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# The Correlates of Community Attractiveness

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Anyone familiar with American communities knows that they vary significantly in terms of their physical attractiveness. In this study, the authors explore the community-level correlates of attractiveness using data from all of Iowa's 954 cities and towns. Each of the communities was visited by a researcher who scored it in terms of its attractiveness. The authors correlate these ratings with a variety of community-level sociodemographic, economic, and attitudinal indicators. The results show that attractive communities tend to be larger, wealthier, and more civic-minded than other communities. Attractive communities also tend to have a higher percentage of elderly and college-educated residents. Further analysis revealed that population, wealth, and education are correlated less strongly with attractiveness as community size increases, whereas civic mindedness is correlated more strongly with attractiveness as community size increases. The authors discuss what their findings mean for communities trying to become more attractive.

**Keywords:** *community; urban planning; beautification; urban design; community attractiveness*

At the 1893 Chicago World's Fair, architect Daniel Hudson Burnham's White City introduced thousands of Americans to the aesthetic possibilities of urban planning (Bolotin & Laing, 2002). With its spacious pedestrian plazas, tree-lined boulevards, and stately public monuments, the city-scale exhibition, painted all in white, captivated visitors with its grandeur, purity, and harmony. Concern about community attractiveness in America certainly predated the exposition, but it was Burnham's city that first sparked widespread popular interest in the visual image of the urban environment.

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**Authors' Note:** For access to the community attractiveness data used in this research, contact Professor Rice at the Department of Political Science, University of Iowa, Iowa City, Iowa ([tom-rice@uiowa.edu](mailto:tom-rice@uiowa.edu)). The authors would like to thank Gordon Scholz for his assistance.

In the years following the fair, citizen-led initiatives in cities and towns throughout the nation pressed for everything from comprehensive planning to neighborhood flower gardens. Apart from lulls during the World Wars and the Great Depression, this interest in community aesthetics has remained strong. Today, hundreds of communities, both large and small, have ongoing efforts to improve their physical attractiveness, often involving collaborations between government, citizen committees, service organizations, and local businesses.

This persistent citizen interest in community aesthetics has been matched by a substantial and growing academic interest in urban design. By the middle of the 20th century, city planning was being taught at many universities under a variety of disparate perspectives. Marijuan (1978) distilled these approaches into three broad types: those dependent on a particular politico-cultural system, those related to a variable politico-cultural system, and those that are not dependent on any politico-cultural system. Marxist planning, which holds that the responsibility of the urban planner is to “eliminate inequalities in the benefits the city offers its citizens” (Gosling, 2003, p. 23), is a good example of a politicocultural system approach. An example of a variable politicocultural system perspective is the mathematical model, which contends that urban planning can be reduced to an arithmetic relationship between structures and activities. Many academicians who were unsatisfied with these heavily deterministic and mechanical approaches to urban design choose to focus instead on bringing citizen opinion and behavior into the planning process. It is these scholars who speak most directly to our research.

Kevin Lynch (1960), one of the leaders of the movement to decouple planning from politicocultural frameworks, argued that attractive city landscapes have important positive psychological and sociological influences on people, and thus, successful urban design depends in part on understanding how people evaluate their city environments and what these environments mean to them. According to Lynch, citizens’ evaluations of their communities are formed in a three-step process: they identify objects (e.g., buildings, parks, streets), they recognize patterns within and between objects, and they derive some practical or emotional meanings from the objects and patterns. To learn about citizens’ evaluations, scholars and planners who subscribe to this approach often ask citizens about their urban environment and observe how they use their environment (Appleyard, 1976, 1981; Bosselman, MacDonald, & Kronmeyer, 1999; Craik & Zube, 1976; Evans-Cowley & Nasar, 2004; Nasar, 1998; Steinitz, 1968). This information then plays a major role in designing attractive and functional

urban settings. It is interesting to note that the design preferences of professionals and the public often do vary substantially (Devlin & Nasar, 1989; Groat, 1982; Rapoport, 1990; Sauer, 1972), lending support to the idea that planners need to talk to citizens to understand how they evaluate their communities.

Research has also shown that citizens tend to evaluate urban environments similarly, even across cultures (Hull & Revell, 1989; Kaplan & Kaplan, 1989; Rapoport, 1977; Ulrich, 1993). As Nasar (1998) states, "Individuals and groups may have idiosyncratic preferences, [but] they generally agree on certain components that make for a desirable urban form" (p. 29). If this is the case, then we should expect communities to be roughly the same in terms of attractiveness, everything else being equal—that is, if all communities had the same resources (natural, human, financial, and so on), then it stands to reason that they would have many of the same desirable components and be similarly attractive. This, of course, is far from the case. Here in America, as elsewhere, community attractiveness varies widely. Put in Lynch's (1960) terms, most people would agree that certain cities have more pleasing objects and patterns than other cities.

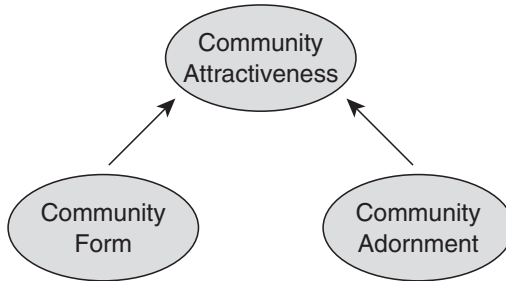
Why is it that some communities are more attractive than others? It is important to be clear what we are asking. Urban design scholars have identified many physical characteristics of communities that correlate with citizens' evaluative opinions of the attractiveness of their locale, but very little work has been done on why some communities have more of these characteristics than others. It is the latter puzzle that interests us. To date, the most relevant research in this area is a study by Rice and Miller (1999) that looks at how community-level factors correlated with town upkeep in 99 small Iowa communities. By community-level factors, Rice and Miller mean variables aggregated to the community-level, such as the median household income of the community and the percentage of residents who are homeowners. Their results show that upkeep is systematically related to a variety of community-level sociodemographic, economic, and attitudinal factors. Although upkeep is not exactly the same as aesthetics, the Rice and Miller study is nevertheless a good starting point for our research on the correlates of community attractiveness. We expand on their work by shifting the focus from upkeep to attractiveness and by looking at all 954 incorporated cities and towns in Iowa. Using multiple regression analysis, we test for the relationship between 10 community-level variables and community attractiveness. What we want to know is whether differences in these community-level variables help us account for why some Iowa communities are more attractive than others.

## Justification

Investigating how community-level sociodemographic, economic, and attitudinal variables correlate with community appearance is not simply an idle academic exercise. If, on one hand, community-level variables are not significantly correlated with community attractiveness, this would suggest that the determinants of appearance lie elsewhere. Perhaps community aesthetics is more a function of idiosyncratic factors, such as the presence of a motivated individual or a few wealthy patrons. If, on the other, we find that community-level variables relate strongly to appearance, this would indicate that aesthetics is in part a function of the collective characteristics of a community. Understanding these relationships should help citizens interested in improving the attractiveness of their communities better allocate their time and money. If we find, for example, that community appearance is strongly related to the extent to which residents are engaged in civic activities, then attractiveness advocates might do well to invest in programs designed to cultivate civic-mindedness. If, instead, communities with higher average household incomes are the most attractive, then attractiveness activists may want to focus on promoting local economic development. The point is that a better understanding of the community-level correlates of attractiveness should be of practical use to the people concerned with improving community aesthetics.

Another justification for examining the community-level correlates of attractiveness is that community appearance influences emotions and attitudes. As an example, urban disorder in the form of dilapidation and abandoned structures has been shown to lead to feelings of anxiety and fear (Perkins, Meeks, & Taylor, 1992; Skogan & Maxfield, 1981; Warr, 1990). More broadly, Russell and Snodgrass (1989) observed that people experience a variety of emotions and meanings in relation to their physical environment, such as excitement, relaxation, and distress. Beyond these affective responses to the environment, research has also shown that people make judgments based on appearance. For instance, certain neighborhoods may be viewed as prestigious, friendly, or homogeneous simply by their appearance (Cherulnik & Wilderman, 1986; Nasar, 1989; Lansing, Marans, & Zehner, 1970). If urban settings do, indeed, evoke emotions and prompt judgments, then our research, which investigates the determinants of appearance, may help community activists change their cities in ways that elicit desirable emotions and opinions among citizens and visitors.

**Figure 1**  
**Model of Community Attractiveness**



### A Simple Model of Community Attractiveness

As already noted, people tend to evaluate the attractiveness of urban settings similarly. But what aspects of cities do they use in forming their evaluations? Rapoport (1993) provides a useful framework when he suggests that communities have both fixed and semi-fixed features. Fixed features are defined as permanent or slow changing elements of a city, such as buildings, street patterns, and park spaces. Semi-fixed features are defined as changeable elements, such as landscaping, signage, and color. Taken together, these fixed and semi-fixed features consist of the types of objects and patterns that Lynch (1960) says citizens use to form evaluative images of their communities. For the purposes of our study, we modify Rapoport's terminology, making community attractiveness a function of community form (fixed features) and community adornment (semi-fixed features). Figure 1 puts our thinking in the form of a simple model, with both form and adornment influencing community attractiveness. Objects, such as buildings and streets, give a community a certain form depending on their size, shape, location, and how they relate to each other, and this form is certainly an important determinant of community attractiveness. Quite apart from their form, objects and the patterns between them can also be made more or less attractive by changing their semi-fixed features, such as landscaping, signage, and color. To us, then, community attractiveness is a function of the underlying size, shape, and configuration of its objects and the way the objects are accoutered.

## Data and Hypotheses

We begin this section by introducing our dependent variable, community attractiveness. Next, we discuss the community-level variables that we think might be related to attractiveness.

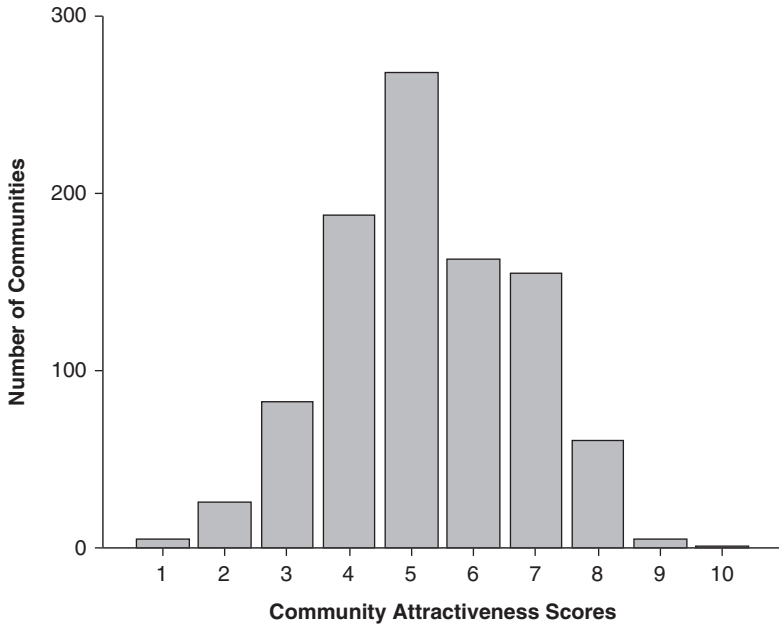
### Community Attractiveness

Our measure of community attractiveness comes from a laborious study conducted by one of the authors. Between November 1998 and November 2003, this researcher, who is a retired public school teacher, visited all 954 incorporated cities and towns in Iowa and rated each of the communities in terms of its attractiveness. It is important to note that the researcher completed his ratings before meeting his co-authors, so his attractiveness criteria and assessments were not influenced by the other authors. Each community's rating was derived from driving through the downtown and a number of other randomly selected areas. Thus, each community's rating is based on the observable data that any attentive visitor would see traveling around town by automobile. Very small towns could be evaluated in a matter of minutes, whereas the larger communities required many hours. On leaving a community, the researcher gave the town a score on a 1 to 10 scale, with 1 meaning that it was very unattractive and 10 meaning that it was very attractive.

When scoring the towns, the researcher considered manmade objects and not the natural environment (e.g., lakes, rivers, and hills). For the manmade objects, he looked at both hard objects—including buildings, streets, city layout, railroad tracks, and parks—and more changeable objects, such as exterior wall coverings, flower beds, and compatible color combinations. These hard and changeable objects correspond to what we refer to in our model of community attractiveness as community form and community adornment. The actual scores that the researcher gave the 954 towns are normally distributed (see Figure 2), with 45.2% of the communities rated a 5 or 6 and 81.2% rated from 4 to 7. The mean of the ratings is 5.24, and the standard deviation is 1.52.

How closely do our attractiveness ratings correspond to the actual attractiveness of the communities? This is, of course, impossible to precisely determine because attractiveness, by definition, is partly subjective; people can disagree about the attractiveness of anything, including a community. We can, however, conduct a test to help give us confidence that our attractiveness ratings are similar to the ratings that most other people would give

**Figure 2**  
**Distribution of Community Attractiveness Scores**



the towns. The test makes use of the community upkeep data collected by Rice and Miller (1999). As noted earlier, these scholars rated 99 small Iowa towns in terms of their upkeep. The upkeep of a community was calculated after an extensive on-site tour of the town. During the visit, the researcher completed a lengthy objective survey on the upkeep of the businesses, residences, schools, parks, and churches. If our subjective community-level attractiveness ratings correlate modestly with the Rice and Miller (1999) objective community-level upkeep scores, this would be evidence that the ratings are, indeed, measuring attractiveness. After all, well-kept property is generally considered more attractive than poorly kept property. Upkeep and attractiveness are certainly far from identical concepts, but they should be related. If the community attractiveness ratings and upkeep scores are uncorrelated, this would suggest that we are not measuring attractiveness, and if the scores are almost identical, this would suggest that we may be



measuring upkeep more than attractiveness. Rice and Miller (1999) generated community-wide upkeep scores for 88 of the 99 towns, and when these scores were related to our attractiveness scores for the same towns, the correlation coefficient was .50. This is the moderate association we were looking for to give us confidence that our attractiveness ratings are actually measuring attractiveness.

## Independent Variables

The community-level indicators that we used as independent variables were organized into three categories: *sociodemographic*, *economic*, and *attitudinal*. Along with these indicators, we included a variable to assess the time of year that each of the communities was visited.

*Sociodemographic.* Education is certainly one factor that could influence community attractiveness. Better-educated people should be more likely to see the psychological and economic benefits of living in an attractive community, and they should also be more likely to have the necessary training and organizational skills to effect change. We measured education as the percentage of adults 25 years old and older in each community who have a 4-year college degree (mean = 12.28, standard deviation = 8.64). Population is another sociodemographic factor that might influence attractiveness. Larger communities should have a larger pool of talented people to participate in attractiveness initiatives. The population distribution of Iowa communities is seriously skewed, so we operationalized population by logging it to base 10. After logging, the skewness statistics was reduced from 11.69 to an acceptable .636 (mean = 2.74, standard deviation = .63). Age is a third sociodemographic factor that may influence attractiveness. Towns with proportionately more elderly residents may be more attractive because the elderly have more time to be involved in attractiveness initiatives—they tend not to be busy working and raising families. We measured age as the percentage of residents in each town who were 65 years old and older (mean = 18.7, standard deviation = 7.15). A fourth factor that may influence attractiveness is homeownership. People who own their homes should have more incentive than renters to keep their homes and communities attractive. Homeownership was measured as the percentage of adults in each town who own their home (mean = 80.09, standard deviation = 7.75). The distance that people commute to work is yet another factor that may influence attractiveness. It seems reasonable to expect that people who commute long

distances will be less psychologically tied to their community and have less time to invest in community affairs. Commuting was measured as the percentage of workers who travel less than 20 minutes to their jobs one way (mean = 50.52, standard deviation = 17.87).

*Economic.* Wealth should be related to community attractiveness. Put simply, wealthier communities have more monetary resources available to make their towns attractive than poorer communities. This is not to say that well-to-do communities will always be more attractive than poorer communities, but it is to say that financial resources make it easier to build attractive urban settings. We measured wealth as the median household income in each community (mean = \$35,345, standard deviation = \$8,340). The age of the housing stock in each town may also be related to attractiveness. On average, we suspect that newer homes are more attractive than older homes because more maintenance is required to keep older homes good looking. Many older homes, especially in historic districts, are beautiful in form and adornment, but the vast majority of the older homes in these small Iowa towns are small plain wood frame structures that need constant maintenance. We measured the age of the housing stock as the percentage of homes in each community built after 1939 (mean = 57.12, standard deviation = 16.25). The 1939 cutoff was used because this is how the data are reported by the U.S. Census Bureau.

*Attitudinal.* Communities of civic-minded people should be, on average, more attractive than communities of self-interested people. It takes time and money to keep a community attractive, and citizens with a deep commitment to the public good should be more willing to make the necessary sacrifices. Measuring the level of civic-mindedness in the Iowa towns proved to be a challenge. After an extensive search, we were unable to locate any attitudinal data specific to the 954 communities. For proxy measures, we turned to county-level data. There is, of course, a loss of precision in using county data to measure community characteristics, but this is probably less of a problem in Iowa than in many other states. Most of Iowa's 99 counties are rural and there has not been much migration into them for almost a century. Thus, some of the civic attitudes and values of the original settlers may still be in place. Because counties tended to be settled by like-minded people, the county-level attitudinal measures may, in many instances, be serviceable surrogates for community-level characteristics. This seems even more likely in light of research that suggests that civic

attitudes are often passed down from generation-to-generation (Putnam, 1993; Rice & Feldman, 1997).

Even at the county level, it was difficult to locate good measures of civic-mindedness. In the end, we settled on two measures: church attendance and voter turnout. Evidence has shown repeatedly that people who attend church regularly tend to be more involved in their communities (Liu, Ryan, Aurbach, & Besser, 1998; Putnam, 2000; Verba, Schlozman, & Brady, 1995). Because community involvement is often necessary for the success of attractiveness initiatives, it follows that towns with lots of churchgoers should be more attractive than other towns, on average. As our measure of churchgoers, we used data from the Glenmary Institute on the percentage of people in each county who attend church regularly (mean = 64.16, standard deviation = 16.06). This measure misses people who attend non-Christian religious services, but almost everyone who attends services in rural Iowa is Christian. Voting is one of the most common expressions of civic engagement. Decades of research has shown that voting is associated with other civic activities, and a recent study demonstrates that voting actually leads to higher levels of interpersonal trust and volunteerism (Rahn, Brehm, & Carlson, 1999). It would seem, then, that communities with high levels of voter turnout may be more attractive. We measured voter turnout as the percentage of people in each county who voted in the 2000 presidential election (mean 61.04, standard deviation = 4.12). To construct variables with the county-level religious and voting data, we attached to each town the church and voting data for its county.

*Season.* Along with the sociodemographic, economic, and attitudinal indicators, we constructed a variable to measure the time of year of the community visit. Attractiveness assessments done in the warmer months may be higher than assessments done in colder months because towns tend to look better with leaves on the trees and flowers in bloom. We tested for this possibility by creating a variable scored a 1 for the towns visited from November to March (235 communities) and scored a 2 for the towns visited from April to October (719 communities).

## Analysis

For the first part of our analysis, we calculated the bivariate correlations between the community attractive ratings and the independent variables.

After this, we entered all of our independent variables into an ordinary least squares regression model to assess the impact of each variable on community attractiveness controlling for all of the other variables.

## **Bivariate Relationships**

The bivariate correlations between the community attractiveness scores and the independent variables are presented in the first column of Table 1. The results show that most of the independent variables are significantly related to attractiveness as hypothesized. The sociodemographic indicators for population and education were the most strongly linked to attractiveness, with correlation coefficients of .57 and .49, respectively. These relationships indicate that larger and better-educated towns tend to be more attractive. Two of the other sociodemographic variables, age and commute distance, were also significantly related to community attractiveness, and their coefficients indicate that attractiveness tends to be higher in towns with proportionally more elderly residents and in towns where workers commute shorter distances. The remaining sociodemographic variable, homeownership, was significantly related to attractiveness, but the relationship was the opposite of what we expected: communities with a higher percentage of homeowners tended to be less attractive. We suspect that the reason for this relationship is that much of Iowa's rental property has been constructed relatively recently, and thus, it is probably well-kept and reasonably attractive. Moreover, most of this new rental property is in Iowa's larger communities, which, as the population coefficient indicates, tend to be more attractive over all.

Both of the economic variables are statistically significant. The coefficient for median household income indicates that wealthier towns tend to be better looking than poorer towns. The coefficient for the age of the housing suggests that communities with a high percentage of homes built after 1939 tend to be more attractive than communities with older housing. This relationship implies that newer housing is, on the whole, better looking than older housing. It is possible, however, that the housing variable is also measuring the long-term economic health of the town. A community that has struggled economically for many decades has probably had very little new construction. It probably also lacks the financial resources—and perhaps the psychological energy—to keep its structures, old and new, attractive.

According to the coefficients for the attitudinal indicators, the civic mindedness of a community is significantly related to its attractiveness. The

**Table 1**  
**Community Attractiveness Correlation and Regression Coefficients**

Independent Variables	Bivariate Correlation Coefficients	Multivariate Regression Coefficients
Sociodemographic		
Education	.49***	.03*** (.16)
Population	.57***	.89*** (.37)
Age	.15***	.05*** (.21)
Homeownership	-.28***	-.01* (-.07)
Commute distance	.21***	-.00 (-.01)
Economic		
Income	.33***	.00*** (.28)
Housing stock	.35***	.01* (.05)
Attitudinal		
Church attendance	.23***	.03*** (.28)
Voter turnout	.13***	.02* (.05)
Control		
Time of year	—	.04 (.01)
$R^2$	—	.52
$N$	954	954

Source: The data for all of the variables are from the 2000 United States Census, unless otherwise noted.

Note: *Education* is the percentage of people 25 years old and older in each community who have at least a 4-year college degree. *Population* is the 2000 population of each community logged to base 10. *Age* is the percentage of people in each community who are 65 years old and older. *Homeownership* is the percentage of people in each community who own their home. *Commute distance* is the percentage of workers in each community who travel less than 20 minutes to their jobs one way. *Income* is the median household income of each community. *Housing stock* is the percentage of homes built after 1939 in each community. *Church attendance* is the percentage of people who attend church regularly in each county (from the Glenmary Research Center, 2002). *Turnout* is the percentage of people 18 years old and older in each county who voted for president in the 2000 election (the vote totals are from the Iowa Secretary of State, 2002, and the number of people in each county who are 18 years old and older is from the U.S. Census Bureau, 2002). *Season* is coded a 1 for the communities that were visited from November to March and coded a 2 for the communities visited from April to October.  $N$  is the sample size.  $R^2$  is the coefficient of multiple determination; the cell figures in the regression column without parentheses are unstandardized regression coefficients and the figures with parentheses are standardized regression coefficients.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

relationship between attractiveness and church attendance indicates that communities in counties where most people go to church are more attractive than communities in counties with lower church attendance. The coefficient for the other attitudinal variable indicates that towns in counties with

high voter turnout tend to be more attractive than communities in counties with low turnout. Evidently, the civic-mindedness that leads people to join churches and vote also helps motivate them to keep their towns attractive.

## Multivariate Relationships

The next part of our investigation involves using ordinary least squares multiple regression to assess the relative impact of the independent variables on community attractiveness. The results of this analysis are displayed in the second column in Table 1. All but two of the independent variables are statistically significant, suggesting the community attractiveness is the product of many forces. A check for multicollinearity showed that the variance inflation factors scores for the independent variables were all below 2.30, safely below the 10.00 level that signifies a problem. Taken together, the variables accounted for 52% of the variation in the attractiveness scores. Given that there is undoubtedly a fair amount of subjectivity in the attractiveness scores, the percentage of variation explained is very respectable.

A review of the standardized coefficients (the values in parentheses) shows that population has the most influence on attractiveness. Interpreted literally, the coefficient indicates that a 1 standard deviation increase in population logged translates into a .37 standard deviation increase in attractiveness. After population, income and church attendance are the most powerful independent variables. Their positive coefficients signify that wealthy towns and towns in counties where churchgoing is prevalent are associated with more attractive communities. Age and education are the next most influential independent variables, and their coefficients indicate that towns with proportionally more elderly residents and towns with better-educated residents tend to be more attractive. Voter turnout and the age of the housing stock are also correlated with attractiveness as we hypothesized. The coefficient for homeownership continues to be negative and significant, signifying that towns with more renters tend to be more attractive. The insignificant coefficient for commuting time indicates that once we control for all of the other variables, the length of time that workers travel to their jobs is unrelated to community attractiveness. The other insignificant variable, season, tells us that there is no bias in the researcher's town ratings by season: communities visited in the warmer months were scored no higher or lower, on average, than communities visited in the colder months.

In an effort to learn even more from the data, we decided to extend our analysis by segmenting the communities by population and re-estimating

**Table 2**  
**Community Size and Community Attractiveness**

Independent Variables	Community Population		
	0 to 999	1,000 to 9,999	More than 9,999
Sociodemographic			
Education	.16***	.23**	.08
Population	.29***	.26***	-.02
Age	.20***	.18*	-.49
Homeownership	-.05	-.02	-.03
Commute distance	.00	-.06	.05
Economic			
Income	.31***	.06	.09
Housing stock	.06*	.04	.13
Attitudinal			
Church attendance	.28***	.34***	.36*
Voter turnout	.05*	.10*	.36*
Control			
Time of year	.04	-.08	-.03
$R^2$	.44	.29	.60
$N$	678	242	34

Note: See Table 1 for variable descriptions; the figures are standardized regression coefficients.

the regression model. For this analysis, we divided the communities into three groups; those with less than 1,000 residents, those with between 1,000 and 9,999 residents, and those with at least 10,000 residents. These cut points tend to capture very different kinds of Iowa communities. Almost all of the towns with less than 1,000 residents are struggling rural communities, many of which have lost people, businesses, and public schools during the past few decades. Those communities with between 1,000 and 9,999 residents tend to be a bit more vibrant. They are often county seat towns and many of them are home to a consolidated high school. They also tend to attract shoppers from the neighboring smaller towns. The Iowa communities with populations of 10,000 or more are generally county seats and regional shopping hubs. Many of them also have institutions of higher education and a significant number of manufacturing jobs.

Table 2 presents the results of the regression equations for the three sizes of communities. Because the purpose of this analysis is to compare the relative strength of the independent variables across the three population categories, we have presented the standardized regression coefficients in the table. For informational purposes, we have also signified the statistical

significance of each coefficient. We want to stress, however, that comparing the significance of the coefficients across the community size categories is of little substantive interest because the sample sizes of the three population categories influence vary widely. Everything else being equal, significance is easier to achieve as the samples size increases. Thus, the standardized coefficients, which are unaffected by sample size, are much more valid indicators for contrasting the relative importance of the independent variables.

Comparing the standardized coefficients across the three models reveals a number of interesting differences. Most noticeable, perhaps, is that the coefficient for the percentage of elderly in a community changes from positive to negative as town size increases. We suspect that the reason for this is that in smaller towns, the elderly have a psychological commitment to their community and the time to beautify their own property. In more populous communities, large percentages of elderly residents are a sign of struggling economies and, thus, a sign of communities that may be short of money and organizational energy to devote to large-scale attractiveness efforts.

Another difference across the three models is the increased importance of voter turnout. This trend, coupled with the more slowly growing influence of church attendance, suggests that civic-mindedness has a much greater influence on community attractiveness in larger communities than in smaller communities. The reason for the trend may be that attractiveness in small towns primarily involves keeping up private residences, which does not necessarily require cooperative effort among individuals. In a larger community, however, civic-mindedness is needed to plan and implement attractiveness initiatives for the many public and commercial spaces.

Some of the additional differences across the three models that are worthy of mention are the declining importance of education, income, and population. According to the standardized coefficients, education, income, and population exert less influence on attractiveness in larger communities than in smaller communities. The reason for these changes may have to do with economies of scale. In larger communities, there are probably always enough educated and talented people to organize attractiveness efforts, and there is probably always enough money to fund at least modest attractiveness initiatives. The challenge is to marshal this talent and wealth to improve community aesthetics. And this brings us back to the importance of civic-mindedness in larger communities: skills and money are more plentiful in larger communities, but it takes civic-mindedness to translate these resources into successful attractiveness initiatives. Similarly, there are always more



people in larger communities to do the mundane tasks necessary for attractiveness efforts to succeed, but it takes civic-mindedness to motivate these individuals to get involved. Compared to large communities, the success of attractiveness efforts in small towns are much more likely to hinge on a few educated and talented people, the tax revenue from a few healthy businesses, and the availability of loyal volunteers. In short, the marginal impact of a few more leaders, dollars, and volunteers should be far greater in smaller communities.

## Discussion

Given the long-standing and widespread interest in community aesthetics, it is puzzling that scholars have not searched for the correlates of attractiveness across a large sample of cities and towns. Our analysis is a first attempt to fill this noticeable void. Looking at Iowa communities, we find that attractiveness is related systematically to a variety of community-level variables. For example, attractive communities tend to have well-educated residents and a high percentage of churchgoers. Although conclusions such as these are interesting, their use depends in part on whether they are generalizable outside Iowa. If they are, then our results may be of use to a wide array of people who are trying to improve the look of their communities. It will, of course, take additional research in other parts of the nation to know for sure how broadly our findings apply, but the comprehensive scope of the Iowa analysis buttresses the case for generalizability. One shortcoming that does need special mention is that our sample does not include any large cities. It is possible that the community-level correlates of attractiveness for the nation's most populous cities are different than those for the Iowa communities.

If we assume that the Iowa results are generalizable to small and medium-size communities, what recommendations do they offer to the cities and towns across the country that would like to be more attractive? For starters, our findings do not offer any quick fixes. Creating a solid foundation for lasting attractiveness seems to have a lot to do with the fundamental sociodemographic, economic, and attitudinal makeup of a community. Generally speaking, our findings suggest that wealthier and better-educated communities tend to be more attractive, so beautification initiatives would do well to make long-term investments in economic development and education. This might involve trying to attract high-paying new businesses and well-educated new residents, but it could also consist of providing economic

assistance to existing businesses and educational opportunities to current residents. Our results also suggest that attractive communities tend to have civic-minded citizens. Although this is, perhaps, no surprise, it is our guess that attractiveness initiatives spend almost all of their time and money on tangible projects and virtually none of their time and money on trying to create a sense of civic-mindedness among community residents. According to the findings of this study, it might be wise to shift some resources to the long-term development of civic-mindedness.

We can refine these prescriptions a bit by considering the results of the regression models segmented by community size. Smaller communities may benefit more than larger communities by investing in economic development and education. The models showed that attractiveness was strongly correlated with wealth and education levels in small communities, but that in larger communities, the relationships were almost nonexistent. Larger communities would do better to try to foster civic-mindedness. Smaller communities, too, will most likely benefit from an increased civic spirit, although to a lesser degree.

These recommendations assume that the sociodemographic, economic, and attitudinal factors in our models influence community attractiveness, instead of the other way around. It is certainly possible—even probable—the attractiveness exerts some influence on these other factors. Attractive communities, for instance, probably attract more new businesses than unattractive communities, and attractiveness may even influence civic-mindedness. For the most part, however, we think that the causal paths run from the sociodemographic, economic, and attitudinal factors to attractiveness. In any event, even if the causality runs in both directions, communities should still improve their attractiveness if they follow the recommendations that flow from our analysis.

Finally, it is worth stepping back from the specific conclusions of our research and asking whether our methodology of comparing urban design across hundreds of communities has wider applicability in the study of urban planning. We think it does. For instance, there is considerable debate at the moment about the extent to which new urbanism, which emphasizes walkable neighborhoods, pedestrian-friendly civic spaces, and mixed-use urban districts, actually results in more foot traffic and neighborly behavior as proponents claim (Lund, 2003). Existing studies often try to answer this question by comparing citizen behavior across a handful of neighborhoods, making it difficult to sort out statistically the extent to which these behaviors are a product of urban design as opposed to the product of the sociodemographic, economic, and attitudinal characteristics of the citizens. If the

appropriate data were available for hundreds of cities or neighborhoods the power of multivariate statistical analysis could be used to determine with greater precision the role of design in influencing citizen behavior. This is just one example of how studies using very large samples of communities might help contemporary planners. Of course, the challenge is marshalling the resources to conduct such large research projects.

## References

- Appleyard, D. (1976). *Planning a pluralist city: Conflicting realities in Ciudad Guayana*. Cambridge, MA: MIT Press.
- Appleyard, D. (1981). *Livable streets*. Berkeley, CA: University of California Press.
- Bolotin, N., & Laing, C. (2002). *The world's Columbian exposition: The Chicago World's Fair of 1893*. Champaign, IL: University of Illinois Press.
- Bosselman, P., MacDonald, E., & Kronmeyer, T. (1999). Livable streets revisited. *Journal of the American Planning Association, 65*(2), 168-180.
- Cherulnik, P. D., & Wilderman, S. K. (1986). Symbols of status in urban neighborhoods: Contemporary perceptions of nineteenth-century Boston. *Environment & Behavior, 18*, 604-622.
- Craik, K. H., & Zube, E. H. (1976). *Perceiving environmental quality, research and applications*. New York: Plenum.
- Devlin, K., & Nasar, J. L. (1989). The beauty and the beast: Some preliminary comparisons of "high" versus "popular" residential architecture and public versus architect judgments of same. *Journal of Environmental Psychology, 9*, 333-344.
- Evans-Cowley, J., & Nasar, J. L. (2004). Amarillo yard art: Resident responses to yard signs and their regulation. *Journal of the American Planning Association, 70*(1), 67-80.
- Glenmary Research Center. (2002). *Religious congregations and membership: 2000*. Retrieved June 14, 2004, from [http://www.glenmary.org/grc/RCMS\\_2000/release.htm](http://www.glenmary.org/grc/RCMS_2000/release.htm)
- Gosling, D. (2003). *The evolution of American urban design*. West Sussex, UK: John Wiley.
- Groat, L. (1982). Meaning in post-modern architecture: An examination using the multiple sorting task. *Journal of Environmental Psychology, 2*, 3-22.
- Hull, R. B., & Revell, G. R. B. (1989). Cross-cultural comparison of landscape scenic beauty evaluations: A case study of Bali. *Journal of Environmental Psychology, 9*, 177-191.
- Iowa Secretary of State. (2002). *November 7, 2000—General election Iowa official results*. Retrieved June 6, 2004, from <http://www.sos.state.ia.us/pdfs/2000%20G%20PresVp.pdf>
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. New York: Cambridge University Press.
- Lansing, J. B., Marans, R. W., & Zehner, R. B. (1970). *Planned residential environments*. Ann Arbor, MI: University of Michigan.
- Liu, Q. A., Ryan, V., Aurbach, H., & Besser, T. (1998). The influence of local church participation on rural community attachment. *Rural Sociology, 100*, 453-476.
- Lund, H. (2003). Testing the claims of New Urbanism: Local access, pedestrian travel, and neighborhood behaviors. *Journal of the American Planning Association, 69*, 414-429.
- Lynch, K. (1960). *Image of the city*. Cambridge, MA: MIT Press.
- Marijuan, J. C. (1978). *Towns in expansion: Historicist approach or perceptual approach?* Unpublished Masters thesis, Oxford Polytechnic, UK.

- Nasar, J. L. (1989). Symbolic meanings of house styles. *Environment & Behavior*, 21, 235-257.
- Nasar, J. L. (1998). *The evaluative image of the city*. Thousand Oaks, CA: Sage.
- Perkins, D. D., Meeks, J. W., & Taylor, R. B. (1992). The physical environment of street blocks and resident perceptions of crime and disorder: Implications for theory and measurement. *Journal of Environmental Psychology*, 12, 21-34.
- Putnam, R. D. (1993). *Making democracy work*. Princeton, NJ: Princeton University Press.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Rahn, W. M., Brehm, J., & Carlson, N. (1999). National elections as institutions for generating social capital. In T. Skocpal & M. Fiorina (Eds.), *Civic engagement and American democracy* (pp. 111-160). Washington, DC: Brookings Institute.
- Rapoport, A. (1977). *Human aspects of urban form*. Oxford: Pergamon.
- Rapoport, A. (1990). *The meaning of the built environment: A non-verbal communication approach*. Tucson, AZ: University of Arizona Press.
- Rapoport, A. (1993). *Cross-cultural studies and urban form*. College Park, MD: University of Maryland.
- Rice, T. W., & Feldman, J. L. (1997). Civic culture and democracy from Europe to America. *The Journal of Politics*, 59, 1143-1172.
- Rice, T. W., & Miller, D. N. (1999). The correlates of small-town upkeep. *Environment & Behavior*, 31, 821-837.
- Russell, J. A., & Snodgrass, J. (1989). Emotion and environment. In D. Stokols & I. Altman (Eds.), *Handbook of environmental psychology* (Vol. 1, pp. 245-280). New York: Wiley.
- Sauer, L. (1972). The architect and user needs. In W. M. Smith (Ed.), *Behavior, design and policy aspects of human habitats* (pp. 147-170). Green Bay, WI: University of Wisconsin Press.
- Skogan, W. G., & Maxfield, M. (1981). *Coping with crime: Individual and neighborhood reactions*. Beverly Hills, CA: Sage.
- Steinitz, C. (1968). Meaning and the congruence of urban form and activity. *Journal of the American Institute of Planners*, 34, 233-247.
- Ulrich, R. S. (1993). Biophilia and the conservation ethic. In S. R. Kellert & E. O. Wilson (Eds.), *The biophilia hypothesis* (pp. 73-137). Washington, DC: Island.
- U.S. Census Bureau. (2002). *2000 census of population and housing: Iowa*. Washington, DC: Author.
- Verba, S., Lehman Schlozman, K., & Brady, H. E. (1995). *Voice and equality: Civic voluntarism in American politics*. Cambridge, MA: Cambridge University Press.
- Warr, M. (1990). Dangerous situations: Social context and fear of victimization. *Social Forces*, 68, 891-907.

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