Quality of life and demographic-racial dimensions of differences in most liveable Pittsburgh

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Abstract   This research examines quality of life in Pittsburgh, Pennsylvania. Pittsburgh is well-known for its regeneration from its past as the 'Smoky City' and the 'Steel City'. The shuttering of steel mills and manufacturing plants in the 1980s gave way to a more liveable city in the following decades. Pittsburgh's post-industrial economic development and revitalisation has led to it receiving numerous accolades for liveability, but infrequently in mainstream and government centres the question is reposed: is most liveable Pittsburgh most liveable for everyone? This research examines results from the 2018 Quality of Life Survey in Allegheny County, Pennsylvania, and compares these results to a 2011 Quality of Life Survey, both conducted by the University of Pittsburgh Center for Social and Urban Research (UCSUR). The methods used include survey research analysis, statistical analysis and geographic information systems (GIS) to understand differences in how residents view Pittsburgh's quality of life. The survey results are linked with data on community conditions and GIS to understand how differences in neighbourhoods affect residents' subjective views of quality of life. The 2018 survey finds improvement in resident assessment of many quality of life indicators, but suggests that views of quality of life point to continued protracted problems, with African-American Pittsburghers reporting significantly lower levels of satisfaction on many quality of life indicators compared to white residents. This analysis contends that there are critical differences in liveability and quality of life among residents in Pittsburgh and Allegheny County, and the city and region have not done enough to address these differences in improving equity and social justice in Pittsburgh.

Keywords: *quality of life, liveability, neighbourhood conditions, geographic information systems (GIS), spatial analysis*

INTRODUCTION

Pittsburgh, Pennsylvania, has received numerous accolades for its 'liveability' from varied sources over recent decades. These rankings are often cited through the urban narratives of elected officials and regional stakeholders, confirming that the former 'Smoky City' and 'Steel City' lies firmly in the 21st century. The narrative converges on post–industrial economic development, relevant indicators of change and shared experiences of some. One frequently cited measure is *most liveable* city, a ranking Pittsburgh first received in 1985.[1]

Over decades, Pittsburgh received many more 'most liveables', and the city and region continue to promote rankings to attract business and newcomers to the area.[2,3] The branding of change in Pittsburgh is historic and well–marketed. As it cleared its air and water in the 1950s and 1960s, the city promoted that revitalisation as 'Pittsburgh's Renaissance'.[4,5] Economic change and restructuring in the following decades built on that theme, with the current period of high technology growth again sparking the words 'revival' and 'renaissance' for those writing about Pittsburgh's economic transformation.[6] But infrequently in mainstream and government centres in the Pittsburgh region the question is reposed: Is *most liveable Pittsburgh* most liveable for everyone?

This paper examines results from the 2018 Pittsburgh Quality of Life (QOL) Survey, conducted in Allegheny County, Pennsylvania, and compares these to a similar regional Quality of Life Survey conducted in 2011. Allegheny County, located in southwestern Pennsylvania, is the home county of the city of Pittsburgh (see Figure 1).[7]

The QOL surveys addressed key issues

Figure 1: Location of Pittsburgh and Allegheny County

in understanding how area residents perceive community satisfaction and liveability. From the surveys, the main areas of comparison for this research are:

- How resident views of quality of life differ by race over time;
- How quality of life issues are related to physical conditions in neighbourhoods and communities; and
- How subjective valuations of quality of life change between the 2011 and 2018 surveys.

The 2018 survey results show that many subjective measures of quality of life and liveability improved from the 2011 survey. Nonetheless, certain similarities between the two surveys stand out: when comparing different views of quality of life, the results suggest that views of quality of life point to continued protracted differences by race, with African–American Pittsburghers reporting significantly lower levels of satisfaction on many indicators compared to white residents in both survey years. This analysis contends that there are critical differences in liveability and quality of life among residents in Pittsburgh and Allegheny County, and they have not diminished in the 2010s.

The paper begins with a review of the literature on liveability and quality of life in the Pittsburgh region and recent changes. The work then turns to the methodology and data, followed by the survey results. The paper concludes with a discussion of the findings and final remarks, including potential future research extensions.

LIVEABILITY AND QUALITY OF LIFE

In the *Economist* Intelligence Unit's annual ranking of most liveable cities, Pittsburgh ranked second in the US in 2018 and third in 2019. Among its global ranking,

Pittsburgh finished as the 34th most liveable city in the world in 2019, a high rank for a medium-sized regional US city.[8]

The extensive lists of Pittsburgh's liveability began in 1985 when Rand McNally's *Places Rated Almanac* listed Pittsburgh as America's most liveable city.[9] Receiving such recognition in the middle of the region's steel crisis and mill closings was particularly beneficial for a region losing tens of thousands of manufacturing jobs under deindustrialization and economic restructuring. The 'most liveable' moniker became a marketing slogan, even — or especially — as the city continued its post-industrial restructuring in the wake of double-digit unemployment rates.[10,11]

Today, the city's tourist office collects rankings from dozens of sources and promotes them, listing annual accolades along a range of measures, including best retirement cities, best sports fans and best first-time homebuyer locations.[12] Pittsburgh's hype for its travel writing and list making was covered in a local paper by taking the view that, in a city that transitioned from 'steel town' to 'tech hub', where do other residents fit in who do not fit the tech hype, particularly African–American residents. The article's title referred to Pittsburgh as the 'most listable city'.[13]

City branding has long been part of economic restructuring strategies of local governments.[14] From the days of civic boosters in the local business community to the rise of public–private partnerships for place-based marketing of cities in the global economy, promoting the city as a place for investment and economic development has been central to branding.[15,16] Cities across countries, and in the US, have long 'used experts to attract outside investors' and market their 'good business climate' through national investment listings that were created by business interests in the decades after the

Figure 2: 'Welcome to Pittsburgh: America's Most Listable City' by Joe Mruk, Red Buffalo Illustration

Permission obtained from the artist

Second World War.[17] Cities and nations have long used branding and advertising to promote themselves and their growth policies as a means to attract new business and new investment.

Bonakdar and Aurirac analyse the extensive literature on what is behind city branding in planning and geography over decades.[18] Pittsburgh's *listability* follows extensively the broad trajectories of both revitalising a city in the new economy for knowledge workers and high-tech industries[19] and reimaging the city along its historical legacy.[20] This creates a tension between conflicting understandings of authenticity in the fabric of older industrial regions and the revitalisation of a regional economy with new bases for growth. Like many other older industrial cities and regions, such as Detroit, Pittsburgh's growth strategies are centred on private capital, often supported by public subsidies, and new company investments, contributing

and expanding existing socio–spatial polarization across neighbourhoods and municipalities.[21] Older neighbourhoods with largely working-class and often African–American residents are not part of the growth strategy for new investments, which also do not address issues of inequality or distressed neighbourhoods and municipalities of disinvestment.[22] The city's legacy of mills and manufacturing is relegated to memory and becomes a backdrop for promoting Pittsburgh for new investment.

Branding in Pittsburgh follows two of the necessary and sufficient conditions that Zukin considers as creating a sense of place in a post–industrial landscape.[23] 'Blue collar' images of Pittsburgh's formerly dominant working class and city bike trails featuring millennium tech workers are often promoted together in the same marketing campaigns in an attempt to attract new investments and residents from outside.[24] Both seek to

achieve 'authenticity' through appeals to the past 'material or symbolic landscape',[25] displaying familiar images in the sense of place of the Steel City, with aims to the future seen by others — economic growth along technology and advanced services lines in most liveable Pittsburgh. The draw of 'authentic' places, rooted in industrial history and legacy, may be favoured by some, but the branding and discourse of *most liveable* 'use(s) a marketing strategy that emphasises some elements of this landscape, while suppressing others', as Zukin describes for many post-industrial cities sense of place.[26]

SUBJECTIVE VIEWS OF QUALITY OF LIFE CONTEXT

These transitions have helped Pittsburgh land on the 'most liveable' lists. Analysing liveability and quality of life is a long-studied area of understanding human satisfaction and the many factors that affect residents' perceptions of quality of life in the environment in which they live.[27,28,29] The understanding of quality of life can differ, but an extensive review produced what is viewed as an accurate definition of urban quality of life — the focus of this investigation — as 'the satisfaction that a person receives from surrounding human and physical conditions, conditions that are scale-dependent and can affect the behaviour of individual people'.[30'31]

The Pittsburgh QOL surveys allow for understanding many of these subjective factors and place the results in the context of the long-standing accolades of liveability that formerly industrial Pittsburgh has received in national and international rankings.[32] The study combines survey results with objective liveability indicators from secondary sources to understand how different respondent and neighbourhood factors affect views of quality of life. Understanding how neighbourhood conditions affect subjective resident views and attitudes brings objective data to the subjective views of quality of life in Pittsburgh. From these results, policymakers and planners can look to areas that need improvement in residents' liveability and, particularly, specific communities' needs for improving quality of life factors and neighbourhood conditions.

The key questions are:

- Are there significant differences in quality of life subjective measures between African-American and white residents in Allegheny County, the home county of the city of Pittsburgh?;
- Are there changes of quality of life between the 2011 and 2018 QOL surveys, as measured by identical survey questions? If so, are changes distinguished by differences by race between the two survey years?;
- What policy and/or programmatic changes have occurred over this period that can reduce these differences in the subjective measures of quality of life? What remains Pittsburgh's challenges for all residents of Allegheny County?

METHODOLOGY

In the analysis, the methods used are survey research methods, statistical analysis, and geographic information systems (GIS) to understand differences in key measures of quality of life. The research compares differences in quality of life measures by race of respondent and compares to the previous QOL survey conducted in 2011.[33] The survey results are linked to secondary data on community conditions and GIS to examine how physical conditions in the built environment affect respondents' subjective views of their neighbourhood. This topic has particular importance, as neighbourhood conditions for housing appreciation/gentrification

have changed dramatically in many areas in Pittsburgh in the recent half-decade.

SURVEY DESIGN AND PARTICIPANTS

Survey goals in 2011 were to understand and analyse perceptions, behaviours and attitudes of residents regarding quality of life in southwestern Pennsylvania and Allegheny County. This period marked the beginning of the recovery from the Great Recession of 2007–9, during which Pittsburgh is generally viewed as not having contracted as deeply as many other regions and subsequently rebounded faster.[34]

The 2018 survey followed the 2011 survey in questions about quality of life. Unlike the 2011 survey, however, which used a random digit dialling telephone sampling, the 2018 survey used a web-based platform to an UCSUR Research Registry panel for respondents who were residents of Allegheny County. The registry contains names of individuals who have agreed to participate in UCSUR surveys.[35] Using a combination of probability and non-probability sampling design, 4,934 panel members living in Allegheny County were contacted for the QOL survey in June 2018 and 1,881 completed the survey, representing a 38 per cent response rate.[36] Demographic adjustments were made to make the sample more representative of the Allegheny County population age 18 and older.[37] Final demographic information on respondents is shown in Table 1.

The paper focuses on three principal questions on key areas of quality of life that were part of both the 2011 and 2018 surveys:

1. Would you say that the overall quality of life in the southwestern Pennsylvania region has improved, declined, or stayed the same during the past few years?;

2. Thinking about the quality of life in the southwestern Pennsylvania region, how would you rate the region as a place to live? (Excellent — Very Good — Good — Fair — Poor)?;

3. How would you rate your neighbourhood or local community as a place to live? (Excellent — Very Good — Good — Fair — Poor?)

SECONDARY DATA: NEIGHBOURHOOD CONDITIONS AND QUALITY OF LIFE

Overall quality of life measures are examined in greater detail by constructing a model to test how neighbourhood conditions are related to a respondent's view of their quality of life in the Pittsburgh region and their own neighbourhood or community (questions 2 and 3 above). This used a multinomial logit model to test the relationship between neighbourhood conditions and a respondent view. For each of these two questions, a separate model was created with the dependent variable representing individual survey responses among five ordinal choices (5 — Excellent, 4 — Very Good, 3 — Good, 2 — Fair, 1 — Poor). Neighbourhood-level indicators were chosen to represent non-subjective measures of quality of

Table 1: Survey participants

Total respondents:	N = 1,881
Non-African-American	1,667
African-American	199
By gender:	
Male	567
Female	1,305
By age:	
18–29	140
30–44	221
45–64	805
65+	710
By location:	
City of Pittsburgh residents	633
Rest of Allegheny County	1,165

Note: Not all categories add to total, with missing data in some survey responses

life and neighbourhood characteristics that were in close proximity to where survey respondents live. Individual survey responses were combined with neighbourhood-level data compiled from multiple sources and matched to the individual's residential location. The model examines the relationship between perceived quality of life and select neighbourhood metrics, along with respondent's age, race and educational attainment. Also included was a binary variable for respondents living within the city of Pittsburgh to test different views of quality of life between city and suburban residents.[38]

Compiled neighbourhood-level data includes:

1. *Access to public transport*: Mobility through the region's transport system matters for many residents. The QOL survey included a question about the availability of public transport in the region. Two-thirds of survey respondents felt that the availability of public transport was a moderate to severe problem in Pittsburgh, and less than 10 per cent felt there was no problem with the availability of public transport. The indicator measures a respondent's proximity to public transport, expressed in fractions of a mile to the closest public transport stop;

2. *Housing quality*: Pittsburgh is a city with much abandoned housing. The city has lost population consistently for decades, and Allegheny County has not seen significant growth in decades.[39] Thus, in line with many studies, distressed properties in older industrial cities affect residents' lives in many ways, including increasing population loss and reducing property value.[40,41,42] A proxy for housing quality was created using data from housing citation violations, based on housing inspection data from the Allegheny County Health Department.[43] This was set as a ratio of housing violations as a share of renter–occupied housing units in the physical geography;

3. *Walk Score*: For neighbourhood conditions, a number of features in the built environment are related to residents' subjective views of their neighbourhood: 1) access to open space; 2) design that contributes to social interaction; and 3) design for personal security.[44] Walkability is often used as an indicator of important benefits, including health and environmental, but also social and community benefits affecting overall neighbourhood conditions.[45] The data from Walk Score was matched to the geocoded location of each respondent;[46]

4. *American Community Survey*: The American Community Survey of the US Census Bureau is used for the following measures: median household income and vacancy rate − vacant housing units/total housing units. Each is at the census tract level.[47]

GIS: EXAMINING SPATIAL PATTERNS WITHIN THE PITTSBURGH REGION

Residents' views of their own neighbourhood or community as a place to live are combined with a measure of neighbourhood distress. Environmental justice areas (EJAs) are the classification of neighbourhood distress by socio-economic and environmental status, constructed by the Pennsylvania Department of Environmental Protection (DEP).[48] The PA DEP defines EJAs as any census tract with 20 per cent or more individuals living in poverty and/or 30 per cent or more of the population is minority.[49] EJAs represent disadvantaged communities and, in the current context, reflect the impacts that neighbourhood conditions have on

subjective views of quality of life. EJAs are used here as an additional means to test respondent results and differences by race through objective neighbourhood conditions.

GIS allows additional understanding of the relation between a survey respondent's neighbourhood conditions and their subjective views of quality of life and allows an additional link between objective and subjective indicators.[50] Respondent locations were geocoded from the nearest street intersections to their home and thus were not asked to identify their exact street address. Of the 1,881 respondents, the locations of 1,796 were geocoded, and an additional 57 respondents whose location could not be geocoded by cross streets were located to the centroid of the ZIP code for their area. That resulted in a total of 1,853 respondents, or 98.5 per cent, geocoded for this analysis. Responses were then analysed for 'hot spots' of concentrated views of responses. A discussion is included in the results section.

RESULTS

From the 2011 QOL survey, the conclusions were clear and consistent, and often at odds with the city's promotion of its high rankings of liveability. That analysis showed significant differences by race in subjective quality of life measures in major domains of housing, environment and neighbourhood conditions.[51] Results showed that subjective assessments of quality of life varied by social groups, with significant differences by race, and these subjective measures from the survey results differed from objective indicators of quality of life and, particularly, differed from Pittsburgh's accolades on the 'most liveable' measures. The results from the 2011 survey showed that residents of Allegheny County were divided by race on many quality of life indicators.

The results from the 2018 survey show both improvement in resident views of quality of life from the 2011 results, but also continued significant differences by race of respondents in subjective views of quality of life in Pittsburgh.

Overall, the 2018 QOL survey shows improvements in resident perceptions of quality of life in the Pittsburgh region from the 2011 survey along the measures analysed here. There are general reasons for such improvements. The regional and national economies have improved since the 2011 survey. The depth of the Great Recession led to a slow recovery for many, with the impacts of the financial crisis extending well into the early recovery years. Seven years later, the 2018 survey was far into the economic recovery and expansion, and overall, reflects much more favourable views of Pittsburgh's quality of life than the 2011 results.

Second, improvements in the region have not negated the strong differences by race in resident perceptions of quality of life. The 2018 QOL survey finds that although perceptions have improved along many dimensions for both white and African–American residents, the difference in quality of life measures remain significant.

SURVEY QUESTIONS

1. Would you say that the overall quality of life in southwestern Pennsylvania region has improved, declined, or stayed the same during the past few years?

The differences in responses to this question between the two surveys point to the changes in economic conditions and the years of recovery by 2018 compared to 2011. Overall, over half — 52 per cent — of 2018 survey respondents reported that the overall quality of life in the

southwestern Pennsylvania region had improved over the past few years, a much higher response than the 27 per cent who felt that way in 2011 (see Table 2). In 2011, a quarter of survey respondents felt that overall quality of life declined in the previous years, while only 10 per cent of respondents felt that way in the 2018 survey. This reflects a number of factors, but the improvement in the national and regional economy is certainly a key factor.

The results shift when respondents' race is considered. In 2011, while results showed differences by race, the differences were not as stark as the 2018 survey results. In 2011, 27 per cent of white respondents and 29.1 per cent of African–American respondents felt that quality of life in the region had improved over the past few years — only a slight difference. More white respondents — 50.1 per cent — felt that quality of life stayed the same, a higher proportion than the 41.8 per cent of African–American respondents. More African–American respondents reported that quality of life had declined in the 2011 survey — 29.1 per cent — but that was only slightly higher than the comparable figure for white respondents. The difference between white and African–American respondents who felt the region's quality of life had declined in 2011 was only 6.2 points, 27.0 per cent and 22.9 per cent respectively. In 2011, the differences in the subjective view of

the region's overall quality of life were not very different for white and African–American respondents in the early years of the economic recovery.

In the 2018 survey, large differences emerge in views of quality of life between white and African–American respondents. Just over one-third of each group thought quality of life stayed the same during the past few years, and both white and African–American respondents viewed recent quality of life changes much more favourably than reported in the 2011 survey. Even though more white and African–American respondents in 2018 reported improvement in the region's overall quality of life from 2011, the gains were much stronger for white respondents. In 2018, white respondents were much more likely to view improvement in the region's quality of life in recent years compared to African–American respondents, 56.8 per cent and 39.2 per cent respectively.

The difference in subjective views of the region's overall quality of life also stands out when respondents viewed a decline in QOL. In 2011, shares with that view were relatively large and not so wide apart, as discussed above. By 2018, that had changed significantly. Only 9.0 per cent of white respondents felt that quality of life declined in 2018, compared to one quarter of African–American respondents. Both views of decline showed a drop

Table 2: Quality of life survey questions: Would you say that the overall quality of life in southwestern Pennsylvania region has improved, declined, or stayed the same during the past few years?

Response	2018			2011		
	Total	White	African-American	Total	White	African-American
Improved	52.0%	56.8%	39.2%	27.1%	27.0%	29.1%
Declined	9.8%	9.0%	24.6%	25.6%	22.9%	29.1%
Stayed the same	38.2%	34.0%	36.2%	47.3%	50.1%	41.8%

Source: University of Pittsburgh Center for Social and Urban Research, Quality of Life Surveys, 2011 and 2018, www.ucsur.pitt.edu

from the 2011 survey, but the decrease for African-American respondents was much smaller than the sharp decrease in white respondents with that view.

Changing conditions of Pittsburgh and its recovery from the Great Recession show signs of unevenness, and the increase in viewing a decline in quality of life for African-American respondents can well be within the understanding that the recovery continues to be slow for many minority residents of the region, compared to the white population.

1. Thinking about the quality of life in the southwestern Pennsylvania region, how would you rate the region as a place to live? (Excellent — Very Good — Good — Fair — Poor)?
2. How would you rate your neighbourhood or local community as a place to live? (Excellent — Very Good — Good — Fair — Poor?)

These two questions focus on quality of life in the Pittsburgh region and in respondents' own neighbourhoods or communities for both descriptive analysis and the logit model. For the descriptive analysis, the responses are combined into two groups to compare the most favourable ratings (excellent and very good) and the worst ratings (poor and fair) (see Figure 3). As in the previous question, while survey respondents report improvements in quality of life in 2018 from 2011, breaking down the responses by race shows important differences in views.

Although the region as a place to live improved from 2011 to 2018 for both race groups (question 1), we find a continued break between white and African-American respondents. Rating the region as a good or excellent place to live increased for both races from 2011 to 2018, but the differences are significant. In 2011, 60.3 per cent of white respondents rated the region as a

very good or excellent place to live, a much higher figure than the 29.1 per cent of African-American respondents with such favourable ratings. In 2018, the rating good or excellent for white respondents climbed to 71.6 per cent; for African-American respondents, the rate rose only slightly to 32.7 per cent.

On the other hand, although African-American respondents who viewed the region as a fair-to-poor place to live declined by half from 2011 to 2018, from 40.4 per cent to 30.1 per cent respectively, white respondents with the most negative view also declined between 2011 and 2018, but from much lower levels, 11.7 per cent to 7.3 per cent respectively. Just 32.7 per cent of African-American residents viewed the Pittsburgh region as a good or excellent place to live in 2018, only slightly higher than the 30.1 per cent who ranked it as poor or fair.

When ratings of respondents' neighbourhoods are examined (question 3), similar responses and changes from 2011 are show. Thirty per cent of African-American respondents rated their neighbourhood as an excellent or very good place to live in 2018 — a slight jump from 29.1 per cent in 2011 — but the favourable view is much lower than that for white respondents, with 71.6 per cent of white respondents reporting such high assessments. On the negative side, African Americans' ratings of their neighbourhood or community as fair or poor decreased from 2011, when it stood at 42.6 per cent, to almost half that at 21.6 per cent in 2018, well below fair-to-poor ratings by white respondents, with only 3.3 per cent of white respondents negatively rating the region as a place to live. With such significant shares, African-American respondents rating the region and their neighbourhood or communities as poor or fair places to live suggests these results are certainly not exemplary of the most liveable city ranking.
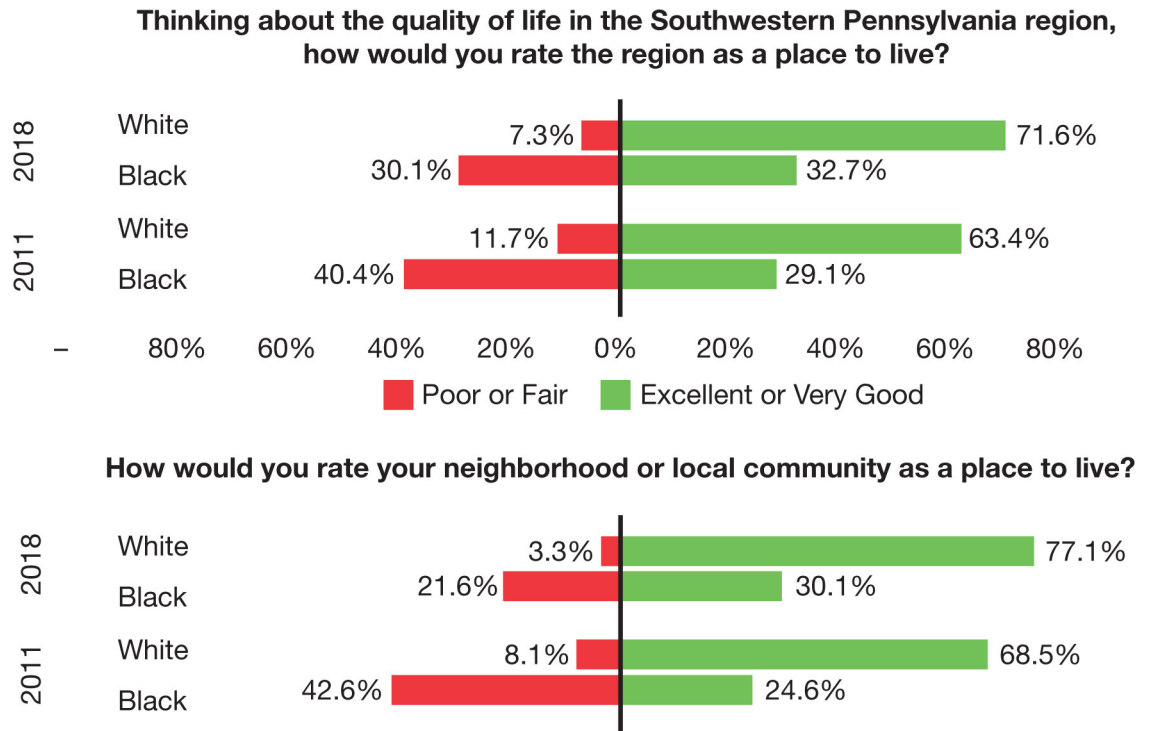
Thinking about the quality of life in the Southwestern Pennsylvania region, how would you rate the region as a place to live?

How would you rate your neighborhood or local community as a place to live?

Figure 3: Responses to quality of life questions by race, 2011 and 2018 surveys

NEIGHBOURHOOD EFFECTS

We then compared survey results for the two general QOL questions above to test for possible significant factors in thinking about individual survey responses and neighbourhood effects (see Table 3). For both questions — one concerning the region as a place to live, the other focused on the respondent's own neighbourhood — we see many similarities in significant factors, but also some critical differences. Race as defined by African–American survey respondents is negative and significant in both questions, with a relatively strong impact in both cases. This thus confirms the analysis above, that significant and important differences in Pittsburghers views of quality of life are divided by race, with African–American residents in the Pittsburgh area viewing quality of life in the region and their neighbourhood far less favourably than white residents.

The model also tested the role of neighbourhood effects in views of quality of life. These were consistent across the two survey questions in terms of negative impacts, although neighbourhood effects were much stronger in assessing respondents' own neighbourhood or community as a place to live than the region as a whole. Higher vacancy rates and poorer housing quality were both associated with significant negative impacts on respondents' views of rating their neighbourhood or community as a place to live. This is as expected and the importance of the built environment in everyday living conditions is significant, as these results have confirmed.

The third variable testing for neighbourhood effects — walkability — shows positive relations for both regional quality of life and local neighbourhood community conditions, although it is only significant for the neighbourhood effects. The logit results suggest that the walkability variable, although small, is

Table 3: Multinomial logit model results

Variable	Overall 5: Thinking about the overall quality of life in southwestern Pennsylvania region, how would you rate the region as a place to live?			Overall 7: How would you rate your neighbourhood or local community as a place to live?		
	E Estimate	SE	Pr > ChiSq	Estimate	SE	Pr > ChiSq
Black/African-American	-1.700	(0.158)	<.0001	-0.793	(-0.793)	<.0001
Bachelor's Degree or higher	0.176	(0.096)	0.0658	0.196	(0.196)	0.0361
Age 65+	0.494	(0.094)	<.0001	0.196	(0.196)	0.0318
Walk Score	0.004	(0.003)	0.1419	0.014	(0.014)	<.0001
Median household income	0.004	(0.002)	0.0743	0.026	(0.026)	<.0001
Vacancy rate	-1.288	(1.097)	0.2404	-3.843	(-3.843)	0.0004
Housing quality	-1.987	(1.367)	0.146	-7.848	(-7.848)	<.0001
Transport	0.148	(0.066)	0.024	0.036	(0.036)	0.5887
City of Pittsburgh	-0.070	(0.114)	0.5391	0.303	(0.303)	0.0066
N		1,847			1,848	

Table title and table number: Multinomial logit model

Survey respondent data: Black/African-American, Bachelor's Degree or higher, Age 65+

Neighbourhood conditions (secondary source): Walk Score (Walk Score by tract); median household income (American Community Survey, by census tract); vacancy rate (number vacant houses/total housing units, American Community Survey, by census tract); housing quality rate (housing violations/renter-occupied housing by census tract, American Community Survey by census tract); transport (distance to closest public transport in miles, UCSUR); City of Pittsburgh (binary)

positively related to respondents' rating of their neighbourhood or community as a place to live.

From this model, there are also several of individual factors related to positive rankings of quality of life. These include higher levels of educational attainment and higher median household income, both positive, but less important in impact. Thus — and following on others' results — residents with higher levels of educational attainment and higher income on the objective side stand to subjectively view quality of life of both the Pittsburgh region and their neighbourhood or community more favourably than those with lower levels of education and income.

The impact of age also shows significant and relatively important effects. In terms of the region as a place to live, older residents were more likely to view it favourably than younger residents. The difference, however, was not significant for the question regarding one's neighbourhood or community as a place to live.

These results show that sense of place is different for residents of Allegheny County compared with the city of Pittsburgh or suburban residence. City of Pittsburgh residents were more likely to rate their neighbourhood as a positive place to live than residents in the rest of Allegheny County. The marker for Pittsburgh residents was significant and a relatively strong predictor of a positive view of their neighbourhood as a place to live, compared with suburban residents.

One aspect of the region's infrastructure — transport accessibility — was not an important predictor in this model for either question, although it was positive for both. In comparison, transport was viewed as more important for regional quality of life than for a particular neighbourhood or local community.

Respondent clusters

Finally, the results of respondent views of neighbourhood conditions were examined through the lens of GIS and defined areas of distress: EJAs. Survey responses were

mapped by geocoded survey responses to question 3 above and joined with the EJAs. The result is a 'heat map' showing areas with higher or lower values on how respondents rated their neighbourhood as a place to live on the five-point scale (see Figure 4).

Point densities of the question 'How would you rate your neighbourhood or community as a place to live?' are calculated by the summed continuous values of the question, with significant geographic clusters. Only areas with enough responses in the same ranking to cluster geographically result on the 'heat map'. The 'hot spot' map shows significant clusters of responses by favourable or unfavourable rankings by respondents, identified by the Anselin Local Moran's I statistic of spatial association.

The map reinforces the findings of the data analysis above. The concentrations on the heat map of the respondents reporting the worst rankings — poor and fair — are clustered around the city of Pittsburgh and along the communities lining the Monongahela and Ohio rivers, largely former industrial communities that continue to struggle from manufacturing closings over decades. These significant clusters of similar low rankings are largely in the EJA areas, with higher proportions of minority residents and those living in poverty.

The concentration of favourable rankings, clustered and shown in blue, are no surprise to those familiar with the Pittsburgh region. The neighbourhoods are clustered in the city limits in the East End, largely near the universities and solidly middle-class neighbourhoods through decades of change. Residents with strongly favourable views of their neighbourhood or community as places
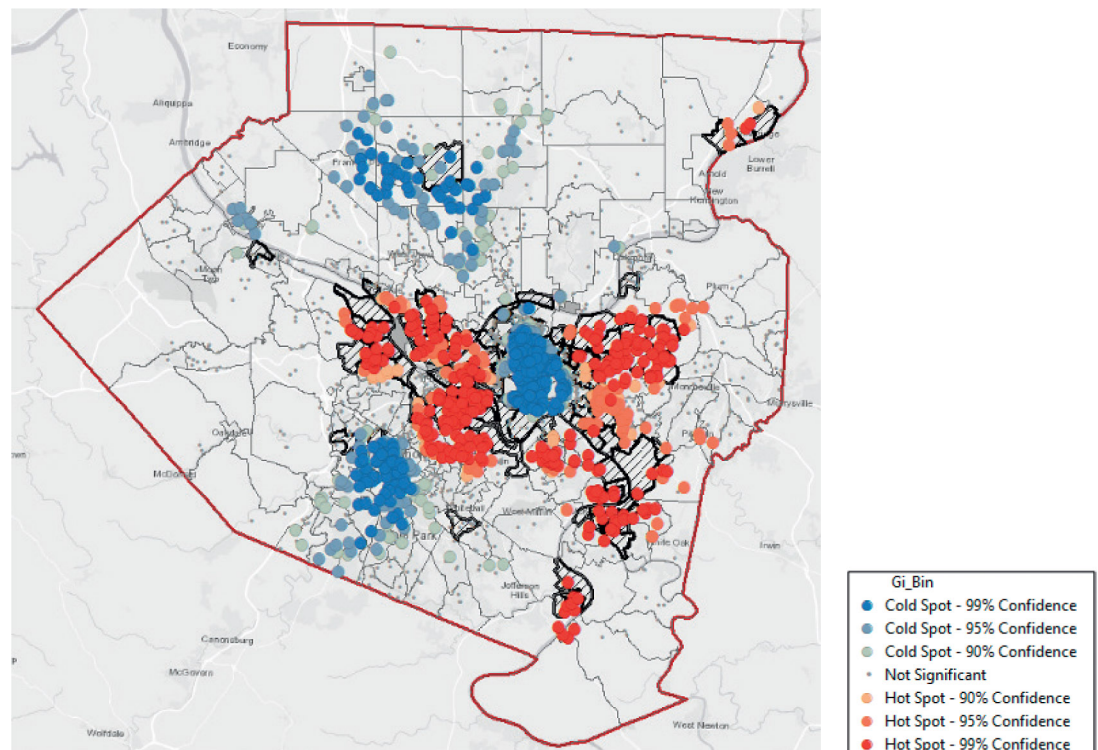

Figure 4: Survey question: How would you rate your neighbourhood or community as a place to live?

Source: 2018 QOL survey

to live are also found in South Hills and North Hills suburban communities, with significant clusters of similarly high favourable rankings of their neighbourhood as a place to live.

DISCUSSION AND CONCLUSIONS

Popular rankings and ratings of quality of life in Pittsburgh do not come to the same conclusions. Public officials and economic development stakeholders extol Pittsburgh's high rankings by many rating organisations and use the information on campaigns to attract business and newcomers to the region — for instance, how the Steel City is now the Smart City or Knowledge Town. Long supported by its growth coalition, these rankings are part of decades of growth promotion in the Pittsburgh region, seeking the attraction of incubation of advanced technology firms, but not addressing areas of disinvestment and left-behind residents — conditions addressed for decades by community activists, some public officials, academics and critics of well-established growth coalitions.[52] Tech City Pittsburgh may attract national press coverage, but for many Pittsburghers — and most importantly, African Americans — subjective ratings of quality of life, although improved over much of the decade of the 2010s, have not come close to how other segments rate the region and their communities.

This paper analysed and compared results from basic measures of quality of life from the 2011 and 2018 Pittsburgh Quality of Life surveys and distinguished changes in subjective ratings and changes by race over the period. In general, on many measures of quality of life, African Americans reported higher levels of positive perceptions on quality of life measures in 2018 than in 2011. Nonetheless, although African Americans have much higher perceptions of quality

of life in the Pittsburgh region today than in 2011, they have much lower positive ratings of quality of life indicators than white respondents. These differences have neither abated with the current economic expansion, nor with policies and programmes that have addressed diversity issues in the region.

The work also shows the importance of neighbourhood context and conditions. Through both the logit model and GIS heat map analysis, neighbourhood conditions play an important part in understanding quality of life for respondents. With the heat map analysis, we also found that negative views of one's neighbourhood or community clustered in many EJAs areas with higher representation of minority residents or residents living in poverty, or both. The results of the descriptive analysis, logit model, and heat map cluster reinforce that quality of life views of white and African–American respondents drive to the same conclusion: most liveable Pittsburgh is most liveable for some, but not for many Pittsburghers.

These results point to a number of areas for policy and planning. Certainly, in an older formerly industrial region, with much vacant property, more aggressive actions on vacant land are needed. The region has a very successful land bank in a concentration of communities in the Mon Valley, but, unfortunately, after six years, the Pittsburgh Land Bank is barely functioning. The ability to return properties to active ownership and improve conditions in the built environment is an environmental justice issue for many minority communities. Along with a recently passed inclusionary zoning initiative in one neighbourhood in Pittsburgh, long after a half-decade building boom in market–rate rental housing construction, much of Pittsburgh's attempt at 'just revitalisation' is, as in other shrinking cities' gentrification, 'too little, too late'.[53]

Further, as the study here shows, white residents have moved to much more favourable views of the region's quality of life over the recent economic recovery than African Americans. Recent research from the Federal Reserve Bank of Cleveland found that over the recovery years from the Great Recession, 2007–17, the racial gap in earnings in Pittsburgh between minority and white workers increased from US$8,635 in annual earnings in 2007 to US$13,984 in 2017.[54] Furthermore, for the most recent part of the recovery, 2012–17, white workers in Pittsburgh experienced a gain in earnings of 4 per cent, while minority earners saw earnings decline by 14 per cent.[55] While Pittsburgh has realised many economic gains in the 'meds and eds' and technology sectors, many of the gains in employment have not benefitted minority residents of the region. Minority workers in the Pittsburgh region continue to be more heavily represented in lower-paying occupations, such as in the services sector, while in faster-growing, higher-paid occupations, employment of white workers has grown by more than double that of minority workers over the Great Recession recovery period.[56]

The COVID-19 crisis paints an even more uncertain future on minority and disadvantaged residents in the Pittsburgh region. The outcomes over even the short term are currently unknown, but the prospects over the medium to longer term project even greater uncertainty and economic distress for those whose improvements in quality of life over the recovery period following the Great Recession did not keep pace with more advantaged residents of the city and its suburbs. The work on the outcomes is just beginning, but the challenges addressing inequality in the region must begin at the outset and address impacts in the contextual understanding of the region's pervasive growth strategy policies.

Most liveable Pittsburgh continues to be a place of great changes and challenges. The tidy assessments of the ratings industry and urban narratives of journalists and politicians do not provide for the complexities of regeneration in the former Smoky City and the unevenness of revitalisation in this once–industrial powerhouse. Historian Jon Teaford summed up the Pittsburgh experience and its regeneration from its steel days: '[Pittsburgh] is not a "renaissance" city but a survivor city that has coped, adapted, and is still seeking answers as to how to adjust to a twenty-first-century world.'[57] Pittsburgh may continue to be most liveable for many, but it needs to do more to improve its less than 'most liveable' condition for others, particularly minority residents in the region.

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