LIVABILITY CHANGES IN INDIANA COMMUNITIES: SOMETHING TO FLAUNT OR TO FEAR?

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ABSTRACT

Livability indices, in particular the Places Rated Almanac's can be a source of much pride and consternation for participating communities. Given the media attention that the rankings attract, they have the potential for generating important economic and social consequences. Hence from the perspective of encouraging the economic development of a region it may be worthwhile to understand how it is faring on this livability metric relative to, say, its 'competitors'. In this paper we (primarily) compare the performance of Indiana communities vis-à-vis their 'peer' group on the Almanac's livability scale over the years 1997 and 2000. We find that the 'peer' group's performance has been somewhat better than that of the Indiana communities.

INTRODUCTION

The livability rankings (for metro-areas in the U.S.) produced by the *Places Rated Almanac* are by far the most well known and attract a fair degree of media attention when they come out. According to Wall (1999) these rankings "never fail to create controversy, eliciting gleeful cheers and breast-beating from residents of high-ranked areas, and cries of bias and ignorance from residents of low-ranked areas."

The popularity of the index stems from a number of different factors. First, it is based on parsimonious set of factors (only 9) that are meant to capture (at least, in a broad sense) most of the major determinants of a community's livability. Second, as the index provides a cardinal measure of livability (on a metric of 0 to 100, where 0 indicates least desirable and 100, most desirable livability) it is easy for a community to determine how far ahead or behind (in livability) it is in comparison to its 'peers'.

Besides evoking the diverse emotions described above, the rankings do serve (whether rightly or wrongly) more serious purposes. They are used in the migration decisions of individuals whether in or out-migration. Also they are used by businesses in making location decisions. While, clearly, tax incentives and other factors play significant roles in such decisions, the relative desirability of living in a certain place is influential in a firm's ability to attract and retain highly skilled and talented workers.[1]

Communities in the state of Indiana have not fared well in these rankings. For instance, the Places Rated Almanac's 1997 rankings reveal that out of 351 MSAs that were considered nationally, the Evansville MSA had a rank of 144, Bloomington was very close at 145th and Terra Haute was a distant 232nd. Only the Indianapolis MSA was in the top 50. MSAs that are Indiana's geographic neighbors have experienced a similar fate; e.g., Lexington (KY) had a rank of 137, and Champaign-Urbana (IL) came in at 202nd.

We present two empirical analyses. First, this paper will compare Indiana communities relative to their peer groups in geographic neighboring states to determine whether Indiana's communities, since 1997, have in terms of livability rankings continued to 'walk in step' with or have managed to 'steal a march' over their neighbors. It is commonplace in the local newspapers and TV news outlets to make comparisons of one state's economic/social health with that of its geographic neighbors. The second analysis determines how Indiana and its 'peer' group communities have performed relative to the rest of the U.S. since 1997.

As discussed above, the rankings have the potential to generate important social and economic consequences for a region and analyses of this type can be of some importance from the perspective of say, the state's economic development institutions.

The rest of the paper is organized as follows. The next section lays out our research strategy. Section III discusses the results with regard to the Indiana - Peer group comparison. In section IV (section V) we discuss the results from the comparison of Indiana (Peer group) communities with those of the rest of the U.S. and Canada. Section VI concludes.

RESEARCH METHODOLGY

The data for our study come from the 1997 and 2000 editions of the *Places Rated Almanac*. Each edition contains a large number of MSAs from the U.S. and Canada on which data concerning 9 livability attributes (defined in Table 1) is collected from various government and

[1] Individuals who have served on Faculty Search Committees will attest to the difficulty of attracting top candidates if the University happens to be located in a not so desirable area.

community development organizations. This data is used to calculate 'raw' scores for each community on each attribute. These 'raw' scores are subsequently cardinally sorted and expressed in terms of percentiles, where the 100^{th} percentile represents the community with the highest raw score, 50 represents the median in the data set, and 0 represents the community with the lowest score. The scores are also presented as an ordinal ranking, where the community with a percentile score of 100 has a ranking of one, and the community with a percentile of 0 has a ranking equal to the number of communities in the data set. Finally, an overall percentile score is computed by averaging the percentile score in each of the nine categories. These overall scores are also presented as a ranking, with the community exhibiting the highest average score being given a ranking of one.

The most efficient method of determining whether rankings have increased or decreased over the time horizon, in question, is to directly compare the rankings (and/or percentile scores) for the 9 categories (as well as the average score) over the two years, and use standard hypothesis tests to determine if these changes are significant. However, there are a couple of issues that make it inappropriate to conduct these tests in this fashion. One, and perhaps the most important, is that if the population of interest is all communities in the United States and Canada then sample of data presented in the *Almanac* is not representative of the population as a whole, as it contains a disproportionate number of the more populous communities. Another is the fact that the 2000 edition of the *Almanac* includes a handful of communities that are not present in the 1997 edition.[2]

To avoid these difficulties, we use the data presented in the *Almanac* to create a series of variables, whose characteristics lend themselves more favorably to standard hypothesis testing. In what follows we describe how these variables are created. First, we include only those communities in our sample for which data is available over the 2 editions of the *Almanac*. Since eliminating these communities from the 2000 sample confounds the rankings for each of the 10 attributes (the 9 attributes plus the overall score), we re-calculate these rankings taking into account only those communities included in both years.[3] Next, for each community, we take the difference between its ranking on each attribute with regard to the years, 1997 and 2000. Based on this difference, we create a series of variables that indicate only whether a particular community improved its ranking, held its ranking constant, or reduced its ranking for a particular category over the years in question.

How does our re-characterization of the *Almanac* data make it more conducive to hypothesis testing (i.e., make our data more representative of the population as a whole)? By looking at *changes* in rankings over time, we reduce the bias that may result from including the more populous communities in each of the original data sets, since (should data be available to rank every community in the population) now small communities are just as likely as large communities to improve or fall in rank. This is especially true if we measure improvement (or a lack thereof) in a qualitative framework, and so only examine whether or not improvement has taken place, as opposed to the magnitude those changes.[4]

Having 'cleaned' the data appropriately, we seek to address the concerns of this paper by dividing our data into three groups. The first group consists of all MSAs that are all or partially included within the State of Indiana.[5] The second consists of all other communities that are all or partially included in states that border Indiana. We define this group of MSAs as our geographic "peer group".[6] The remaining communities in the data set were placed in a third group. We characterize these variables using a series of cross-tabulation tables. The columns in each of our cross-tabs give the total number of communities that improve, fall or remain constant in the rankings over time, while the rows of each cross-tab further decompose the data into specific geographic areas. We subsequently employ chi-square tests of independence to look for significant differences across the three groups.[7] Our first null hypothesis looks for

[2] All communities that were included in the 1997 edition are also included in the 2000 edition.

[3] Since the variable used to create the ranking (the percentile) is ordinal in nature, this re-calculation seems innocuous.

[4] If the reader is still not convinced about the validity of our approach, one can ignore the hypothesis tests and consider the following analysis as a benchmarking exercise, where the Indiana communities are benchmarked against the other two groups.

[5] Note that several multi-state MSAs, such as the one for the Louisville, KY area, are included with the Indiana cohort, as opposed to the peer group, since this MSA contains several Indiana communities.

[6] The peer group does not include MSAs that contain all or part of any Indiana communities. It does, however, contain multi-state MSAs that include all or part of any state that borders Indiana. So, for example, the St. Louis, MO MSA is included in the peer group, as opposed to the remaining (third) group, since many St. Louis suburbs are located in the State of Illinois.

[7] The chi-square test operates under the null hypothesis of independence between geographic distinctions and ranking changes. That is, if our null hypothesis is correct, Indiana communities are no different from the other group(s) in its ability to improve (or not improve) its livability index. Rejecting the null hypothesis indicates that there is a significant distinction between the groups (in terms of livability index changes). The test is distributed as chi-square with a single, upper tail and k degrees of freedom,

differences between our Indiana MSA's and the peer group MSAs:

(1) H_0^a: The proportion of Indiana MSAs showing an improvement in rankings = The proportion of 'peer' group MSAs showing an improvement in rankings.

If we fail to reject this null hypothesis, then Indiana communities have (with 95% confidence) fared no better in increasing or decreasing their livability (as measured by the Almanac data) than their geographic peers between 1997 and 2000. However, failing to reject this null hypothesis indicates that there are significant differences between the two groups. Trends in the cross-tabulation table can then be examined to determine the nature of those differences.[8]

The second concern of the paper is addressed by testing the following null hypotheses (again using the chi-square test of independence).

(2) H_0^b: The proportion of Indiana MSAs showing an improvement in rankings = The proportion of MSAs in the rest of the U.S. and Canada showing an improvement in rankings.

(3) H_0^c: The proportion of peer group MSAs showing an improvement in rankings = The proportion of MSAs in the rest of the U.S. and Canada showing an improvement in rankings.

The above three hypotheses are concerned with relative improvement in overall livability. Now, we also test hypotheses regarding relative improvement in each of the nine attributes of livability. Hence, we end up with ten hypotheses of 'type' H^a, ten of 'type' H^b and ten of 'type' H^c. The implication for policy is that, by examining ranking changes in a more precise fashion, community development and other agencies can target their policies and programs more effectively to improve their livability scores.

III. RESULTS OF THE INDIANA PEER-GROUP COMPARRISION (Table 2).

In this section we discuss the results from testing hypotheses of 'type' H^a. The discussion is confined to those results that are deemed important for our purpose.[9]

First, let us examine the results from the overall livability variant of H_a. We find that, statistically (at the 5% level) there is no significant difference between the proportion of Indiana MSAs that show an improvement in overall livability and that for Peer group MSAs. Now, it is worth noting that 57% of Indiana MSAs actually experienced a decline in overall livability in comparison to only 41% for the Peer group. However, this difference is apparently not large enough to be statistically significant.

Second, examining the results from the tests concerning the various attributes of livability, we find that

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where k = (the number of columns – 1)*(the number of rows – 1). Thus, we reject the null if the test statistic value exceeds the critical value. Otherwise we fail to reject the null hypothesis. Also note that, when calculating the number of rows and/or columns to determine the degrees of freedom, the column/row "totals" are not included in this calculation. So, for example, in Table 2, the degrees of freedom calculation is based on the fact that there are 2 rows in each cross-tab: one for Indiana, and one for the peer group.

8 Note that the table provides inferences about relative performance because we are only comparing two cohorts at a time. Had we included all three cohorts in a frequency table and conducted the chi-square tests, it would be difficult to make an accurate conclusion about which group(s) outperformed the other(s), even if we reject the null hypothesis, because the test does not tell us which of the three groups are significantly different. All that the test tells us is whether some difference exists. This is why we chose to conduct the analysis in a series of steps, where only two groups are compared at a time. Now if there is a significant difference, that difference can only exist if one group out performs the other, and so examination of the table will provide those inferences. While the results are not reported, we did run chi-square tests that compare all three cohorts simultaneously. Those results largely (and almost identically) reflect the reports presented in Tables 2 – 4. Further details are available from the authors upon request.

9 When conducting chi-square tests of independence, it is important to consider one other technical issue. Specifically, one should ensure that every category in a cross-tabulation table has a sufficient number of actual (and, hence, expected) frequencies. In our paper, this is a problem because the number of MSAs in each table whose rankings were unchanged between 1997 and 2000 is quite small. This may artificially inflate the test statistic, leading us to reject the null hypothesis when, in fact, we should not. To alleviate this problem, we included the "no change" category in with the "ranking falls" category (Kvlani et al 2000). As a result, each chi-square test is conducted by examining a table with two columns: one where rankings improve, and one where ranking do not improve between 1997 and 2000. In Tables 2 - 4 we present the full set of cross-tabs (with the "no change" category distinct from the "declined" category), even though our test statistics were calculated from slightly more condensed versions of these cross-tabs. We made this decision on the basis that it gives the reader a better idea of the trends in the data, yet still allows the reader to reproduce our test statistic results.

the null was rejected only with respect to the 'Jobs' and the 'Arts' categories. On the 'Jobs' attribute the peer group MSAs outperformed the Indiana MSAs. This showing was reversed for the 'Arts' attribute. Further, let us note that on each attribute other than 'Education' and the 'Arts,' the percentage of Indiana MSAs showing a decline in the rankings was greater than that for the Peer group.

In totality, the above results paint a somewhat negative picture of the performance of Indiana MSAs vis-à-vis the Peer group over the time horizon of 1997-2000. While education and arts are certainly important factors to consider when determining an area's livability, the job category is particularly troubling. Logic indicates that the decline is due to the state's reliance on manufacturing-related employment. And as the number (and proportion) of manufacturing-related jobs diminishes within the nation's economy, states like Indiana are adversely affected by those changes.

IV. RESULTS OF THE COMPARISON OF INDIANA'S MSAs VIS-À-VIS MSAs IN THE REST OF THE U.S. AND CANADA (Table 3).

Let us first discuss the results with respect to the comparison of changes in overall livability in the Indiana MSAs vis-à-vis that in MSAs in the rest of the U.S. and Canada (Henceforth we will call this latter set of MSAs as just the Rest-MSAs). Again, we find that, statistically (at the 5% level), there is no significant difference between the percentage of Indiana MSAs that show an improvement in overall livability (43%) and that for the Rest-MSAs. The percentage of the Rest-MSAs experiencing a decline in overall livability rankings is 47% in comparison to 57% for the Indiana MSAs.

The results from the tests of the hypotheses on the livability attributes reveal that only with respect to the 'Jobs' and 'Recreation' categories could we now reject the null. Indiana MSAs exhibited a deterioration in their performance on the 'Jobs' category vis-à-vis the Rest MSAs but outperformed them on the 'Recreation' category. Further, on each category other than 'Education', the 'Arts' and 'Recreation', the percentage of Indiana MSAs displaying a decline in the rankings was greater than that for the Rest-MSAs.

The above conclusion regarding the Indiana-Peer group comparison seems to apply equally well here. One thing worth mentioning is that while the Indiana MSAs outperformed the Peer group on the 'Arts' category, this showing did not carry over with regard to the Rest-MSAs.

V. RESULTS OF THE COMPARISON OF THE PEER GROUP MSAs VIS-À-VIS THE REST MSAs (Table 4)

We find once again that, statistically, there is no significant difference between the percentage of Peer group MSAs and the percentage of Rest-MSAs showing an improvement in the overall livability rankings. Interestingly, a smaller percentage of Peer group MSAs (41%) experienced a decline in the overall livability rankings in comparison to the Rest-MSAs (47%).

Hypotheses tests on the livability attributes reveal that the null was rejected only with respect to the 'Recreation' category. On this attribute the Peer group MSAs soundly outperformed the Rest-MSAs with 88% of them recording an improvement in the rankings while the corresponding figure for the Rest-MSAs was only 50%. This is reinforced by the fact that while 47% of the Rest-MSAs exhibited a deterioration in the rankings on this attribute, only 12% of the Peer group MSAs experienced such a misfortune.

VI. CONCLUDING REMARKS

The purpose of this paper is to use some basic hypothesis tests to determine whether Indiana MSAs are keeping pace with their geographic neighbors (as well as the rest of the US and Canada) with regard to changes in livability. Our results indicate that in terms of an improvement in the overall livability rankings there is not much difference between the Indiana and peer group MSAs. We did find that a larger share of Indiana MSAs suffered a setback in the rankings in comparison to the peer group; however this difference was statistically insignificant. This leads us to conclude that in the rankings sweepstakes the peer group seems to have gained, albeit slightly, over the Indiana MSAs in the period from 1997 to 2000. A similar trend emerged when we compared Indiana MSAs to all other non-Indiana, non-peer group MSAs.

Our findings allow us to postulate a number of policy recommendations. First, our results support (but do not necessarily prove) the long-standing belief that the Indiana economy's excess reliance on manufacturing-related employment has adversely affected the state's livability. Consequently, policies structured to change the state's employment base (i.e., promote employment in other, non-manufacturing fields) are warranted, should declines in livability be of significant concern to policy-makers.

We are also able to show where Indiana communities have, on average, been able to improve, namely in recreation and art. So to some extent, past policies that support these activities appear to have been successful. As a result, logic indicates that future policies should also be implemented to continue this trend. Interestingly, the state slightly improved in its education ranking. With education budgets shrinking dramatically across virtually every state in the union, we believe that our findings present a unique opportunity for policy makers. By directing extra funds towards education, Indiana MSAs would be able to markedly increase their educational reputations, particularly when compared to other areas with limited and/or shrinking funds.

While our analysis has some interesting implications, it is intended only as a first step, and our results should be viewed with caution. In this paper we only document relative changes in livability without offering any explanations for those changes. It would worthwhile to try and uncover the factors responsible for these changes. Further, we plan to consider a longer time horizon that may help bring to light some patterns regarding performance on the various attributes of livability that currently lie obscured due to the shorter horizon. A third drawback to the paper is that our analysis is conducted at the state level, rather than the individual level. As such, our results may be distorted by individual MSAs who achieved exceptional (or sub-par) changes in ranking. By disaggregating the data, it would be possible to look at individual Indiana communities, and consequently determine which communities are responsible for Indiana's overall success (or lack thereof) in increasing its livability over time.

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Table 1: Category Names and Definitions:

Category	Definition
Living	Index measuring costs of living in each community.
Transportation	Index measuring the availability and relative costs of transportation in each community.
Jobs	Index measuring the number and diversity of jobs in each community.
Education	Index measuring the quality of education (both primary and secondary) in each community.
Climate	Index measuring the climate (e.g., temperature, precipitation, etc.) in each community.
Crime	Index measuring the amount of per capita crime in each

	community.
Arts	Index measuring the availability of arts and other creative events in each community.
Care	Index measuring the quality and availability of medical care in each community.
Recreation	Index measuring the depth and breadth of recreational activities available in or near each community.
Overall	Average index computed by taking the mean of the percentile scores for each of the previous nine categories.

Table 2 (Indiana-Peer Group Comparison)

NOTE: For each chi-square test, the critical values are:

Critical value at 5% level = 3.84 (1 d.o.f)
Critical value at 10% level = 2.71 (1 d.o.f)
Please see footnotes 8 and 10 for additional information about the test.

A. Overall Livability

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	0	8	14
Peer Group	20	0	14	34
Total	26	0	22	48

Chi-square value from test of H_a = 1.02

B. Cost of Living

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	0	8	14
Peer Group	18	0	16	34
Total	24	0	24	48

Chi-square value from test of hypothesis of type H_a = 0.4

Table 2 (contd…)

C. Transportation

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	9	0	5	14
Peer Group	24	1	9	34
Total	33	1	14	48

Chi-square value from test of hypothesis of type H_a = 0.18

D. Jobs

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	2	0	12	14
Peer Group	20	0	14	34
Total	22	0	26	48

Chi-square value from test of hypothesis of type H_a = 7.92

E. Education

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	9	0	5	14
Peer Group	17	0	17	34
Total	26	0	22	48

Chi-square value from test of hypothesis of type H_a = 0.82

F. Climate

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	4	0	10	14
Peer Group	16	0	18	34
Total	20	0	28	48

Chi-square value from test of hypothesis of type H_a = 1.39

G. Crime

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	0	8	14
Peer Group	19	1	14	34
Total	25	1	22	48

Chi-square value from test of hypothesis of type H_a = 0.67

Table 2 (contd…)

H. Arts

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	7	1	14
Peer Group	5	21	8	34
Total	11	28	9	48

Chi-square value from test of hypothesis of type H_a = 4.45

I. Medical Care

	Number of MSAs	Number of MSAs	Number of	Total

	Showing an Improvement	Showing No Change in Ranking	MSAs Showing a Decline	
Indiana	7	0	7	14
Peer Group	18	1	15	34
Total	25	1	22	48

Chi-square value from test of hypothesis of type H_a = 0.03

J. Recreation

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	11	0	3	14
Peer Group	30	0	4	34
Total	41	0	7	48

Chi-square value from test of hypothesis of type H_a = 0.74

Table 3 (Indiana – Rest-MSAs Comparison)

Critical value at 5% level = 3.84 (1 d.o.f)
Critical value at 10% level = 2.71 (1 d.o.f)
Please see footnotes 8 and 10 for additional information about the test.

A. Overall Livability

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	0	8	14
Rest-MSAs	150	5	139	294
Total	156	5	147	308

Chi-square value from test of $H_b = 0.36$

B. Cost of Living

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	0	8	14
Rest-MSAs	150	3	141	294
Total	156	3	149	308

Chi-square value from test of hypothesis of type $H_b = 0.36$

C. Transportation

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	9	0	5	14
Rest-MSAs	184	4	106	294
Total	193	4	111	308

Chi-square value from test of hypothesis of type $H_b = 0.02$

D. Jobs

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	2	0	12	14
Rest-MSAs	141	3	150	294
Total	143	3	162	308

Chi-square value from test of hypothesis of type $H_b = 6.09$

Table 3 (contd…)

E. Education

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	9	0	5	14
Rest-MSAs	147	3	144	294
Total	156	3	149	308

Chi-square value from test of hypothesis of type H_b = 1.09

F. Climate

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	4	0	10	14
Rest-MSAs	146	3	145	294
Total	150	3	155	308

Chi-square value from test of hypothesis of type H_b = 2.38

G. Crime

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	0	8	14
Rest-MSAs	163	15	116	294
Total	169	15	124	308

Chi-square value from test of hypothesis of type H_b = 0.86

H. Arts

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	6	7	1	14
Rest-MSAs	79	160	55	294
Total	85	167	56	308

Chi-square value from test of hypothesis of type H_b = 1.71

I. Medical Care

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	7	0	7	14
Rest-MSAs	160	5	129	294
Total	167	5	136	308

Chi-square value from test of hypothesis of type H_b = 0.11

Table 3 (contd…)

J. Recreation

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Indiana	11	0	3	14
Rest-MSAs	146	9	139	294
Total	157	9	142	308

Chi-square value from test of hypothesis of type H_b = 4.47

Table 4 (Peer Group – Rest-MSAs Comparison)

Critical value at 5% level = 3.84 (1 d.o.f)
Critical value at 10% level = 2.71 (1 d.o.f)
Please see footnotes 8 and 10 for additional information about the test.

A. Overall Livability

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	20	0	14	34
Rest-MSAs	150	5	139	294
Total	170	5	153	328

Chi-square value from test of $H_c = 0.74$

B. Cost of Living

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	18	0	16	34
Rest-MSAs	150	3	141	294
Total	168	3	157	328

Chi-square value from test of hypothesis of type $H_c = 0.05$

C. Transportation

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	24	1	9	34
Rest-MSAs	184	4	106	294
Total	208	5	115	328

Chi-square value from test of hypothesis of type $H_c = 0.84$

D. Jobs

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	20	0	14	34
Rest-MSAs	141	3	150	294
Total	161	3	164	328

Chi-square value from test of hypothesis of type $H_c = 1.44$

Table 4 (contd…)

E. Education

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	17	0	17	34
Rest-MSAs	147	3	144	294
Total	164	3	161	308

Chi-square value from test of hypothesis of type $H_c = 0.00$

F. Climate

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	16	0	18	34
Rest-MSAs	146	3	145	294
Total	162	3	163	328

Chi-square value from test of hypothesis of type $H_c = 0.08$

G. Crime

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	19	1	14	34
Rest-MSAs	163	15	116	294
Total	182	16	130	328

Chi-square value from test of hypothesis of type $H_c = 0.002$

H. Arts

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	5	21	8	34
Rest-MSAs	79	160	55	294
Total	84	181	63	328

Chi-square value from test of hypothesis of type $H_c = 2.37$

Table 4 (contd…)

I. Medical Care

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	18	1	15	34
Rest-MSAs	160	5	129	294
Total	178	6	144	328

Chi-square value from test of hypothesis of type $H_c = 0.03$

J. Recreation

	Number of MSAs Showing an Improvement	Number of MSAs Showing No Change in Ranking	Number of MSAs Showing a Decline	Total
Peer Grp	30	0	4	34
Rest-MSAs	146	9	139	294
Total	176	9	143	328

Chi-square value from test of hypothesis of type $H_c = 18.24$