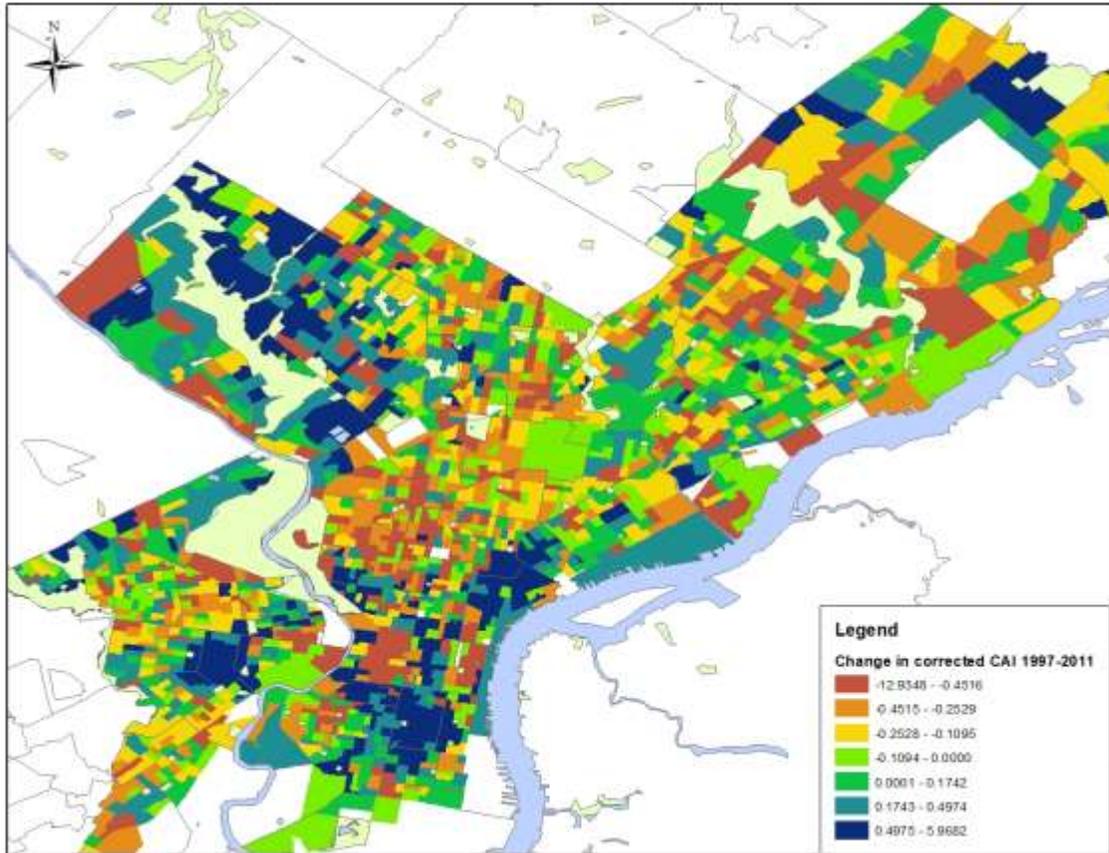
The corrected cultural asset index changed more between 1997 and 2010-12 than our other cultural indicators. Although most neighborhoods that had high or low scores were stable, a few neighborhoods moved up and a larger share of neighborhoods moved down. As shown on the plot below, several neighborhoods that had below average CCAI's in 1997—including Chestnut Hill, Schuylkill-Southwest and Wharton/Hawthorne/Bella Vista—had above average scores by 2010-12. More striking are a number of African American and Latino neighborhoods—like Hartranft, Strawberry Mansion, and Haddington—that saw their index decline sharply during the decade.

Figure 3-32. Scatterplot of Philadelphia neighborhoods, corrected cultural asset index (CCAI) 2010-12 by CCAI 1997



During this 15-year period, declines in the corrected cultural asset index were especially high in North Philadelphia west of Broad Street and in sections of the Northeast. In other words, during the 1990s these neighborhoods were defeating the odds with respect to concentration of cultural assets given their economic and location disadvantages. That is no longer true.

Figure 3-33. Change in corrected cultural asset index (CAI), Philadelphia block groups 1997 and 2012



Neighborhood Cultural Ecology, Philadelphia 1997 to 2012—A Multivariate Analysis

To this point, the analysis supports two conclusions. First, the geography of the cultural sector remained fairly stable between 1997 and 2010-12. Second, to the extent that there was change, the distribution of cultural assets across the city grew less equal. The gap between neighborhoods with many and those with few cultural resources widened during these years. The increasing gap also changed the balance between the presence of cultural assets, measures of economic inequality, and measures of diversity.

Predicting cultural asset index in 1997 and 2010-12: The role of economic inequality and social diversity

In order to gauge the relative importance of economic inequality and diversity in determining a neighborhood's cultural asset score, we calculated multivariate models for 1997 and 2010-12 CAI with percent of adults with a college degree, ethnic composition, and measures of economic and household diversity (using 2000 data for the 1997 model and 2005-09 for the 2010-12 model). The relative explanatory power of these variables changed significantly between the two years. In 1997, educational attainment and household diversity had equal explanatory power with Beta-squares of .123 and .122, respectively. In other words, they each explained about 12 percent of the variance in the CAI. Ethnic composition and economic diversity influence were not statistically significant.

By 2010-12, things had changed. Educational attainment's explanatory power had nearly doubled, from .123 to .230, while that of household diversity had fallen from .122 to .046. Ethnic composition, which had not been statistically significant in 1997, was significant in 2010-12 but still did not have a large impact on cultural assets with a beta-square of .01.

Table 3-34. CAI 1997 and CAI 2010-12 by percent of adults with a college degree (controlling for ethnic composition, economic diversity, and household diversity)

	CAI 1997			CAI 2010-12		
Educational attainment	N	Unadjusted	Adjusted	N	Unadjusted	Adjusted
Bottom fifth	349	-0.335	-0.219	398	-0.417	-0.334
20-39%	352	-0.308	-0.203	353	-0.363	-0.274
40-59%	351	-0.252	-0.163	316	-0.264	-0.213
60-79%	351	-0.127	-0.093	303	-0.162	-0.141
Top fifth	349	1.004	0.658	376	1.147	0.914
eta/beta		0.534	0.35		0.604	0.48
eta/beta square		0.285	0.123		0.365	0.230

Note: Analysis used 2000 data for the 1997 model and 2005-09 data for the 2010-12 model.

When controlled for the other variables in the analysis, the adjusted CAI in 1997 ranged from -.22 to .66 standard deviations. By 2010-12 this gap had grown from .88 to 1.57 standard deviations (-.42 to 1.15). In short, by the 2010s economic inequality among the city's block groups was the commanding influence on their cultural asset score.

Modeling change in individual cultural indicators—cultural district status and socio-economic status

In this section, we ask what factors are associated with change over time in a neighborhood's cultural ecology. We use a multivariate model to evaluate the relationship of change in our cultural asset indicators to socio-economic variables. Our basic model examines the ways in which cultural assets in 1997 (as measured by type of cultural district) and socio-economic status (as measured by the concentration of college graduates) influence the indicators. We then examine the influence of our diversity factors—economic diversity, ethnic composition and change, household diversity and change, and renter percent (controlled for income)—when controlled for cultural district status and socio-economic status.

Cultural district status and educational attainment were consistent predictors of the change in cultural indicators between 1997 and 2010-12. As we have found, the status of a district in 1997 will influence how it might change over time. In addition, privileged neighborhoods will have different trajectories with respect to cultural development.

These two variables were also correlated. Sixty-five percent (65%) of the high educational attainment block groups were either high market or market districts, although these districts made up only 20 percent of the city's block groups. Civic and non-cluster block groups were over-represented among block groups with lower educational attainment.

As we expected, both of these variables had a very strong influence on the likelihood that the four basic cultural indicators—nonprofits, commercial, artists, and participants—would change over time. The two variables most strongly predicted changes in the location of nonprofits (with an R-square of .149). Although the two variables had a much weaker predictive value for the other cultural indicators (they explained only 2 to 3 percent of variance), all four models were all statistically significant.

Type of district in 1997 consistently influenced change in these cultural asset indicators between 1997 and 2010-12. However, when we take district type into consideration, percent of college graduates was not as strong an influence. Although statistically significant for all four indicators, percent college graduates' ability to predict either nonprofit or commercial culture growth was quite marginal. In fact, only its association with changes in the concentration of resident artists merits attention.

The fastest growth in cultural assets overall occurred in the block groups classified in 1997 as market districts. Nonprofits, for-profits, and cultural participation rates all increased most quickly in these neighborhoods. By contrast, civic clusters—low-income

neighborhoods with relatively high levels of cultural resources—enjoyed a significant increase in their concentration of artists, but not in the other indicators.

The only indicator for which percent of college graduates had much of an influence was change in resident artists. The notable pattern here, however, was a significant decline in concentration of resident artists in neighborhoods with many college graduates. In the top 20 percent of college-grad block groups, resident artists declined by .16 standard deviations, while their concentration increased modestly in neighborhoods with fewer graduates. As we saw above, artists appear to have moved south, west, and north from Center City during this period.

Table 3-35a. Multivariate analysis of change in individual cultural indicators, summary statistics Philadelphia block groups 1997-2012

Change in participation rate 1997-2012		Eta-square	Beta-square/ R-square	Sig.
	(Combined)		0.032	0.000
	Type of cultural district 1997	0.027	0.028	0.000
	BA plus 2000 (quintiles)	0.005	0.006	0.046
Change in for-profits 1997-2012				
	(Combined)		0.025	0.000
	Type of cultural district 1997	0.019	0.013	0.000
	BA plus 2000 (quintiles)	0.013	0.009	0.029
Change in nonprofits 1997-2012				
	(Combined)		0.149	0.000
	Type of cultural district 1997	0.139	0.158	0.000
	BA plus 2000 (quintiles)	0.018	0.011	0.001
Change in resident artists 1997-2012				
	(Combined)		0.032	0.000
	Type of cultural district 1997	0.015	0.004	0.000
	BA plus 2000 (quintiles)	0.027	0.025	0.000

Note: Results of multivariate analysis of variance

Table 3-35b. Multivariate analysis of change in individual cultural indicators, unadjusted and adjusted means, Philadelphia block groups 1997-2012

			Predicted Mean		
Change in participation rate 1997-2012			N	Unadjusted	Adjusted for Factors
Type of cultural district 1997	High market	201	-0.160	-0.143	
	Market	149	0.381	0.396	
	Civic	146	0.023	0.036	
	Not cluster	1241	-0.022	-0.028	
BA plus 2000 (quintiles)	Bottom fifth	342	-0.054	-0.042	
	20-39%	346	-0.032	-0.022	
	40-59%	348	-0.004	0.009	
	60-79%	351	0.103	0.107	
	Top fifth	350	-0.014	-0.052	
Change in for-profits 1997-2012					
Type of cultural district 1997	High market	201	-0.002	-0.054	
	Market	149	0.212	0.168	
	Civic	146	-0.034	-0.017	
	Not cluster	1241	-0.021	-0.009	
BA plus 2000 (quintiles)	Bottom fifth	342	-0.024	-0.016	
	20-39%	346	-0.019	-0.014	
	40-59%	348	-0.052	-0.047	
	60-79%	351	-0.007	-0.007	
	Top fifth	350	0.103	0.084	
Change in nonprofits 1997-2012					
Type of cultural district 1997	High market	201	0.045	0.108	
	Market	149	0.987	1.040	
	Civic	146	-0.114	-0.113	
	Not cluster	1241	-0.107	-0.124	
BA plus 2000 (quintiles)	Bottom fifth	342	-0.139	-0.040	
	20-39%	346	-0.062	0.023	
	40-59%	348	-0.052	0.025	
	60-79%	351	0.125	0.135	
	Top fifth	350	0.141	-0.125	

Change in resident artists (difference of z scores) 1997-2012					
	Type of cultural district 1997	High market	201	-0.169	-0.069
		Market	149	-0.013	0.072
		Civic	146	0.085	0.048
		Not cluster	1241	0.019	-0.004
	BA plus 2000 (quintiles)	Bottom fifth	342	0.047	0.041
		20-39%	346	0.065	0.061
		40-59%	348	0.057	0.056
		60-79%	351	-0.002	0.000
		Top fifth	350	-0.166	-0.157

Note: Results of multivariate analysis of variance with multiple classification analysis.

Modeling change in individual cultural indicators: Measures of neighborhood diversity

Economic diversity

The economic diversity of a neighborhood had a significant impact on how three of the four types of cultural assets changed over time. The exception was change in the number of nonprofits. Economic diversity had roughly the same influence on change in participation rate and concentration of commercial culture as percentage of college graduates did. Although significant, its influence on resident artists was less than one percent. For the three indicators for which it was statistically significant, the influence of economic diversity was consistent, increasing the concentration of each type of asset by about around .12 to .15 standard deviations.

Table 3-36. Multivariate analysis of change in individual cultural indicators: Economic diversity, summary statistics and unadjusted and adjusted means, Philadelphia block groups 1997-2012

Economic diversity				
		eta square	Beta square	sig
Change in participation rate (z-scores) 1997-2011		0.005	0.004	0.007
Change in for-profits (z-scores) 1997-2011		0.010	0.009	0.000
Change in nonprofits (z-scores) 1997-2011		0.002	0.000	0.929
Change in resident artists (difference of z-scores) 1997-2011		0.004	0.006	0.001

	Not econ diverse		Econ diverse	
	Unadjusted	Adjusted for Factors	Unadjusted	Adjusted for Factors
Change in participation rate (z-scores) 1997-2011	-0.018	-0.017	0.155	0.147
Change in for-profits (z-scores) 1997-2011	-0.016	-0.015	0.139	0.127
Change in nonprofits (z-scores) 1997-2011	-0.008	0.003	0.105	0.009
Change in resident artists (difference of z-scores) 1997-2011	-0.011	-0.015	0.091	0.119

Household diversity

A neighborhood's household diversity had a modest influence on change in our cultural asset indicators, after cultural district status and educational attainment are taken into consideration. Household diversity most strongly predicted changes in the participation rate (beta square of .038) and nonprofit concentration (beta square of .055). Sections of the city that *became* household diverse between 2000 and 2005-09 had the largest increases in participation rate and nonprofit concentration, presumably as more young adults moved into these neighborhoods. Sections of the city that were *always* household diverse (in both years), however, experienced declines in both participation and nonprofits. Still, they remained among the neighborhoods with the highest cultural indexes.

The relationship of household diversity to change in commercial culture concentration followed a different trajectory. Cultural businesses increased most in sections of the city that *ceased* to be household diverse, but they also fell in sections that were *never* diverse (in either year).

Table 3-37. Multivariate analysis of change in individual cultural indicators: Household diversity, summary statistics and unadjusted and adjusted means, Philadelphia block groups 1997-2012

Household diversity change			eta square	beta square	sign
Change in participation rate (z-scores) 1997-2011			0.022	0.038	0.000
Change in for-profits (z-scores) 1997-2011			0.030	0.026	0.000
Change in nonprofits (z-scores) 1997-2011			0.032	0.055	0.000
Change in resident artists (difference of z-scores) 1997-2011			0.007	0.005	0.047

	Not adjusted			
	Household diversity 2000 to 2005-09			
	Never HH diverse	Formerly HH diverse	Became HH diverse	Always HH diverse
Change in participation rate (z-scores) 1997-2011	0.023	-0.308	0.106	-0.500
Change in for-profits (z-scores) 1997-2011	-0.028	0.359	0.228	0.142
Change in nonprofits (z-scores) 1997-2011	-0.005	0.354	0.399	-0.489
Change in resident artists (difference of z-scores) 1997-2011	0.004	-0.005	0.074	-0.198

	Adjusted for Factors			
	Household diversity 2000 to 2005-09			
	Never HH diverse	Formerly HH diverse	Became HH diverse	Always HH diverse
Change in participation rate (z-scores) 1997-2011	0.039	-0.484	0.019	-0.639
Change in for-profits (z-scores) 1997-2011	-0.026	0.322	0.217	0.129
Change in nonprofits (z-scores) 1997-2011	0.038	-0.123	0.175	-0.897
Change in resident artists (difference of z-scores) 1997-2011	-0.011	0.166	0.117	-0.001

Ethnic composition

Since 2000 Philadelphia neighborhoods have undergone a significant change in ethnic composition. As Latino and foreign-born residents relocated to the city and a significant number of whites left, a majority of Philadelphians found that they were living in an ethnically diverse neighborhood.

However, when cultural district status and educational attainment of a block group are taken into consideration, change in the ethnic composition of block groups seems to have had little impact on changes in a neighborhood’s cultural assets. Although the relationship is statistically significant for all four indicators, the highest correlation—with commercial cultural firms—explains only two percent of the variance. For the other three indicators, the beta-square ranged from only .011 to .013.

Table 3-38. Multivariate analysis of change in individual cultural indicators: Ethnic composition, summary statistics, Philadelphia block groups 1997-2012

Ethnic composition change	Eta square	Beta square	sig
Change in participation rate	0.014	0.011	0.011
Change in for-profits	0.021	0.020	0.000
Change in nonprofits	0.016	0.011	0.003
Change in resident artists	0.013	0.013	0.002

Neighborhoods that remained African American or became predominantly African American during the 2000s were the big losers with respect to their cultural infrastructure. In *stable black* neighborhoods, cultural assets concentration declined across the board. However, when corrected for cultural district status and educational

attainment, nonprofit concentration shows an increase. The largest decline was rate of cultural participation, but decline in resident artists also was significant. Neighborhoods formerly diverse that became black had a similar profile.

Block groups that were stable diverse or shifted from black to diverse had the most positive changes, while other block groups presented a more mixed picture. Take, for example, neighborhoods that were Latino in 2005-09. On the one hand, these areas saw a fall in both concentration of nonprofits and rate of cultural participation. But at the same time, these neighborhoods saw an increase in concentration of resident artists and especially of commercial cultural enterprises.

Table 3-39. Multivariate analysis of change in individual cultural indicators: Ethnic composition, unadjusted and adjusted means, Philadelphia block groups 1997-2012

		Change in participation rate (z-scores) 1997-2011	Change in for-profits (z-scores) 1997-2011	Change in nonprofits (z-scores) 1997-2011	Change in resident artists (difference of z-scores) 1997-2011
Stable black	Unadjusted	-0.121	-0.052	-0.058	-0.009
	Adjusted	-0.110	-0.022	0.047	-0.051
Stable white	Unadjusted	0.038	-0.040	0.036	-0.070
	Adjusted	0.035	-0.064	-0.024	-0.030
Stable diverse	Unadjusted	0.068	0.079	0.051	0.068
	Adjusted	0.069	0.070	0.007	0.085
Black to diverse	Unadjusted	0.170	0.044	0.271	0.012
	Adjusted	0.133	0.044	0.195	-0.011
White to diverse	Unadjusted	0.054	-0.093	-0.171	-0.049
	Adjusted	0.034	-0.105	-0.195	-0.047
Diverse to black	Unadjusted	-0.097	-0.074	0.006	-0.050
	Adjusted	-0.090	-0.055	0.110	-0.068
Diverse to white	Unadjusted	0.003	0.029	0.130	-0.136
	Adjusted	0.012	-0.044	-0.092	-0.019
Stable or became Latino or API	Adjusted	-0.057	0.174	-0.260	0.099
	Adjusted for Factors	-0.047	0.203	-0.168	0.052

Percent renters (corrected for per capita income)

Corrected renter percent identifies better-off neighborhoods that have a relatively high proportion of rental units. Like household diversity, renter percent identifies sections of the city that have the higher degree of mobility associated with the emergence of grassroots cultural districts. In this analysis, we found that the rental factor influenced several dimensions of cultural engagement—in particular, cultural participation rate and presence of nonprofits.

Changes associated with corrected percent renters, however, are difficult to interpret. In neighborhoods with the lowest percent renters, participation rate increased but the other types of assets declined. Among the areas with the highest proportion of renters corrected for income, commercial culture and resident artists increased, but participation and nonprofits fell in relative terms.

Table 3-40. Multivariate analysis of change in individual cultural indicators: Corrected renter percent, summary statistics and unadjusted and adjusted means, Philadelphia block groups 1997-2012

Percent renters (corrected)	Eta-square	Beta-square	Sig.
Change in participation rate	0.024	0.037	0.000
Change in for-profits	0.015	0.012	0.001
Change in nonprofits	0.018	0.020	0.000
Change in resident artists	0.005	0.008	0.010

% Renters		Participation	Commercial	Nonprofits	Artists
Lowest quintile	Unadjusted	0.148	-0.025	-0.126	-0.038
	Adjusted for Factors	0.179	-0.027	-0.072	-0.051
20%-39%	Unadjusted	0.096	-0.026	-0.039	0.021
	Adjusted for Factors	0.123	-0.017	0.011	-0.005
40%-59%	Unadjusted	-0.012	-0.038	0.014	0.042
	Adjusted for Factors	-0.011	-0.032	0.034	0.017
60%-79%	Unadjusted	-0.038	-0.023	0.205	-0.047
	Adjusted for Factors	-0.051	-0.024	0.195	-0.042
Highest quintile	Unadjusted	-0.200	0.118	-0.036	0.022
	Adjusted for Factors	-0.250	0.105	-0.157	0.085

Cultural asset index (CAI) and corrected cultural asset index (CCAI)

Assessing the impact of socio-economic characteristics on our cultural asset indicators provides a detailed look at how Philadelphia’s cultural sector has changed during the early years of the 21st century. The diversity of these patterns, however, makes it difficult to draw clear conclusions.

In this section, we use our summary cultural indicators—the cultural asset index (CAI) and the corrected cultural asset index (CCAI)—to gain clarity on the major trends. In this analysis, we again first examine our basic model, which included cultural district status and socio-economic status (based on educational attainment), and then add measures of diversity.

Modeling change in CAI and corrected CAI—cultural district status and socio-economic status

As we have seen, type of cultural district had a strong influence on changes in the CAI and CCAI, while the influence of educational attainment was quite modest. Together the two variables explained 9.4 percent of the variance in each of our summary indicators; however, educational attainment was not a significant contributor to the CAI and provided only a marginal contribution to explaining the CCAI.

Table 3-41. Multivariate analysis of change in CAI and corrected CAI: Cultural district status and educational attainment: summary statistics, Philadelphia block groups 1997-2012

Cultural Asset Index (CAI)	eta-square	beta-square/ R-square	sig
Model		0.094	0.000
Type of cultural district 1997	0.090	0.082	0.000
BA plus 2000 (quintiles)	0.019	0.004	0.143
Corrected Cultural Asset Index (CCAI)			
Model		0.094	0.000
Type of cultural district 1997	0.192	0.252	0.000
BA plus 2000 (quintiles)	0.004	0.032	0.000

As suggested earlier, market districts made the biggest gains in cultural assets during these years. Controlling for educational attainment, market districts gained .43 standard deviations, while other cultural district categories lost ground.

Table 3-42. Multivariate analysis of change in CAI: Cultural district status and educational attainment: unadjusted and adjusted means, Philadelphia block groups 1997-2012

		N	Predicted Mean	
Change in CAI 1997-2011			Unadjusted	Adjusted for Factors
Type of cultural district 1997	High market	201	-0.039	-0.066
	Market	148	0.453	0.430
	Civic	145	-0.047	-0.030
	Not cluster	1240	-0.041	-0.036
BA plus 2000 (quintiles)	Bottom fifth	341	-0.068	-0.042
	20-39%	346	-0.025	-0.003
	40-59%	348	-0.044	-0.022
	60-79%	350	0.031	0.035
	Top fifth	349	0.109	0.035

Examining the CCAI, we find that the two types of districts that had high scores on this indicator in 1997—high market and civic clusters—appeared to gain ground by 2010-12. Indeed, controlling for education, high market districts change in the CCAI was nearly a full standard deviation above average. Civic clusters had a more modest increase. Again, educational attainment appeared to have no consistent influence on change in the summary indicators.

Table 3-43. Multivariate analysis of change in corrected CAI: Cultural district status and educational attainment: unadjusted and adjusted means, Philadelphia block groups 1997-2012

Change corrected Cultural Asset Index 1997-2010-12		N	Unadjusted	Adjusted for Factors
Type of cultural district 1997	High market			
	Market	148	-0.122	0.007
	Civic	145	0.435	0.373
	Not cluster	1240	-0.118	-0.150
BA plus 2000 (quintiles)	Bottom fifth	341	0.079	0.159
	20-39%	346	-0.029	0.063
	40-59%	348	0.026	0.108
	60-79%	350	-0.011	0.025
	Top fifth	349	0.086	-0.201

Measures of neighborhood diversity

Economic diversity

When the four indicators are combined, economic diversity becomes much less important. It's only marginally significant for the change in the CAI and—if we adjust for type of district and education—economically diverse block groups have only a slightly higher CAI than the rest of the city, while the change in the corrected CAI is actually lower.

Household diversity

When controlled for other influences, household diversity had some influence on the change in the CAI, with a beta-square of .03, but had no statistically significant impact on the change in the corrected CAI. As with the individual indicators, districts that were either formerly household diverse or became diverse improved their cultural asset index more than those that were either always (stable) diverse or homogeneous.

Table 3-44. Multivariate analysis of change in CAI: Household diversity: unadjusted and adjusted means, Philadelphia block groups 1997-2012

Cultural asset index		N	Unadjusted mean	Adjusted mean
Household diversity 2000 to 2005-09	Never HH diverse	1533	-0.0152	-0.0006
	Formerly HH diverse	30	0.3276	0.1497
	Became HH diverse	98	0.2741	0.2023
	Always HH diverse	73	-0.164	-0.3014

Ethnic composition

Changes in the ethnic composition of Philadelphia's block groups exerted a modest influence on their cultural indexes between 1997 and 2010-12. The CAI increased most in sections of the city that remained ethnically diverse or those that shifted from predominantly black to ethnically diverse. In contrast, stable black areas and those that shifted from predominantly white to diverse suffered the sharpest declines in their CAI. The corrected CAI rose in stable black neighborhoods and in those sections of the city that shifted from white to ethnically diverse. The sharpest declines in the corrected CAI were again in sections of the city that moved from diverse to predominantly white.

Percent renters (corrected for per capita income)

Although the corrected percent renters influenced some of the individual indicators, its influence on the CAI and corrected CAI was barely significant.

Cultural Organization Dynamics, Philadelphia 1997 to 2012

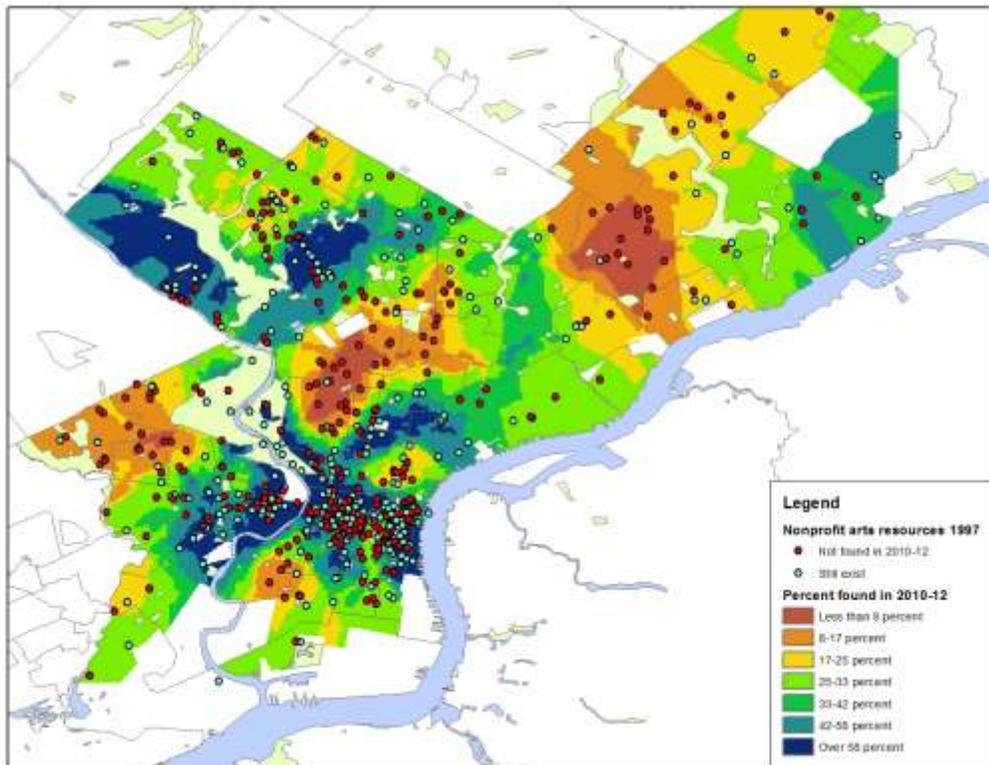
In the previous section, we examined the net change in a variety of cultural assets in Philadelphia between 1997 and 2010-12. Yet, by comparing two snapshots, we are capturing only part of the changes that occurred in the cultural ecology of the city during these years. These net effects are the result of organizations and enterprises that existed in 1997 going out of business and new ones coming into existence.

Ideally, we would track “deaths” and “births” for all the cultural asset categories. However, after a review of the data, we determined that we could use only two indicators of this type of dynamic. We tracked nonprofit organizations in our 1997 database to our 2010-12 inventory to estimate how many of these groups survived during this period. We also used our 2010-12 inventory to identify “emerging” organizations that we saw as relatively young at the time we compiled the data.

Organization survival, 1997 to 2012

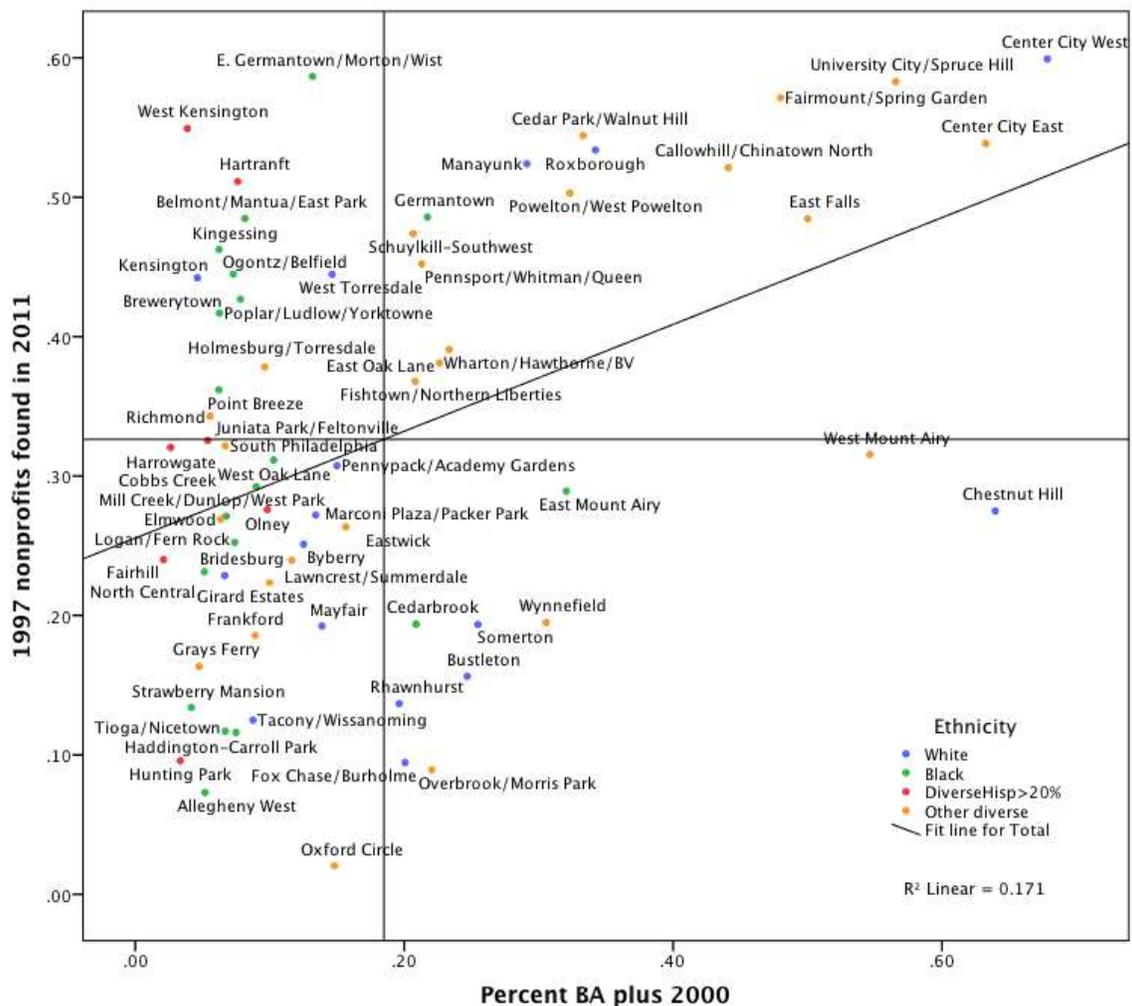
The geography of organizational survival is fairly clear. Center City and sections of West and Northwest Philadelphia had the highest rates of survival (well over 50 percent), while West Philadelphia beyond 52nd Street, much of North Philadelphia west of Broad, and the lower Northeast had the lowest rates. The one anomaly was Latino sections of North Philadelphia that enjoyed relatively high rates of organizational survival.

Figure 3-45. 1997 cultural nonprofits found in 2012, percent survival by neighborhood, Philadelphia



A plot of the nonprofit survival rate by the socio-economic status of neighborhoods makes this point more clearly. Overall, we found a positive relationship between a neighborhood's educational attainment and the survival rate of its nonprofit cultural organizations. Several black neighborhoods (East Germantown, Belmont) and a cluster of neighborhoods with large Latino populations (West Kensington, Hartranft), however, disrupted this pattern. Organizational continuity in the anomalous black neighborhoods is likely associated with the presence of historic sites in these areas (Germantown and Fairmount Park). But that doesn't explain why the diverse neighborhoods of Hartranft and West Kensington are beating the odds.

Figure 3-46. Scatterplot of Philadelphia neighborhoods, cultural nonprofit survival rate 1997 to 2012 by educational attainment 2000



If we control socio-economic variables using multivariate analysis, we find that only four of the variables—type of cultural district, household diversity, ethnic composition, and corrected percent renters—had a significant impact on a neighborhood’s nonprofit culture survival rate.

Table 3-47. Multivariate analysis of nonprofit survival rate: Summary statistics, Philadelphia block groups 1997-2012

	Eta squared	Beta squared	Sig.
Type of cultural district 1997	0.145	0.047	0.000
Percent with a BA 2000 (quintiles)	0.070	0.002	0.534
Economic diversity	0.024	0.002	0.031
Household diversity 2000 to 2005-09	0.116	0.019	0.000
Ethnic composition 2000 to 2005-09	0.064	0.034	0.000
Percent renters, controlled for per capita income (quintiles)	0.116	0.032	0.000

Roughly 45 percent of organizations in market and high market districts were found in the 2010-12 inventory, while only 31 percent of organizations located in civic clusters and 27 percent in non-clusters were still present 15 years later. Controlling for other variables in the analysis, the survival rate of all three types of districts dropped compared to block groups that weren’t in a cluster but market and high market districts still had significantly higher survival rates than civic clusters.

Table 3-48. Multivariate analysis of nonprofit survival rate: Cultural district status, unadjusted and adjusted means, Philadelphia block groups 1997-2012

Type of cultural district 1997	N	Unadjusted	Adjusted for Factors
High market	200	0.449	0.380
Market	149	0.445	0.402
Civic	146	0.313	0.304
Not cluster	1241	0.274	0.292

Organizations located in higher socio-economic neighborhoods were also more likely to survive. In sections of the city with the highest educational attainment, 41 percent of organizations survived; while in the bottom fifth, the figure was only 30 percent. When other factors are controlled, however, educational attainment had no significant relationship with survival rate.

Table 3-49. Multivariate analysis of nonprofit survival rate: Educational attainment, unadjusted and adjusted means, Philadelphia block groups 1997-2012

Percent with BA 2000 (quintiles)	N	Unadjusted	Adjusted for Factors
Bottom fifth	342	0.302	0.318
20-39%	346	0.287	0.313
40-59%	348	0.274	0.304
60-79%	351	0.292	0.304
Top fifth	349	0.406	0.322

Economically and household diverse neighborhoods were more likely than other areas to retain their cultural nonprofits. Organizational survival in economically diverse neighborhoods was nine percent higher than elsewhere in the city; this percentage fell to 3 percent when controlled for other variables. Neighborhoods with stable household diversity enjoyed a survival percentage of 53 percent compared to only 29 percent for areas that were never household diverse. When controlled, this gap fell to only 9 percent (39 percent and 30 percent).

Table 3-50. Multivariate analysis of nonprofit survival rate: Economic and household diversity, unadjusted and adjusted means, Philadelphia block groups 1997-2012

Economic diversity	N	Unadjusted	Adjusted for Factors
Not economically diverse	1550	0.303	0.309
Economically diverse	186	0.393	0.337
Household diversity 2000 to 2005-09	N	Unadjusted	Adjusted for Factors
Never household diverse	1535	0.291	0.303
Diverse in 2000 only	30	0.498	0.374
Diverse in 2005-09 only	98	0.432	0.373
Diverse in both years	73	0.528	0.393

The results for ethnicity were more mixed. Neighborhoods that were ethnically diverse in both 2000 and 2005-09 and those that moved from diverse to predominantly white had the highest survival rates. However, white neighborhoods that became diverse, diverse neighborhoods that became predominantly black, and Latino neighborhoods all had survival rates below 30 percent. The high survival rate of neighborhoods that became white by 2005-09 was not as high when other variables were controlled, but stable white neighborhoods' survival rate actually increased.

Table 3-51. Multivariate analysis of nonprofit survival rate: Ethnic composition, unadjusted and adjusted means, Philadelphia block groups 1997-2012

Ethnic composition 2000 to 2005-09	N	Unadjusted	Adjusted for Factors
Stable black	520	0.301	0.326
Stable white	283	0.346	0.353
Stable diverse	533	0.320	0.300
Black→ diverse	97	0.361	0.336
White→ diverse	139	0.203	0.228
Diverse→ black	59	0.237	0.255
Diverse→ white	61	0.438	0.339
Hispanic or Asian Pacific Islander in 2005-09	44	0.296	0.294

Rental percentage, corrected for per capita income, was also a good predictor of organizational survival. Neighborhoods with the highest proportion of renters had a survival rate over 42 percent, while only 25 percent of organizations survived in neighborhoods with the fewest renters. The range between the highest and lowest renter percent quintiles declined from 17 percent to 10 percent when other variables are controlled.

Table 3-52. Multivariate analysis of nonprofit survival rate: Corrected renter percent, unadjusted and adjusted means, Philadelphia block groups 1997-2012

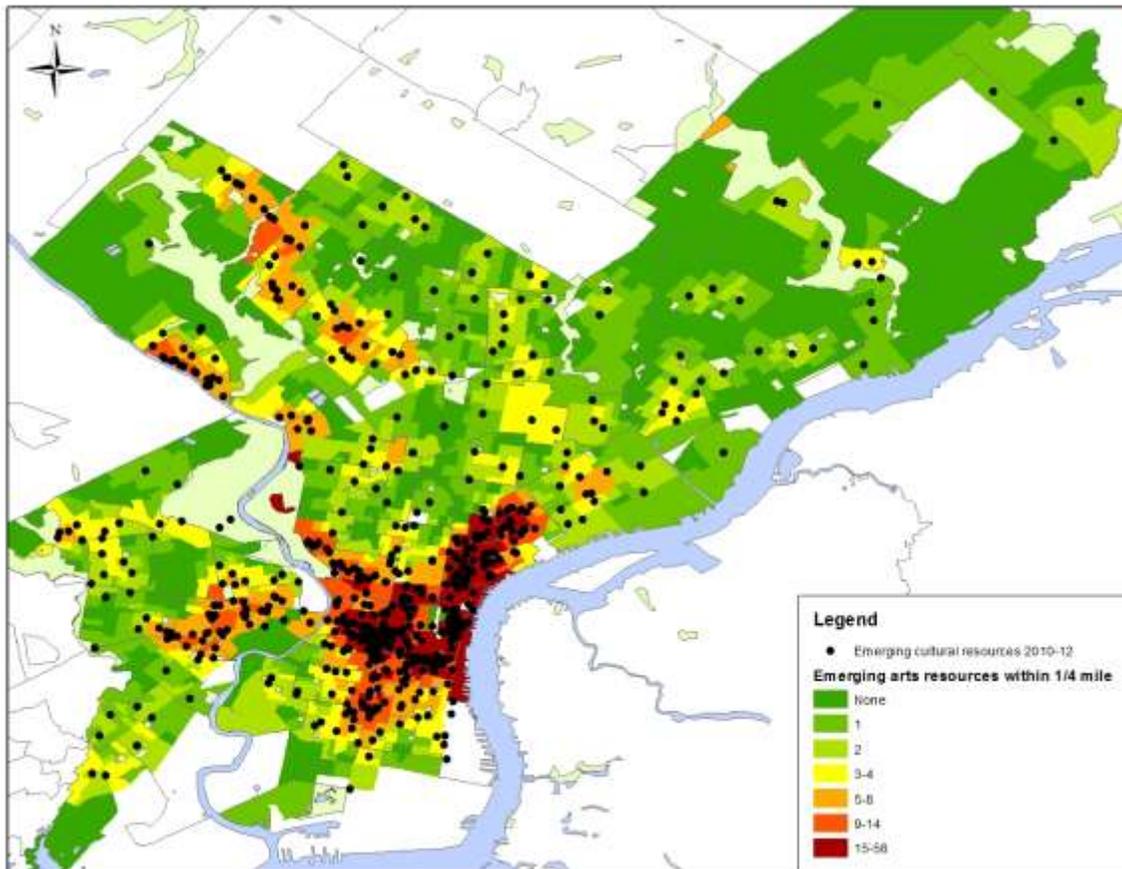
Corrected renter percent	N	Unadjusted	Adjusted for Factors
Bottom fifth	354	0.247	0.273
20-39%	351	0.273	0.293
40-59%	351	0.291	0.301
60-79%	349	0.333	0.331
Top fifth	331	0.425	0.366

Emerging organizations

During 2010-12, we identified a set of nonprofit cultural organizations and cultural businesses that were not present in first scan of the city. For the most part, these relatively young organizations and enterprises helped us identify sections of the city that were attracting cultural assets in the recent past.

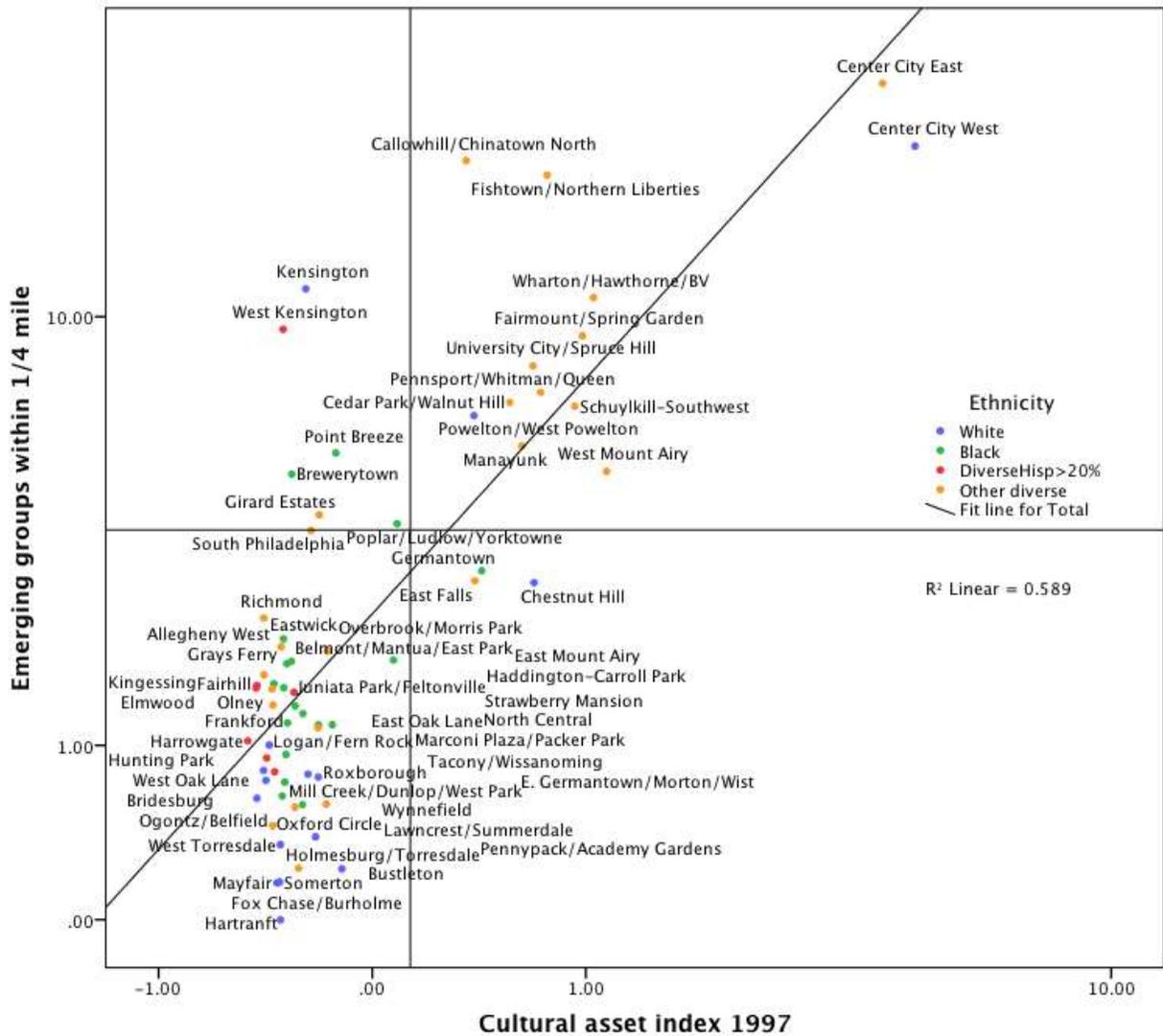
The location of emerging organizations underlines the “rich got richer” theme that we’ve noted earlier. By and large, the neighborhoods that have attracted new organizations in recent years were the ones already rich in cultural resources. Center City and its surrounding neighborhoods were the places most likely to attract new arts and cultural groups. The correlation between a neighborhood’s cultural asset index in 1997 and the likelihood that it would attract emerging organizations and enterprises was quite high (r-square of .59).

Figure 3-53. Emerging cultural resources within quarter mile, Philadelphia block groups 2012



The emerging-resource data identify a set of neighborhoods that have been particularly “upwardly mobile” in terms of cultural assets. Callowhill/Chinatown North, Fishtown, Kensington, and West Kensington, in particular, had many more groups than their 1997 asset index would lead us to expect. A bit farther down the scale, neighborhoods like Point Breeze, Brewerytown, South Philadelphia, and Richmond—which had below average cultural asset indexes in 1997—attracted many more emerging enterprises than we would have predicted in the late 1990s.

Figure 3-54. Scatterplot of Philadelphia neighborhoods, emerging cultural resources within quarter mile of block group by cultural asset index 1997



As these data suggest, type of cultural district in 1997, with a beta-square of .18, was the strongest predictor of the number of emerging assets present in 2012. By comparison, all of the other possible factors were either not significant (educational attainment, economic diversity) or had a very small impact (household diversity, change in ethnic composition, corrected renter percent).

Table 3-55. Multivariate analysis of emerging cultural resources 2010-12: Summary statistics, Philadelphia block groups 1997-2012

	Eta square	Beta square/ R-square	Sig.
Model		0.383	0.000
Type of cultural district 1997	0.323	0.181	0.000
BA plus 2000 (quintiles)	0.126	0.002	0.523
Economic diversity	0.018	0.000	0.611
Change in household diversity	0.187	0.029	0.000
Change in ethnic composition	0.108	0.027	0.000
Corrected renter percent	0.102	0.012	0.000

Block groups in high market districts attracted on average more than 11 groups within a quarter mile, followed closely by market districts with 8.4 new groups. Civic clusters fared better than non-clusters, but both types neighborhoods with fewer economic and location advantages fell behind the more privileged parts of the city.

Table 3-56. Multivariate analysis of emerging cultural resources 2010-12: Cultural district status, unadjusted and adjusted means, Philadelphia block groups 1997-2012

Type of cultural district 1997	N	Predicted Mean	
		Unadjusted	Adjusted for Factors
High market	200	11.07	9.15
Market	149	8.42	7.12
Civic	146	3.62	3.66
Not a cluster	1241	1.56	2.02

Conclusion

In this paper we have discussed in great detail the various changes that have shaped the cultural ecology of Philadelphia neighborhoods from 1997 through 2012. Yet when we pull back, a fairly simple picture emerges. In the late 1990s, Philadelphia had a complex cultural ecology in which both the social diversity and the socio-economic status of a neighborhood played an important role. Although economic inequality influenced the cultural sector, it was cross cut to a certain extent by the expanding of demographic diversity. As a result, a mix of forces was influential in shaping the urban arts world.

Fifteen years later, regarding the cultural character of Philadelphia neighborhoods, the role of socio-economic status had increased and that of social diversity had decreased. In 1997, controlling for ethnic composition and social diversity, educational attainment explained 12 percent of the variance in a community's cultural asset index. By 2010-12, the explanatory power of educational attainment had nearly doubled to 23 percent. Where economic status formerly shared the stage with social diversity, now it stood alone.

Although it is clear that Philadelphia's cultural resources were distributed less equally in 2012 than they were in 1997, we have not yet determined why this happened. It's possible that the broader social forces that increased social inequality during this period also influenced the distribution of cultural assets. We know, for example, that the poverty rate in the city increased during these years and that many low-income neighborhoods lost population. However, the evidence on the survival and mortality of nonprofit arts organizations discussed in this paper suggests that there were factors specific to the cultural sector that explain the increasing inequality in the distribution of cultural resources. In the future, SIAP will investigate these possible explanations in more detail. Did the cultural interests of the residents in these neighborhoods change in such a way as to make organizations more vulnerable? Is the turnover of organizations in low-income neighborhoods always high? Did changes in the funding environment account for where groups died and where they were born?

In the meantime, we are left only with the fact that the cultural sector of the 21st century is doing a less successful job of serving all Philadelphia neighborhoods. Whatever the reasons for this pattern, it should be a cause for concern by all those who care about the health of the city's cultural sector and its neighborhoods.

Summary and Implications

Much of SIAP's effort as part of the CultureBlocks team was devoted to developing the cultural indicators used by the web tool designed for the City of Philadelphia. However, our work plan also called for us to pursue three research goals that focus on Philadelphia: develop a neighborhood-based index of livability/social wellbeing; examine changes in cultural assets between 1997 and 2010-12; and complete a cross-sectional analysis of the associations between cultural assets and social and community characteristics. Working Papers #1 and #2, in cooperation with The Reinvestment Fund, present development of the social wellbeing index and analysis of its association with SIAP's cultural asset indicators. Working Paper #3 provides both the cross-sectional analysis of the relationship of cultural assets and social and community indicators and the analysis of change in neighborhood cultural ecology over time.

These papers represent a watershed for SIAP. The Social Impact of the Arts Project began with the intent of integrating the study of the arts and culture into a broader understanding of social welfare and community vitality. In the past, our study of the arts and neighborhoods has focused on the ecology of the cultural sector and the relationship between a set of cultural assets and a variety of particular indicators of wellbeing. Our work demonstrated that the arts were influenced by two sets of forces: social diversity and economic inequality. It also demonstrated that a variety of indicators of revitalization—reductions in poverty, lower levels of social stress, fewer incidents of ethnic and racial harassment—were correlated with measures of cultural engagement.

Beginning in 2009, two external events began to influence our work. First, the National Endowment for the Arts (NEA), under the leadership of Rocco Landesman, began to pursue a research agenda focused on the Obama administration's *livability agenda*. Second, our collaboration with the Bielefeld Center for Education and Capability Research at the University of Bielefeld (Germany), under the direction of Hans-Uwe Otto, introduced us to the capabilities approach of Amartya Sen and Martha Nussbaum.

Through the NEA connection, we were invited to a meeting on the arts and livability in June 2010. We came away from the meeting excited about the prospect of a more ambitious conceptualization of the arts' impact on society but concerned that the concept of livability might be too limited to capture the full range of ways that the arts could make a difference to the lives of individual Americans and their communities. When the opportunity to collaborate with the City of Philadelphia Office of Arts, Culture, and Creative Economy (OACCE) and The Reinvestment Fund (TRF) presented itself, we saw it as the perfect opportunity to move ahead with a broader conceptualization of wellbeing.

Meanwhile, after our initial exposure to the capabilities approach (CA), we concluded that it might provide a starting point for that reconceptualization. The capabilities approach attempts to translate a strong commitment to social justice into a concrete strategy for empirical study. Until recently, however, CA scholars had devoted more energy to theoretical than empirical work. This shortcoming has been corrected somewhat by the appearance during 2009-10 of several studies (by the OECD, Eurostat, and the Commission for the Measurement of Economic Performance and Social Progress) based on the capabilities approach. These studies recommended a set of empirical measures that could be used to estimate economic and social progress but were focused on making cross-national comparisons. Given SIAP's and TRF's history, it was clear that we should attempt to convert those measures to an urban geography that would allow us to study variation in wellbeing across the city of Philadelphia. Our first effort in that direction was presented at a conference in Bielefeld in July 2010 and published in 2013 as "Creative Capabilities and Community Capacity."¹

The Rationale for Public Investment in the Arts

Although SIAP drew inspiration from the NEA's livability agenda, we were hardly alone in that regard. The NEA's Our Town initiative and the creation of ArtPlace by a number of philanthropies interested in "creative placemaking" have inspired increasing attention on the potential of the arts and culture to influence American community life. In some ways, these efforts represent the latest chapter in an attempt to provide a rationale for public investment in the arts that dates back to the cultural wars of the 1990s.

The American Assembly's 1997 report, *The Arts and the Public Purpose*,² appeared to answer this question unequivocally:

The arts contribute to quality of life and economic growth—by making America's communities more livable and prosperous, and by increasing the nation's prosperity at home and abroad.

The Assembly viewed the arts sector as "a large, ubiquitous, economically and socially significant aspect of American public life" and identified its role in developing a strong civil society.

The arts help to form an educated and aware citizenry—by promoting understanding in this diverse society, by developing competencies in school and at work, and by advancing freedom of inquiry and the open exchange of ideas and values.

¹ Mark J. Stern and Susan C. Seifert (2013). "Creative capabilities and community capacity" in *Enhancing Capabilities: The Role of Social Institutions*, Hans-Uwe Otto and Holger Ziegler eds. Opladen, Berlin, Toronto: Barbara Budrich Publishers.

² American Assembly (1997), *The Arts and the Public Purpose*. Final Report of the Ninety-Second American Assembly, May 29 – June 1, 1997. New York: Columbia University.

<http://www.scribd.com/doc/59799897/Arts-and-Public-Purpose-Report>

For most of the past 15 years, however, the actions of urban policymakers have been more likely to emphasize “prosperity” and economic growth rather than quality of life, livability, and public life of communities.

During the 1990s, the *economic impact* study was the dominant way of bringing culture into the urban policy mix. These studies sought to measure the value of a city’s nonprofit cultural sector by estimating total dollars spent by all arts organizations and audiences and then applying a multiplier to arrive at a really big number. Indeed, over and over again, arts advocates continued to calculate this big number—representing the impact of aggregate arts activity on local, regional, and state prosperity as well as the national economy.

The economic impact studies, however, had a number of problems. First, inconveniently, economists noted that they generally did not account for substitution effects, that is, if residents or visitors go to a museum, there is something else they don’t do. Once these effects were taken into account, the big number was diminished. More importantly, although the big number might impress arts advocates, what if casino gambling or scrap metal was able to generate an even bigger number? Reducing the cultural sector to just another industry strips away much of the unique value that the arts generate.

As the economic impact strategy foundered, it was replaced by Richard Florida’s “creative class” juggernaut. For Florida, the arts generated value by attracting “creatives,” who were the key to a city’s economic dynamism. Certainly Florida turned the heads of many civic and corporate leaders, but his argument raised its own difficulties. Were lawyers and corporate managers really part of the “creative class”? If so, was their presence the cause, or simply the effect, of economic growth? More seriously, how much could a city do to make itself sufficiently cool? By simply designating a “gay district,” as one city did, could it indeed attract the creative class? After a study of a foundation initiative in three communities led by Florida and his associates, we came away impressed by the enthusiasm and indeed the creativity of the local participants, but skeptical about its success in changing the communities’ creative class profile.

Perhaps most seriously, a creative class approach to urban economic development entails diverting resources from the broader community to investments that appeal to an already privileged segment. At a time when resources are tight, even if this strategy were effective, it would tend to reinforce the image of the creative sector as insulated from the broader life of the community.

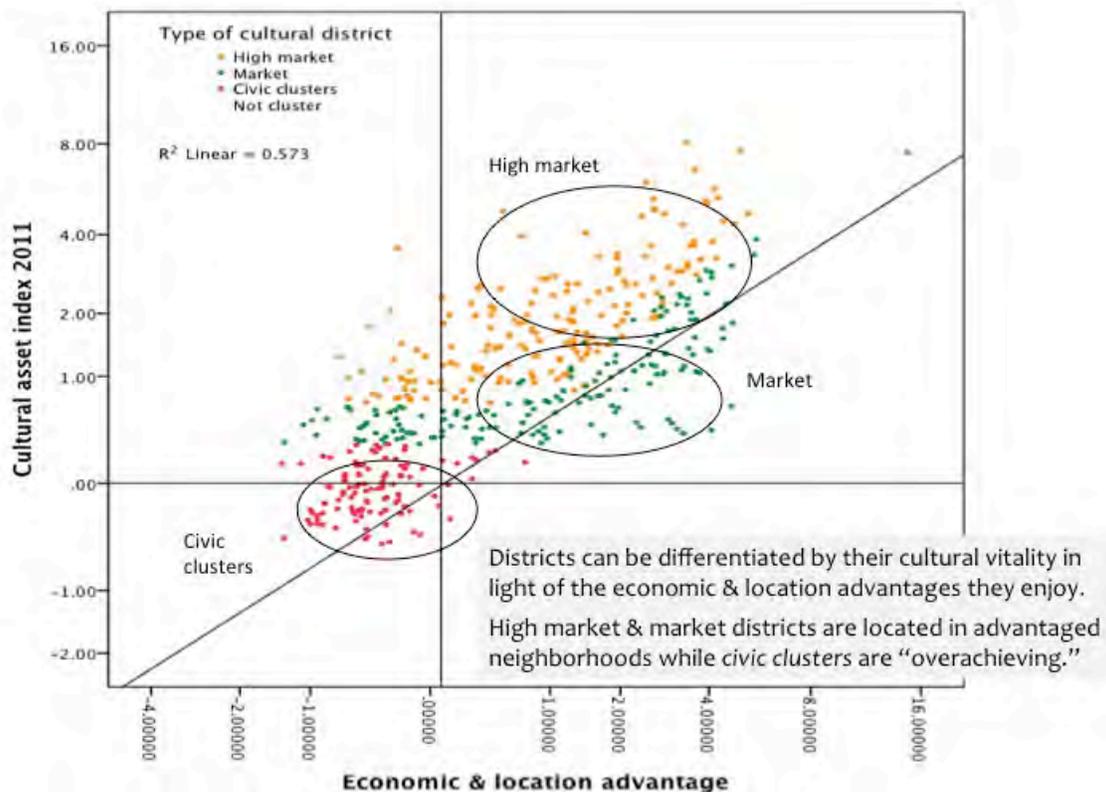
Yet, one of the contributions of the creative class approach was its return to an appreciation of both the economic and quality of life benefits of creativity and culture. More recently, the “creative placemaking” movement—supported by the National Endowment for the Arts, ArtPlace, and other philanthropies—has continued to pursue this interest in the intrinsic as well as instrumental roles of the arts.

A Bottom-up Approach to Cultural Districts and Community Capacity

Research in Philadelphia undertaken by the Social Impact of the Arts Project provided some empirical foundation for creative placemaking. Through SIAP's work with The Reinvestment Fund, we developed a new way of conceptualizing the cultural sector, not simply as a collection of organizations and individuals, but as a community cultural ecosystem. The variety of cultural agents present in a neighborhood—nonprofit organizations (formal and unincorporated), commercial arts, local artists, patrons and participants—benefit from their interactions with one another and their connections citywide. Furthermore, we were able to demonstrate that when this mix of resources reach a high level of concentration—what we call a “natural” cultural district—their networks generate a number of social and economic spillover effects on their neighborhoods. In previous studies, for example, we demonstrated a relationship between these “natural” cultural districts and:

- poverty reduction without social displacement;
- improved child welfare outcomes; and
- fewer cases of ethnic or racial harassment.

Figure 4-1. Typology of “natural” cultural districts based on economic and location advantage

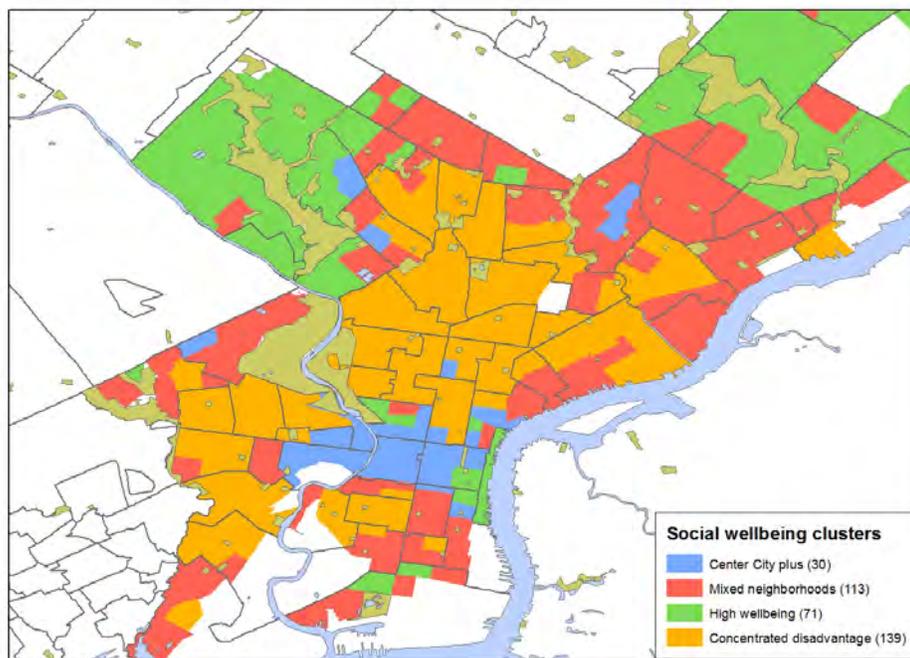


As discussed in Working Paper #3, we can differentiate “natural” cultural districts by their social geography. Some districts are located in neighborhoods with strong economic and location advantages (relatively wealthy residents, close to downtown), while others face many more challenges because of poverty or distance. Figure 4-1, for example, plots these advantages against the concentration of cultural assets in Philadelphia’s census block groups.

We have differentiated *market* and *high market districts*, in which large numbers of cultural assets are consistent with a neighborhood’s economic and location advantages, from what we call *civic clusters*. By contrast to market districts, with respect to cultural asset accumulation, civic clusters in a sense are *exceeding the expectations* we would have based on their significant disadvantages. When we map Philadelphia’s “natural” cultural districts, we find that Center City, its surrounding neighborhoods, and affluent sections of Northwest Philadelphia are the focus of high market and market districts; while low and moderate-income neighborhoods are home to a number of civic clusters.

Our new work, discussed in Working Papers #1 and #2 involved development of a neighborhood-based, multi-dimensional index of social wellbeing—including cultural asset indicators—for the city of Philadelphia. The analysis how a range of social, economic, and environmental advantages and disadvantages tend to cluster across the city. We classified Philadelphia census tracts into four wellbeing clusters, shown on Figure 4-2. Concentrated Disadvantage is the largest; Center City Plus and High Wellbeing are the city’s two advantaged clusters; and Mixed Neighborhoods, about a third of the city’s tracts, are characterized by both advantage and disadvantage.

Figure 4-2. Social wellbeing clusters, Philadelphia census tracts, c. 2010



This index demonstrates the central role of economic wellbeing (income, education, and labor force participation) in shaping other dimensions that determine the quality of community life. For example, our indexes of school achievement, housing problems, and social stress all have correlation coefficients with economic wellbeing that exceed .7. We also discovered that cultural assets are highly correlated with our measure of economic wellbeing, a correlation that appears to have increased dramatically over the past decade.

The estimates of social wellbeing discussed in this report should be considered a first approximation. The authors are quite aware that we have had to make a variety of compromises in trying to fit existing data into the conceptual framework we've employed. At the same time, the study makes a strong case that paying attention to social wellbeing at the neighborhood level is of critical importance. To the extent that wellbeing is about providing people with the opportunity to lead the lives they have reason to value, community conditions—ranging from employment to environmental amenities to cultural opportunities—greatly affect an individual's "capabilities".³ Although cross-national studies have value in repositioning national and international policy, for city residents and households, conditions on their block and throughout their neighborhood exert an influence on quality of life and social choice that those studies miss.

Policy Implications

Culture, collective capabilities, and social wellbeing

We believe that a policy approach that builds on existing clusters of cultural resources—and the social networks they generate—provides the best opportunity for harnessing the power of the arts to strengthen communities and increase social wellbeing. Cultivating "natural" cultural districts would foster development and sustainability of a neighborhood-based cultural ecosystem. We'd envision a two-tier strategy that would involve: (1) identification, support and integration of neighborhood-based cultural assets (including resident artists and artisans), community spaces, and social networks and (2) facilitation of cross-community connections, in particular, access by neighborhood residents to downtown, citywide, and regional cultural institutions and opportunities. SIAP's longitudinal study of Philadelphia's cultural ecology suggests that cultivating the "biodiversity" of urban neighborhoods as cultural habitats would help regenerate communities as well as strengthen the regional cultural economy.

The differentiation of market and civic clusters provides a rationale for social policy investments as well. Market clusters already enjoy a number of advantages. Artists and cultural organization leaders in these areas emphasize the need for efficient city

³ Amartya Sen (1999). *Development as Freedom*. New York: Alfred A Knopf Inc. As discussed in Working Paper #1, Sen's vision centers on a "capabilities approach," where the basic concern of human development is "our capability to lead the kind of lives we have reason to value."

government and services—such as, better lighting and security, clean and safe streets, consistent and honest enforcement of zoning and development regulations. In other words, if cities simply proceed to improve their services generally, it would make a contribution to the success of these districts.

The complement to this conclusion is that clusters with location and economic advantage generally don't need targeted public and philanthropic investments. The market appears to work in these clusters, and the presence of significant commercial enterprises suggests that the combination of sweat equity and for-profit investment is likely to allow them to flourish. Business Improvement Districts (BIDs), which tax merchants and property owners, have sprung up in recent years as a vehicle for upgrading and promoting designated neighborhoods. In Philadelphia, "successful BIDs have generally been found in well-off areas, while BIDs in poorer areas of the city have struggled to gain a footing."⁴

In contrast, civic clusters have cultural assets to leverage but need more help. The market by itself will not make these neighborhoods sustainable as cultural hubs. Their distance from downtown is often a barrier to sufficient ticket sales to keep their doors open. The staff and artists associated with these enterprises are generally paid quite poorly. Finally, residents of the local communities tend to be of moderate or low incomes and simply don't have the financial means to take full advantage of cultural programs let alone keep these organizations going.

"Mixed neighborhoods," what we call Philadelphia's social wellbeing cluster with both strengths and vulnerabilities, afford another opportunity for social policy investment. Working class urban neighborhoods tend to be places that are struggling but not enough to get attention from either government or philanthropy.⁵ Dedicated places and programs for participatory cultural and arts activity could foster face-to-face connections that build social capital and collective capability, which in turn would contribute to cultural development and reinforce other dimensions of social wellbeing.

Finally, residents of our "concentrated disadvantage" neighborhoods must cope daily with egregious social exclusion as well as material poverty and deteriorating environments. Still, even in the most disadvantaged communities, we've found that cultural engagement and social connection can ameliorate community conditions. We'd like to explore, for example, our finding that low-income neighborhoods with higher cultural engagement had lower morbidity—that is, rate of chronic illness.

Every neighborhood in the city has the potential to function as a cultural hub for its residents. Once upon a time, Philadelphia's public libraries and recreation facilities were planned and built to be pedestrian accessible for all residents of the city. According to

⁴ Paul Steinke (2006), "The Pros and Cons of Philadelphia's Business Improvement Districts," *The Next American City*, No. 11, January 1.

⁵ Toure Zeigler, "Transitional Neighborhoods a.k.a. Neighborhoods that don't matter." From *Urban Revival: A blog about city planning and urban culture*, Baltimore, MD, Wednesday, April 22, 2009. <http://bcplanningblog.blogspot.com/2009/04/transitional-neighborhoods-aka.html>

community-engaged artists and cultural workers, many neighborhoods don't have an actual space shortage but rather a shortage of space made usable and accessible for community cultural use. The Naturally Occurring Cultural District Working Group New York (NOCD-NY) recently completed a profile of the practice of "innovative cultural uses of urban space" across the U.S.⁶

Arts philanthropy, creative placemaking, and inequitable community development

The evidence suggests, however, that we are moving in the opposite direction. Market districts tend to be the beneficiaries of arts grantmaking, while civic clusters and other low-wealth communities have been neglected. A recent report by the National Committee for Responsive Philanthropy noted that while only two percent (2%) of cultural organizations have budgets greater than 5 million dollars, fully 55 percent of contributions, gifts, and grants go to these organizations. Meanwhile, only a fraction of arts and cultural grants funding goes to "marginalized communities" or to "advancing social justice." Indeed, as the study notes, "the greater a funder's commitment to the arts, the less likely they are to prioritize marginalized communities or advance social justice."⁷

In short, many cultural agents in civic clusters are caught between the significant social value they produce and the low economic value they command from the market. As a result, they can make a strong case for social investments that take into account their contribution to wellbeing and that are necessary if they are to continue to produce the kinds of social benefits SIAP has documented. If left to the market, the groups and the communities to which they contribute will suffer.

Unfortunately, it appears that much investment in creative placemaking has focused on the low-hanging fruit associated with market districts. Taking a market district and making it blossom is rewarding and far easier than the sustained effort necessary to cultivate a civic cluster.

Given the recent origins of the creative placemaking movement, it is not surprising that its advocates are looking for some quick success. This perspective is clear in the choices that ArtPlace has made in developing its theory of change and its *vibrancy* indicators. Many of the indicators of vibrancy—like employment, density of businesses, cell phone use—are correlated with income. More to the point, vibrancy does a good job of identifying neighborhoods that look like our market and high market districts but misses the features of our civic clusters. In addition, as the ArtPlace theory of change makes clear, the eventual outcome of creative placemaking in this formulation is the attraction and retention of talent and economic growth. The slower process of building a civic

⁶ Caron Atlas and Tamara Greenfield, co-editors (2013). *Innovative Cultural Uses of Urban Space: A Profile Series*. New York: NOCD-NY Working Group.
nocdny.org/2013/09/18/update-innovative-cultural-uses-of-urban-space/

⁷ Holly Sidford (2011). *Fusing Arts, Culture, and Social Change: High Impact Strategies for Philanthropy*. Washington, DC: National Committee for Responsive Philanthropy (pages 7-11).

cluster and the non-economic benefits associated with it would not register in this approach.

Figure 4-3. ArtPlace America Theory of Change, 2012



ArtPlace → Vibrancy → Quality of Place → Attraction and Retention of Talent → Economic Development

Source: http://www.artplaceamerica.org/wp-content/uploads/2012/02/Vibrancy_Indicators_020712.pdf

Indeed, the evidence suggests that arts funding generally has tilted toward market districts. Increasingly, with the marketization of the cultural sector, organizations have been asked or required by funders to increase earned income and adopt better business practices. Running a deficit excludes organizations from a variety of funding sources. This means that if a group runs into trouble, it often finds itself entering a downward spiral in which a small deficit leads to a decline in revenue, which leads to larger deficits. While organizations in more affluent communities have called on the assets in their neighborhoods, those in modest neighborhoods have had a difficult time doing so. Thus, nonprofit funding models have magnified the asset gap among urban neighborhoods.

In Philadelphia, between 1997 and 2011, many of the civic clusters SIAP identified disappeared. The new clusters that came into being over the past decade were much more likely to emerge in relatively well-off neighborhoods near Center City. Moreover, when we calculated a “mortality” rate for nonprofit cultural providers, discussed in Working Paper #3, we found that it was much higher in low- and moderate-income neighborhoods. As a result, between 1997 and 2011, the strength of the correlation between economic status and cultural assets doubled. Increasingly, at least in Philadelphia, the arts are associated with economic privilege.

A policy tool and empirical framework for the arts rooted in social justice values

The SIAP/TRF research undertaken as part of the CultureBlocks project has produced a policy tool that helps us conceptualize and measure culture as a dimension of social wellbeing and a contributor to equitable communities. Even if government and philanthropy would like to acknowledge the contribution of “natural” cultural districts, they would be hampered by the lack of reliable data on the geography of cultural clusters as well as the types of outcomes they produce. One rationale for the social wellbeing index discussed in this report is that it will allow us to gauge the current status of social wellbeing across city neighborhoods, its relationship to cultural assets and engagement, and the range of possible impacts of current social investments.

A more fundamental impediment to government and philanthropy is the need for a conceptual model that recognizes the production and consumption of culture as a collective, socially constructed process; the cultural sector as a place-based ecosystem; and neighborhood as the unit of analysis for social impact of the arts. These concepts are central to the empirical framework underlying development of Philadelphia's CultureBlocks Web tool, the social wellbeing index, and the associated research agenda.

Refinement of the Philadelphia pilot or reproduction in other cities would represent a shift from the dominant trends in arts philanthropy and creative placemaking. Still, we've been encouraged by NEA's leadership in cross-sector initiatives to explore the potential of culture and creativity to foster quality community life for all Americans.

When we began SIAP in 1994, we were attracted to the study of the arts and culture because Philadelphia's map of cultural assets didn't look like its maps of poverty, crime, HIV/AIDS, or incidents of child abuse. Cultural resources were not so strongly correlated with other measures of social advantage, and we saw that as an opportunity to leverage cultural assets to improve the lives of socially excluded populations. Today, unfortunately, Philadelphia's cultural assets are distributed less equally than they were in the 1990s. Indeed, a neighborhood's measures of economic wellbeing now explain twice as much of the variance in cultural assets as they did then.

The patterns of increasing inequity in arts opportunity identified in this report pose an existential threat to the cultural sector. It appears that the arts are more concentrated in well-off neighborhoods today than they were during the "culture wars". If the cultural sector abandons its role in providing cultural opportunities for people in all walks of life and becomes increasingly associated with a social elite, it will face growing opposition at a local and national level.

What is more, if the arts withdraw from our cities' most challenged neighborhoods, the capacity to integrate culture and creativity as part collective capability and social wellbeing is dramatically reduced. SIAP's research has demonstrated that investment in the arts and culture generates durable and measureable social benefits. But if you want the arts to have a social impact, you must be willing to make the investment.