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# Beautiful Places: The Role of Perceived Aesthetic Beauty in Community Satisfaction

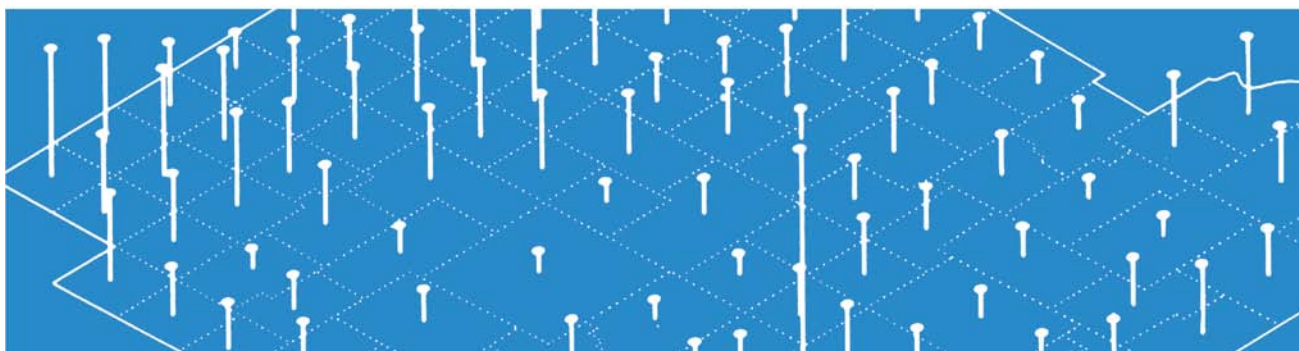
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## **ABSTRACT**

Economists have argued that individuals choose locations that maximize their economic position and broad utility. Sociologists have found that social networks and social interactions shape our satisfaction with our communities. Research, across various social science fields, finds that beauty has a significant effect on various economic and social outcomes. Our research uses a large survey sample of individuals across US locations to examine the effects of beauty and aesthetics on community satisfaction. We test for these effects in light of other community-level factors such as economic security and employment opportunities; the supply of public goods; the ability for social exchange, that is to meet people and make friends; artistic and cultural opportunities, and outdoor recreation; as well as individual demographic characteristics such as gender, age, presence of children, length of residence, income and education levels, and housing values. The findings confirm that perceived beauty or aesthetic character of a location has a positive and significant effect on perceived community satisfaction. It is one of the most significant factors alongside economic security, good schools, and the perceived capacity for social interaction. We also find community-level factors to be significantly more important than individual demographic characteristics in explaining community satisfaction.

Keywords: Community satisfaction, Beauty, Aesthetics, Fit

JEL: R20, Z1

## INTRODUCTION

What are the factors that shape our satisfaction with our communities? This is a question which has interested social scientists across disciplines for some time. Economists have long argued that individuals choose locations which satisfy their overall utility. Economics research has examined the factors that attract individual's to certain kinds of regions – such as wage levels, housing values (Rosen 1979; Roback 1982) or consumer amenities (Glaeser et al., 2001; Lloyd and Clark, 2001; Florida, 2002; Florida et al., 2009; Carlini and Saiz, 2008). Economists have also examined the effects of individual economic and demographic characteristics such as education, age, gender and income on migration patterns and location choices (e.g. Mincer, 1978; Graves, 1979; Graves and Linneman, 1979; Rogers, 1988; Becker, 1993; Pandit, 1997; Edlund, 2005).

Social scientists have probed the effects of individual economic and demographic factors such as age, education, income, and family structure, on community satisfaction (Keller, 1968; Hunter, 1975; Schulman, 1975; Riger and Lavrakas, 1981; Cuba and Hummon, 1991). Others have found evidence of a positive relation between home ownership and the length of residence on the one hand, and community attachment on the other (Gerson et al., 1977; Fischer, 1977; Sampson, 1988). Other studies have examined the effect of community characteristics such as local leadership, housing quality, the sense of being at home, the level of diversity, culture, sports, shopping resources and public goods supply on community satisfaction (Fried, 1984; Adams, 1992; Cuba and Hummon, 1993). Yet other research has also focused attention on factors associated with community *dissatisfaction* (e.g. Marans and Rogers, 1975; Lee and Guest, 1983; Loo, 1986; Spain, 1988; Parks et al., 2002), showing that financial hardship, crime and other forms of neighborhood dysfunction, a lack of social integration and depressed expectations all have a negative relation to levels of overall community attachment.

Another stream of research has explored the role of interpersonal relationships and social interactions in community satisfaction. Putman (2000) argues that social capital is an important dimension and determinant of community satisfaction. Nisbet (1969), Sarason (1974), Hunter (1975), Fischer (1977) and Grillo et al. (2008) find that social interaction is a key dimension of community satisfaction.

Maslow (1943) long ago theorized that human beings evolve along a well-defined hierarchy of needs, moving up a so-called ladder from basic survival, including physiological and safety needs, to advanced desires for love and belonging, esteem and self-actualization. Careful studies have documented the effects of beauty on economic and social outcomes -- such as individual success (Belot et al., 2007), political careers (King and Leigh, 2007), artistic appreciation (Sagoff, 1981), and on fundamental economic models (Mossetto, 1993; Cassey and Lloyd 2005). Several more focused studies have probed the effects of community aesthetics on community satisfaction and economic outcomes. Widgery (1982) finds that community satisfaction is affected by the perceived beauty of the place. White (1985) shows how aesthetic qualities of the community matter to the same extent as social support or social belonging. Based on work by Lansing and Marans (1969), White stresses that beauty is a subjective factor, that needs to be measured based on subjective evaluations. Green (1999) explored factors that were related with community perception of the town character and found that natural landscape features, including beauty, were positively associated with a positive character image. Careful empirical studies by Glaeser et al. (2001) and Carlino and Saiz (2008) find that urban amenities affect economic growth and development of cities and regions.

Based on this existing research, we argue that beauty and aesthetics play a significant role in perceived community satisfaction. That said, we recognize explicitly that beauty and aesthetics are not the only factors that drive community satisfaction, but rather that they likely work in tandem with other key factors, such as overall economic conditions and opportunities for social interaction, documented in the literature. But we expect that in a relatively affluent, post-industrial context where basic physical and economic survival is a less explicit concern for most individuals, “higher-order” factors such as beauty and aesthetics will be a significant factor in determining location preferences. To test this hypothesis, we utilize data from a large-scale survey of community satisfaction conducted with the Gallup Organization. The survey collected detailed data from some 28,000 respondents on individual-level demographic characteristics such as income, housing values, job opportunities, education levels and to community-level characteristics such as aesthetics and beauty, availability of jobs and economic trends, the supply of public goods, cultural opportunities, outdoor recreation, and the ability to meet people and make friends.

## **THEORIES AND CONCEPTS**

Social scientists have long tried to identify the factors that shape community satisfaction. In his now classic article, Tiebout (1956) argued that individuals express their level of community satisfaction by “voting with their feet.” As such, a market-like process is created by migration patterns. Instead of attempting to change the prevailing institutional arrangement in a region, individuals choose to locate in communities that offer the most attractive bundle of public services and taxes. In the same way that an individual satisfies his or her demand for private goods by purchasing them through the market, the demand for public services will be satisfied by moving to a region with the appropriate selection of taxes and services. In other words, migration becomes a solution for people to find the community that best fits their preferences.

Economists therefore assume individuals to be efficiently distributed across regions and, as a result, primarily located in the communities that best satisfy their utility. However, research on mover/stayer groups has revealed a different pattern of migration based on individual characteristics such as education, age, gender and income, and how these traits differently affect expected utility gains from a change in location (e.g. Mincer, 1978; Graves, 1979; Graves and Linneman, 1979; Rogers, 1988; Becker, 1993; Pandit, 1997; Edlund, 2005). Individuals with lower anticipated gains from migration are more likely to remain in regions to which they aren't attached. Much of the research has also focused on the effects of differential wage levels and housing values (Sjaastad, 1962; Thirlwall, 1966; Greenwood, 1973). Rosen (1979) and Roback (1982) suggest that those aspects of migration not explained by differences in wages and land rent can be explained by differences in regional amenities, which compensate for lower income returns and/or higher costs of housing.

Ullman (1954) demonstrated the significant influence of desirable living conditions in terms of climate and landscape in explaining regional differences in economic growth. Jacobs (1961, 1969) and Gans (1962) focused on the advantages created by diversity and heterogeneity in cities, factors that in the end shape new ideas which spur new forms of development. Gottlieb (1994, 1995) examined how amenities such as environment, schools, as well as lower levels of congestion and crime attract individuals and, by extension, firms searching for highly-skilled labor. In general, economists assume an efficient allocation of individuals through migration based on the regional wage levels, housing values and presence

of amenities; behavioral psychologists to a larger extent focus on the intermediary role of satisfaction versus dissatisfaction in a present location. In both contexts, regional qualities play a crucial role in explaining the overall level of community satisfaction. However, the economics argument states that an efficient allocation of individuals is expected to take place and, in turn, most people can be expected to be satisfied with their current place of location. From a behavioral psychology perspective, the ability to seek information about other places is limited and, therefore, we may expect to observe a less efficient allocation of individuals across regions according to their preferences, and a larger variation of satisfied versus not satisfied individuals within regions.

Other social scientists have probed the effects of highly subjective determinants of community satisfaction. Fried (1963) coined “spatial identity” and Proshansky et al. (1983) used “place identity” to describe how place itself – the home, work and school environment – helps define an individual’s sense of being in a particular location. Other research has focused on the attitude of “being at home” in a community; in other words, the feeling of a good fit or the ability to be comfortable, familiar, and express an authentic sense of self (e.g. Relph, 1976; Rowles, 1983; Seamon, 1979).

There is considerable research documenting the importance of social interaction for community satisfaction. Nisbet (1969) and Sarason (1974) show how the opportunity for social interaction within neighborhoods relates to the mental health of individuals. Cuba and Hummon (1993) show how social participation in the local community is crucial for community identity. Hunter (1975) and Fischer (1977) suggest that the sense of neighborhood belonging or community attachment is separated from local social involvement. Fischer (1977) introduced different types of attachments, related to social ties in relation to local organization and people. Another dimension is more place specific feelings which tend to develop over time (also in Sampson, 1988). Fischer also shows how individuals without children are less attached to their neighborhoods. The role of civic engagement and residential satisfaction has been highlighted by Brehm and Rahn (1997) and Grillo et al. (2008). While the first set of authors states that civic engagement is a product of life satisfaction, the latter suggests that civic engagement is closely related to community qualities, including both basic offerings such as quality public schools, transportation system and quality healthcare; and lifestyle amenities such as cultural opportunities, a vibrant nightlife and outdoor activity opportunities.

Early work on urbanization and community by Wirth (1938) argued that increased community scale, density and heterogeneity decreased personal attachment to a location. However, more recent studies have refuted the existence of an explicit relationship between urban size and level of attachment (Kasarda and Janowitz, 1974; Sampson, 1988; Gerson et al., 1977).

Fried (1984) integrates both personal and community characteristics in order to analyze their effect on well-being. He also categorizes the factors that shape the overall community satisfaction or dissatisfaction of individuals. He makes distinctions between local residential satisfaction, local convenience satisfaction, local interpersonal satisfaction, and local political satisfaction. Residential satisfaction relates to the immediate local environment, including the neighborhood and dwelling quality, as well as housing quality. Convenience satisfaction concerns local shopping, parks and recreation, as well as culture, sports and age-specific services. (This also includes general public services such as schools, work locations and transportation systems.) Interpersonal satisfaction takes personal interactions and the geographical distance between people into account. This component analyzes relations between friends, within neighborhoods and more peripheral relations. Political satisfaction concerns the local leadership, its responsiveness and delivery of services, such as police, transportation and educational systems. Fried also notes that these four factors seem to be largely independent of general personality traits. He also finds that community satisfaction is the second most important variable to explain life satisfaction, following only marital satisfaction. The results presented by Fried are confirmed in Adams (1992). He concludes that neighborhood satisfaction significantly affect overall quality of life, even when marriage, education, race and age variables are included.

Parkes et al. (2002) identify the factors that shape neighborhood *dissatisfaction* of individuals. Building on earlier work by Marans and Rodgers (1975), Lee and Guest (1983), Loo (1986) and Spain (1988), Parkes et al. identify five different factors that result in dissatisfaction within a community: financial hardship, poor neighborhood resources and reputation, exposure to neighborhood problems, social marginalization, and depressed expectations. The authors also identify group characteristics which tend to be associated with neighborhood dissatisfaction, including lower income, renting as opposed to owning, shorter length of residence, ethnic minority status, being of a younger age, and unemployment.

A vast literature shows how social conditions and life stages affect community attachment, including factors such as home ownership, race, class and age (Keller, 1968; Hunter, 1975; Schulman, 1975; Cuba and Hummon, 1991). Building on this work, Riger and Lavrakas (1981) discuss how life circumstances and life stages play a critical role in determining individuals' community attachment. According to their results, age and the presence of children tend to be two critical determinants – older people and people with children in the household tend to be more engaged and attached to their communities. Krupat (1985) shows how gender has little influence on attachment, except at a neighborhood level.

Much sociology and behavioral psychology research on community satisfaction has been carried out in the context of migration studies. Behavioral psychologists have stressed the importance of the current fit in one's place to increase the likelihood of staying. Wolpert (1965) talks about place utility and refers to "the net composite of utilities which are derived from the individual's integration at some position in space" (p. 162). He concludes that since individuals have a limited ability to gather complete information about alternatives, there will always be a spatial information bias towards the current location and geographically approximate locations. Sociologists have shown the positive effect of community satisfaction on the likelihood to stay and the influence of social amenity and neighborhood structure (e.g. Speare, 1974; Michelson, 1977; Stapleton, 1980; Galster and Hesser, 1981; Barcus, 2004).

There is a growing literature on the role of beauty and aesthetics on social and economic outcomes. Maslow (1943) theorized that human beings evolve along a well-defined hierarchy of needs, moving up a so-called ladder from basic survival needs like physiological and safety needs to love and belonging, esteem and self-actualization. Postrel (2003) suggests that one need not be bound to a Maslow ladder-like approach, arguing that beauty and aesthetics are something to which human beings have long been responsive, regardless of development, income level or cultural context.

Several studies have documented the economic value of beauty in a variety of different contexts, such as individual performance on game shows (Belot et al., 2007), politics (King and Leigh, 2007), art (Sagoff, 1981); as well as in traditional economic models (Mossetto, 1993; Cassey and Lloyd, 2005).



There are a variety of studies that probe the effects of aesthetics in one form or another on community satisfaction or community economic development. Andrews and Withey (1974), Zehner and Chapin (1974) as well as Newman and Duncan (1979) show how a well-maintained community has a positive impact on community satisfaction. Widgery (1982) finds that community satisfaction is affected by the perceived beauty of the place. White (1985) shows how aesthetic qualities of the community matter to the same extent as social support or social belonging. Based on work by Lansing and Marans (1969), White stresses that beauty is a subjective factor, that needs to be measured based on subjective evaluations. Green (1999) explored factors that were related with community perception of the town character and found that natural landscape features, including beauty, were positively associated with a positive character image. In more recent writing, Glaeser et al. (2001), as well as Carlino and Saiz (2008), find that the presence of amenities has an effect on the economic growth and development of urban regions. Lloyd and Clark (2001) describe the city as an “entertainment machine” that offers lifestyle-related amenities in the form of entertainment, nightlife and culture. Florida (2002) shows the role of openness, inclusiveness and lifestyle related amenities in attracting creative individuals.

Building from this line of research we argue that beauty and aesthetic factors play a considerable role in community satisfaction, one that has been largely neglected across social science disciplines concerned with community satisfaction. To examine this, we use data from a large scale survey of community satisfaction conducted with the Gallup Organization. The survey included questions specifically relating to a respondent’s perception of beauty and aesthetics in his or her community. It also collected detailed data on individual characteristics such as age, gender, education levels and marital status; and community-level perceptions relating to job and economic security, the supply of public goods, and expectations about the future.

## **METHODOLOGY AND CONCEPTS**

We employ data from a large survey which asked people direct questions about their level of satisfaction with their communities; about their experiences and expectations in those communities, as well as standard demographic and economic characteristics, including age,

gender, marital status, educational levels, number of children in the household as well as their income, home ownership, length of the current residency, and city size.

The survey covered roughly 28,000 people across some 8,000 communities nationwide. This diverse sample reflects a full range of incomes, occupations, ages, races and ethnicities, household types, sexual orientations and education levels. The response rate was approximately 70.3 percent. However, not all questions were answered by the respondents. Those questions relating to community factors and the probability of staying or moving had a response rate of 50.7 percent. The inclusion of control variables concerning education level, age, gender, and marital status reduces the sample to 2,028 observations. Because of this reduction the regression analysis is carried out in two versions; one with control variables (with the reduced sample) and one without the control variables included (with the larger sample), in order to analyze possible differences.

## ***VARIABLES***

**Dependent variable:** The dependent variable measures *community satisfaction*. Specifically, it is based on the survey question: “Taking everything into account, how satisfied are you with the city or area where you live?” Responses were ranked on a 1-5 Likert scale, where 1=not at all satisfied, and 5=extremely satisfied.

**Independent Variables:** We employ two classes of independent variables.

### (1) Dimensions of Community Satisfaction

The survey included a series of questions designed to gauge the various dimensions of community satisfaction, with regard to economic security, basic services, openness and aesthetics, as follows. All questions were phrased as “How would you rate the city or area where you live on (...)?” and response categories were based on a 1-5 Likert scale, where 1=very bad and 5=very good. Table 1 provides descriptive statistics for these variables.

**Table 1: Descriptive statistics for Community Characteristics**

	N	Minimum	Maximum	Mean	Std. Deviation
Community Satisfaction	27883	1.00	5.00	3.7919	0.95367
Quality of the public schools	25864	1.00	5.00	3.6134	1.16157
Quality of colleges and universities	24080	1.00	5.00	4.0271	1.06522
Cultural opportunities	26627	1.00	5.00	3.5187	1.28798
Job opportunities in your field	23031	1.00	5.00	3.2566	1.26616
Religious institutions that meet your needs	23798	1.00	5.00	4.2738	.96947
A good place to meet people and make friends	27057	1.00	5.00	3.6985	1.07935
Vibrant nightlife	24270	1.00	5.00	3.1283	1.31075
Affordable housing	26875	1.00	5.00	3.0516	1.22739
Public transportation	25429	1.00	5.00	2.7204	1.30981
Being able to get from place to place with little traffic	27589	1.00	5.00	3.3216	1.27764
Quality health care	27197	1.00	5.00	3.9594	1.07518
Climate	27508	1.00	5.00	3.7368	.98232
Air quality	27330	1.00	5.00	3.8005	1.05466
Beauty or physical setting	27577	1.00	5.00	4.0645	1.01423
Outdoor parks, playgrounds, and trails	27360	1.00	5.00	4.1402	1.00367
Current economic conditions	27482	1.00	5.00	3.3266	.97825
Future economic conditions	27734	1.00	3.00	2.0106	.71772
Valid N (listwise)	14189				

It is interesting to see that among the 27,883 individual respondents, the mean value for overall community satisfaction is 3.79, indicating that most people are quite satisfied with their current location. This finding supports the Tiebout-inspired hypothesis that individuals are efficiently allocated across communities, at least according to their preferences.

## (2) Individual Demographic Variables

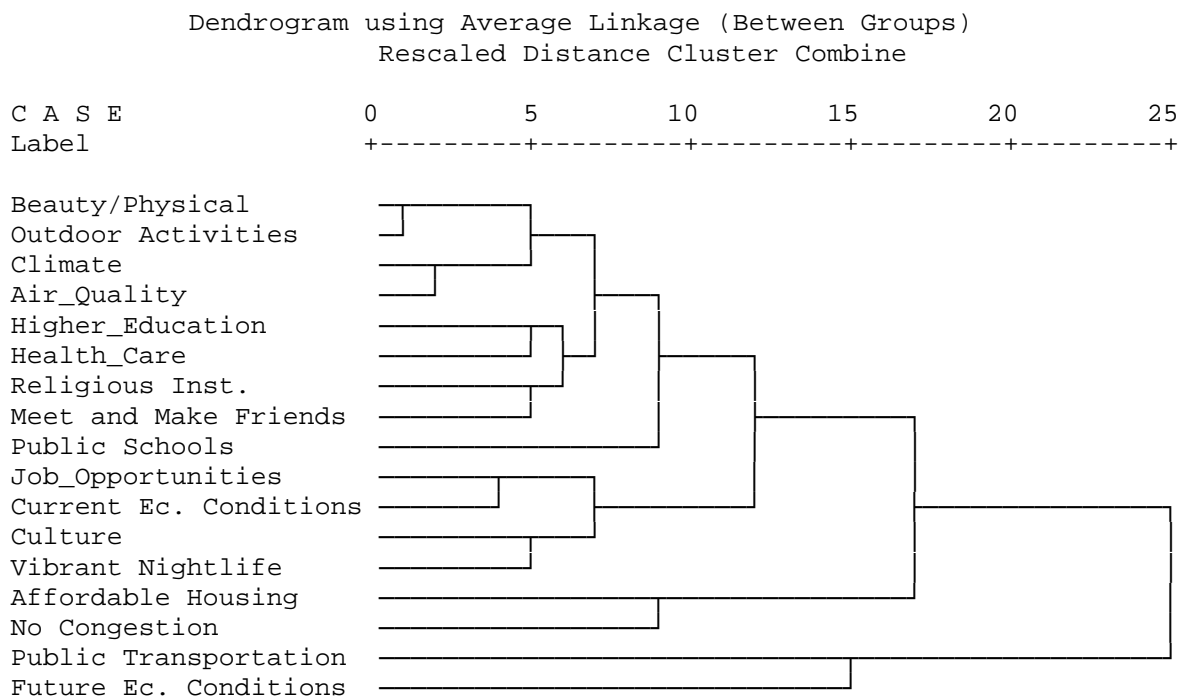
We also examine the role of individual-level economic and demographic characteristics, including, age, gender, marital status, children, education, income level, housing tenure (owner versus renter), length of time in current community, and type of location (urban, suburban or rural).

### **Cluster Analysis:**

In order to find out more about the possible interdependencies of the community characteristics explanatory variables, we run a hierarchical cluster analysis. A cluster analysis

is a method for identifying homogenous subgroups in cases of a population. It seeks to identify a set of subgroups that minimize the within-group variation and at the same time maximize the between-group variation. We use perceived qualities of the community (ranked from 1 to 5) to generate the clusters. We show the variable clusters with a dendrogram (Figure 1) which illustrate the cohesiveness of the clusters formed and provides information about the appropriate number of clusters.

**Figure 1: Clusters of Perceived Qualities in Communities**



Among the most important of these findings, we see that regions perceived as beautiful and with an attractive physical setting also typically score highly on the outdoor parks, playgrounds and trails. Another cluster comprises places with perceived good climate as well as good air quality. In fact, the most compelling finding is that while many of the variable clusters tell different stories – that is they do not appear to contain the same information, since the clustering is generally made within a similar distance -- the main exception is the close connection between beauty of physical setting and outdoor parks, playgrounds and trails.

## **Regression Analysis**

We use regression analysis to test for the effects of beauty and aesthetics on community satisfaction in light of both individual and community level characteristics as outlined above. We use an ordinary least square regression, based on the ordinary assumptions about an ordinal, interval scale, as well as a linear relation and no autocorrelation. In order to control for variables containing the same information, we conduct collinearity tests (VIF) when the regressions are run.

## **FINDINGS**

We now report the findings of a multivariate regression analysis to determine the community characteristics most strongly related to overall community satisfaction, after controlling for personal characteristics (Table 2). The variables we use can be classified according to four major groups: economic security, basic services, openness and social capital, and aesthetics. The inclusion of control variables reduces the sample significantly because of the lower number of responses to questions relating to those variables. Therefore, we run the regression a second time excluding the control variables. However, our general discussion below will be based on the results from the regression with control variables included.

**Table 2: Regression Results**

	Unstand. Coefficients		Stand. Coefficient		T	Sig.
	B	Std Error	B			
(Constant)	-.025	.190			-.134	.893
Current economic conditions	.216	.021	.227		10.424	.000
Beauty or physical setting	.159	.020	.172		7.877	.000
Quality of the public schools	.130	.015	.159		8.463	.000
A good place to meet people and make friends	.132	.019	.153		6.833	.000
Being able to get from place to place with little traffic	.075	.014	.103		5.254	.000
Outdoor parks, playgrounds, and trails	.066	.020	.070		3.360	.001
Quality health care	.060	.017	.069		3.495	.000
Future economic conditions	.084	.023	.065		3.587	.000
Religious institutions that meet your needs	.060	.018	.062		3.280	.001
Cultural opportunities	.041	.018	.056		2.322	.020
Quality of colleges and universities	-.048	.018	-.055		-2.713	.007
Vibrant nightlife	-.040	.016	-.055		-2.484	.013
Affordable housing	.041	.014	.053		2.934	.003
Public transportation	-.032	.014	-.044		-2.338	.019
Climate	.033	.018	.034		1.799	.072
Air quality	.018	.018	.020		.987	.324
Job opportunities in your field	.011	.016	.015		.709	.478
Human Capital	.085	.032	.045		2.670	.008
Income	.025	.011	.045		2.391	.017
Own or rent	-.117	.056	-.037		-2.085	.037
Gender	.064	.030	.034		2.096	.036
Marital Status	.010	.011	.017		.977	.329
Urbanicity	.014	.025	.010		.569	.569
Age	.001	.001	.009		.452	.652
How long have you lived at this residence	-.004	.020	-.004		-.211	.833
Children, under age 3	-.006	.057	-.002		-.106	.915
Children, age 3 to 7	-.004	.041	-.002		-.101	.920
N	2028					
R <sup>2</sup>	0.511					
R <sup>2</sup> Adj	0.504					

The overall regression generates a R<sup>2</sup> value of approximately 0.5. This value is probably somewhat underestimated because of the Likert scale, which slightly decreases the linearity of the observations. Given the large number of observations, it is not surprising to see that the majority of variables appear significant. From the standardized beta values we can detect a relatively stronger explanatory value from the community related variables than from individual characteristics. We also focus on the standardized coefficients in the analysis, since certain scaling variations exist among the variables. Since the inclusion of the control variables reduces our sample, we also run the regression without control variables (Table 3). This increased the sample from 2,028 to 14,188 observations.

**Table 3: Regression results without control variables**

How would you rate the city or area where you live on ...	Unstand. Coefficients		Stand. Coefficient	t	Sig.
	B	Std Error	Stand. B		
(Constant)	.169	.036		4.635	.000
Current economic conditions	.200	.008	.208	25.094	.000
A good place to meet people and make friends	.160	.008	.182	21.228	.000
Quality of the public schools	.132	.006	.161	22.798	.000
Beauty or physical setting	.149	.008	.159	19.084	.000
Being able to get from place to place with little traffic	.071	.006	.094	12.727	.000
Outdoor parks, playgrounds, and trails	.059	.008	.062	7.756	.000
Cultural opportunities	.039	.007	.053	5.662	.000
Future economic conditions	.068	.009	.052	7.653	.000
Public transportation	-.036	.005	-.049	-7.065	.000
Climate	.048	.007	.049	6.781	.000
Air quality	.044	.007	.048	6.079	.000
Job opportunities in your field	.033	.006	.043	5.222	.000
Quality health care	.035	.007	.039	5.128	.000
Vibrant nightlife	-.027	.006	-.037	-4.286	.000
Religious institutions that meet your needs	.028	.007	.029	3.992	.000
Affordable housing	.020	.005	.025	3.586	.000
Quality of colleges and universities	-.021	.007	-.024	-3.011	.003
N	14188				
R <sup>2</sup>	0.496				
R <sup>2</sup> Adj	0.495				

The adjusted R<sup>2</sup> value is only marginally affected by this exclusion, changing from 0.504 to 0.495. This result is expected given that those factors taken together only generated an adjusted R<sup>2</sup> of 0.039 in explaining community satisfaction. While we observe a certain upper bias in the estimation of the unstandardized beta coefficients, their relative strength, as measured by the standardized beta values, is unaffected. Current economic conditions, quality of public schools, the community being a good place to meet people and make friends, and the physical setting continue to be the most important factors related to the overall community satisfaction. In this regression, the job opportunity variable is relatively stronger. It could be that this factor captures, to a larger extent, information that was included in the control variables, such as income or educational level, but a low VIF value leads us to believe that this is not the case. Rather, we suggest that reducing the sample size when the control variables are included affects the estimation of the importance of the job opportunity factor. However, the relative importance of this factor rates far behind factors such as meeting friends or beauty and physical settings. Availability of public transportation, access to vibrant night life and quality of colleges and universities are still negative and significant.

## **Community characteristics**

*Beauty and aesthetics:* The standardized beta coefficient for this variable was one of the strongest (0.172) in the analysis. The cluster analysis illustrated how closely this factor was related to outdoor parks, but the VIF value is at an acceptable level to indicate that they do not contain the same information.

*Current economic conditions:* The coefficient for this variable was slightly stronger than for beauty and aesthetics, with a standardized beta value of 0.227. This is not surprising given that overall economic conditions tend effect many other factors related to community satisfaction. But the low VIF values eliminate the possibility of each containing the same information. Also, recall that the findings from cluster analysis indicate that current economic conditions are closely associated with good job opportunities.

*Ability to meet people and make friends:* It also performed well with a standardized beta coefficient of 0.153. This supports the findings of previous studies which have found that social interaction to matter significantly for community satisfaction.

*Schools:* This variable which reflects perceived quality of schools is also positive and significant with a magnitude similar to that for the ability to meet people and make friends (0.159). This is line with economic and sociological literature as well as common sense -- communities with better schools have higher levels of satisfaction. A strong public school system indicates that a community is able to provide a positive environment for children and, as a result, is among the most influential factors influencing the location preferences of parents and families.

Several other variables were positive and significant though with smaller beta coefficient values. The variable for being able to get from place to place with little traffic was positive and significant with a standardized beta value of 0.103. The variable for quality health care was positive and significant, with a standardized beta coefficient of 0.069. The variable for future economic conditions had a standardized beta vale of 0.065. The cluster analysis also shows that this factor does not tend to cluster with any other community related variable, but rather stands on its own. The coefficient for religious institutions was positive and significant but with a standardized beta value of 0.062.



The coefficient for cultural opportunities was also positive and significant, with a standardized beta value of 0.056. The role of cultural diversity for regional development has been highlighted in a vast amount of literature (e.g. Knox and Taylor, 1995; Scott, 1997), and this result is weaker than might be expected.

The coefficient for affordable housing was positive and significant with a standardized beta coefficient of 0.053, approximately at the same level as cultural opportunities. In the cluster analysis, this variable tends to be the most closely related to regions without congestion, but this factor is relatively weak. This result is interesting since much of the literature discussed above finds it to be an important factor in determining community satisfaction. While our results show it to be positive and significant, it appears significantly less influential than other factors. The coefficient for climate was significant at the 0.1 level. The cluster analysis suggests a close relationship between climate and air quality. The latter is not a significant factor in our analysis. The findings stand in contrast to both previous studies and the conventional wisdom which suggest that climate plays a substantial role in community satisfaction. For the overall dataset, public transportation was negative and significant with a coefficient of -0.044.

Several other variables were negative and significant, such as colleges and universities with a standardized beta value of -0.055; and nightlife with the same standardized beta value of -0.055. The average age of the individuals taking the survey was 55 which might impact these results. In order to control for this, we split the data file according to age and re-ran the regression. For younger people between 20 to 30 years of age, the standardized beta coefficient for nightlife was 0.134 and still insignificant. For college and universities the coefficient was 0.106, and also insignificant.

### **Individual characteristics**

We now move on to the findings for individual characteristics. Generally speaking, these individual characteristics explain far less variation in the satisfaction levels than the community-related factors in our regression. (We also ran a regression with only individual characteristics included; however this model explained very little variation in overall community satisfaction, with an adjusted  $R^2$  value of only 0.039.)

*Gender:* Gender is significant at the 0.05 level and with a standardized beta value of 0.034. It appears that women are more satisfied with their communities than men. Our results may suggest that women pay more attention to selecting communities that satisfy them, or perhaps that because women tend to spend more time at home they may have a greater incentive to invest in neighborhood social networks which improve their satisfaction.

*Income and education:* Both variables are positive and significant with the same beta coefficient of 0.045. Individuals with a BA degree or above, as well as with higher incomes, generally indicate greater satisfaction with their communities. The low VIF value disproves that these variables contain the same information. This likely reflects the simple fact that individuals with higher levels of education and incomes have greater choice in selecting their locations.

*Housing types:* Individuals who rent their residence are generally less satisfied with their communities than homeowners. This factor is significant at the 0.05 level.

The following factors are insignificant: job opportunities, air quality, age, marital status, children, length of stay, and rural versus urban location.

## **CONCLUSIONS**

Our major hypothesis is that the beauty and aesthetic characteristics of places will have a significant effect on perceived community satisfaction. Recall that our hypothesis explicitly stated that we do not think that beauty and aesthetics are the only factor that matter to community satisfaction, but rather that they are likely to operate alongside other key factors, some of which - for example, economic conditions and social interactions - have been highlighted in the literature.

Our main findings confirm the hypothesis: beauty and aesthetics are among the most important factors in perceived community satisfaction. In fact, only one of the coefficients, that for current economic conditions, was stronger. Our findings for beauty and aesthetics lend support to those by Glaeser et al. (2001), and Carlino and Saiz (2008), among others, who highlight the importance of amenities in urban and regional development.

We also found our measure of the perceived quality of schools to be positively and significantly associated with community satisfaction. This makes a good deal of sense actually, particularly in light of a simple Maslow construct that perceptions of beauty and aesthetics matter alongside a secure economic environment which can deliver on basic economic needs and high quality schooling to prepare children for the future.

In addition, we found that social interaction – specifically our measure of the perceived ability to meet people and make friends – to be closely associated with community satisfaction. This finding is in line with a wide range of sociological research which has found that social networks and opportunities for social interaction have a significant effect on community satisfaction (Landale and Guest, 1985; Putnam, 2000).

Moreover, our findings suggest a much smaller role for individual level or personal characteristics in community satisfaction. The effects of factors such as age, gender, income, education, length of residence, and home ownership on community satisfaction were relatively small. In addition, factors such as age and length of stay in a community showed no effect. These findings contrast to those of previous studies by Gerson et al., (1977); Fischer, (1977) and Sampson (1988) which found positive relations between length of stay and community attachment, but they offer support for Parkes et al. (2002) who found that young individuals more often tend to be dissatisfied with their communities. We found no relationship between community satisfaction and marital status, the presence of children, or rural versus urban location. This contradicts earlier research has found that life stage factors and presence of children have significant influence on community satisfaction (Keller, 1968; Hunter, 1975; Schulman, 1975; Riger and Lavrakas, 1981; Cuba and Hummon, 1993).

Generally speaking, our findings suggest a holistic framework or interpretation for community satisfaction. A community that satisfies its residents, according to our findings, appears to be one that provides a solid economic foundation, provides abundant opportunities for social interaction, offers good schools, and is also perceived as beautiful and aesthetically pleasing. While a number of other community characteristics were found to be positive and significant, they were not nearly as strongly related to community satisfaction as these key factors.

We want to reiterate that the way we interpret our findings is not to say that beauty and aesthetic factors are the only or predominant factors that shape perceived community satisfaction, but that they operate alongside a cluster of influential factors including economic conditions, good schools, and opportunities for social interaction. The effect of beauty and aesthetics indicates that community satisfaction is something more than a Maslow process, where individuals and communities move up a simple ladder of higher order needs, and rather that beauty and aesthetics operate more like what Postrel (2003) described as a holistic set of factors that, when taken together, result in higher levels of perceived community satisfaction. Our findings suggest that beauty and aesthetics are an under-appreciated factor in community satisfaction and one that should be the subject of further research.

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**APPENDIX 1: Crosstabulations for Individual Characteristics**

		Community Satisfaction (CS)																	
		Not at all satisfied			2			3			4			Extremely Satisfied			Total		
		Count	% within CS	% within Age	Count	% within CS	% within Age	Count	% within CS	% within Age	Count	% within CS	% within Age	Count	% within CS	% within Age	Count	% within CS	% within Age
Age Dummy	1,00	45	6,3%	3,4%	126	6,4%	9,6%	372	5,6%	28,2%	603	4,8%	45,7%	173	2,9%	13,1%	1319	4,7%	100,0%
	2,00	46	6,4%	1,5%	221	11,2%	7,4%	743	11,3%	24,8%	1452	11,6%	48,5%	531	8,8%	17,7%	2993	10,7%	100,0%
	3,00	141	19,7%	2,8%	396	20,1%	7,8%	1256	19,1%	24,6%	2319	18,5%	45,4%	991	16,4%	19,4%	5103	18,3%	100,0%
	4,00	218	30,5%	2,9%	595	30,2%	7,9%	1834	27,8%	24,5%	3412	27,1%	45,5%	1434	23,8%	19,1%	7493	26,9%	100,0%
	5,00	159	22,3%	2,7%	367	18,6%	6,2%	1338	20,3%	22,5%	2600	20,7%	43,7%	1491	24,7%	25,0%	5955	21,4%	100,0%
	6,00	105	14,7%	2,1%	266	13,5%	5,3%	1049	15,9%	20,9%	2182	17,4%	43,5%	1416	23,5%	28,2%	5018	18,0%	100,0%
	Total	714	100,0%	2,6%	1971	100,0%	7,1%	6592	100,0%	23,6%	12568	100,0%	45,1%	6036	100,0%	21,6%	27881	100,0%	100,0%
	Cont.																		
		Count	% within CS	% within Gender	Count	% within CS	% within Gender	Count	% within CS	% within Gender	Count	% within CS	% within Gender	Count	% within CS	% within Gender	Count	% within CS	% within Gender
Gender	Male	293	41,2%	2,4%	842	42,9%	7,0%	2859	43,6%	23,7%	5672	45,4%	47,0%	2409	40,1%	20,0%	12075	43,5%	100,0%
	Female	418	58,8%	2,7%	1119	57,1%	7,1%	3694	56,4%	23,6%	6828	54,6%	43,6%	3593	59,9%	23,0%	15652	56,5%	100,0%
	Total	711	100,0%	2,6%	1961	100,0%	7,1%	6553	100,0%	23,6%	12500	100,0%	45,1%	6002	100,0%	21,6%	27727	100,0%	100,0%
Cont.																			
		Count	% within CS	% within HC	Count	% within CS	% within HC	Count	% within CS	% within HC	Count	% within CS	% within HC	Count	% within CS	% within HC	Count	% within CS	% within HC
Human Capital	No HC	411	62,5%	3,2%	1023	54,4%	8,0%	3295	52,0%	25,8%	5329	43,7%	41,7%	2710	46,9%	21,2%	12768	47,6%	100,0%
	HC	247	37,5%	1,8%	858	45,6%	6,1%	3045	48,0%	21,6%	6864	56,3%	48,8%	3064	53,1%	21,8%	14078	52,4%	100,0%
	Total	658	100,0%	2,5%	1881	100,0%	7,0%	6340	100,0%	23,6%	12193	100,0%	45,4%	5774	100,0%	21,5%	26846	100,0%	100,0%
Cont.																			
		Count	% within CS	% within C < 3	Count	% within CS	% within C < 3	Count	% within CS	% within C < 3	Count	% within CS	% within C < 3	Count	% within CS	% within C < 3	Count	% within CS	% within C < 3
Children under the age of 3 (C < 3)	None	112	90,3%	2,5%	291	94,2%	6,6%	1084	94,2%	24,7%	1943	93,6%	44,2%	967	94,6%	22,0%	4397	93,9%	100,0%
	One	10	8,1%	4,0%	15	4,9%	6,0%	61	5,3%	24,6%	115	5,5%	46,4%	47	4,6%	19,0%	248	5,3%	100,0%
	Two	2	1,6%	5,6%	3	1,0%	8,3%	5	,4%	13,9%	18	,9%	50,0%	8	,8%	22,2%	36	,8%	100,0%
	Three	0	,0%	,0%	0	,0%	,0%	1	,1%	100,0%	0	,0%	,0%	0	,0%	,0%	1	,0%	100,0%
	Total	124	100,0%	2,6%	309	100,0%	6,6%	1151	100,0%	24,6%	2076	100,0%	44,3%	1022	100,0%	21,8%	4682	100,0%	100,0%
Cont.																			
		Count	% within CS	% within C 3-7	Count	% within CS	% within C 3-7	Count	% within CS	% within C 3-7	Count	% within CS	% within C 3-7	Count	% within CS	% within C 3-7	Count	% within CS	% within C 3-7
Children age 3 to 7 (C 3-7)	None	112	90,3%	2,5%	291	94,2%	6,6%	1084	94,2%	24,7%	1943	93,6%	44,2%	967	94,6%	22,0%	4397	93,9%	100,0%
	One	10	8,1%	4,0%	15	4,9%	6,0%	61	5,3%	24,6%	115	5,5%	46,4%	47	4,6%	19,0%	248	5,3%	100,0%
	Two	2	1,6%	5,6%	3	1,0%	8,3%	5	,4%	13,9%	18	,9%	50,0%	8	,8%	22,2%	36	,8%	100,0%
	Three	0	,0%	,0%	0	,0%	,0%	1	,1%	100,0%	0	,0%	,0%	0	,0%	,0%	1	,0%	100,0%
	Total	124	100,0%	2,6%	309	100,0%	6,6%	1151	100,0%	24,6%	2076	100,0%	44,3%	1022	100,0%	21,8%	4682	100,0%	100,0%

Cont.

		Community Satisfaction (CS)																	
		Not at all satisfied			2			3			4			Extremely Satisfied			Total		
		Total	% within CS	% within Income	Total	% within CS	% within Income	Count	% within CS	% within Income	Count	% within CS	% within Income	Count	% within CS	% within Income	Count	% within CS	% within Income
Income	,00	13	11,8%	8,0%	18	6,2%	11,0%	44	4,3%	27,0%	55	3,0%	33,7%	33	3,7%	20,2%	163	3,9%	100,0%
	Under \$25,000	16	14,5%	5,8%	23	8,0%	8,4%	78	7,7%	28,4%	97	5,3%	35,3%	61	6,8%	22,2%	275	6,6%	100,0%
	\$25,000 - \$34,999	17	15,5%	4,5%	23	8,0%	6,1%	99	9,7%	26,3%	156	8,5%	41,4%	82	9,2%	21,8%	377	9,1%	100,0%
	\$35,000 - \$49,999	22	20,0%	3,0%	50	17,3%	6,9%	197	19,3%	27,2%	298	16,3%	41,2%	156	17,5%	21,6%	723	17,5%	100,0%
	\$50,000 - \$74,999	21	19,1%	2,3%	65	22,5%	7,2%	239	23,5%	26,3%	417	22,8%	45,9%	167	18,7%	18,4%	909	22,0%	100,0%
	\$75,000 - \$99,999	9	8,2%	1,2%	62	21,5%	8,0%	166	16,3%	21,4%	364	19,9%	46,8%	176	19,7%	22,7%	777	18,8%	100,0%
	\$100,000 - \$149,999	10	9,1%	1,4%	40	13,8%	5,7%	155	15,2%	22,0%	341	18,6%	48,4%	158	17,7%	22,4%	704	17,0%	100,0%
	\$150,000	2	1,8%	,9%	8	2,8%	3,8%	41	4,0%	19,2%	103	5,6%	48,4%	59	6,6%	27,7%	213	5,1%	100,0%

		or over																	
Total		110	100,0%	2,7%	289	100,0%	7,0%	1019	100,0%	24,6%	1831	100,0%	44,2%	892	100,0%	21,5%	4141	100,0%	100,0%
How long have you lived at this residence (RES)	Less than 1 year	5	4,0%	1,8%	20	6,5%	7,2%	82	7,1%	29,5%	119	5,7%	42,8%	52	5,1%	18,7%	278	5,9%	100,0%
	1 year to less than 2 years	8	6,4%	2,6%	23	7,4%	7,6%	68	5,9%	22,5%	130	6,3%	43,0%	73	7,2%	24,2%	302	6,5%	100,0%
	2 years to less than 5 years	20	16,0%	2,7%	59	19,1%	7,9%	171	14,9%	22,9%	349	16,8%	46,7%	148	14,5%	19,8%	747	16,0%	100,0%
	5 years or more	92	73,6%	2,7%	207	67,0%	6,2%	830	72,1%	24,8%	1477	71,2%	44,1%	747	73,2%	22,3%	3353	71,6%	100,0%
	Total	125	100,0%	2,7%	309	100,0%	6,6%	1151	100,0%	24,6%	2075	100,0%	44,3%	1020	100,0%	21,8%	4680	100,0%	100,0%
Rent or Own (R/O)	Own	92	74,8%	2,2%	246	80,1%	6,0%	981	85,7%	23,7%	1882	91,1%	45,5%	931	91,5%	22,5%	4132	88,7%	100,0%
	Rent	31	25,2%	5,9%	61	19,9%	11,6%	164	14,3%	31,2%	184	8,9%	35,0%	86	8,5%	16,3%	526	11,3%	100,0%
	Total	123	100,0%	2,6%	307	100,0%	6,6%	1145	100,0%	24,6%	2066	100,0%	44,4%	1017	100,0%	21,8%	4658	100,0%	100,0%
Urbanicity (Urban)	Urban	243	35,2%	3,1%	596	31,5%	7,7%	1946	30,9%	25,1%	3410	28,7%	44,0%	1551	27,1%	20,0%	7746	29,2%	100,0%
	Suburban	300	43,4%	2,2%	900	47,6%	6,7%	3131	49,6%	23,4%	6188	52,1%	46,2%	2863	50,1%	21,4%	13382	50,5%	100,0%
	Rural	148	21,4%	2,8%	394	20,8%	7,4%	1230	19,5%	23,0%	2278	19,2%	42,5%	1305	22,8%	24,4%	5355	20,2%	100,0%
	Total	691	100,0%	2,6%	1890	100,0%	7,1%	6307	100,0%	23,8%	11876	100,0%	44,8%	5719	100,0%	21,6%	26483	100,0%	100,0%

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