

# Happiness and quality of city life: The case of Milan, the richest Italian city

ALESSANDRO BALDUCCI \* & DANIELE CHECCHI \*\*

\*Department of Architecture and Planning, Politecnico di Milano, Milan, Italy; \*\*Department of Economics, State University of Milan, Milan, Italy

## 1. Introduction

There is a growing economic literature on the determinants of subjective well-being, which usually includes wealth or income, health status, occupation, marital condition and education among their main determinants (Layard, 1980; Frey & Stutzer, 2002; Di Tella & MacCulloch, 2006).<sup>2</sup> Subjective measures have been validated as good indicators of individual well-being by psychologists, sociologists and, more recently, economists (Diener et al., 1999). Most of the economic analysis has been concerned with what is known as the Easterlin paradox, originally emerged in cross-country comparisons, i.e. the finding of similar levels of happiness in poor and rich countries (Easterlin, 1974, 2001). Similarly, in representative samples of individual data, the relationship between various measures of life satisfaction and income has proved to be concave, i.e. there is a decreasing marginal utility of income: doubling the income level of a person raises individual satisfaction less than twofold (Layard et al., 2008). When longitudinal data exists, allowing the inclusion of individual fixed effects, it is often found that there is significant heterogeneity in individual attitudes about life (Clark et al., 2006). Previous research has not found strong links between level of income and level of happiness, which has been rationalized by decreasing marginal utility of income, adaptive aspirations, interpersonal comparisons of well-being and endogenous (culturally determined) preferences (Layard, 1980, 2006).

The relationship between subjective well-being and the quality of city life is still rather unexplored. Information about local amenities such as climate, environmental and urban conditions is difficult to collect in surveys on representative samples. When these data are available, they prove that location-specific factors (such as excess noise levels, air pollution and climate) have a direct impact on life satisfaction (Brereton et al., 2006).

Only very recently the relationship between quality of places and happiness has been explored by the inventor of the 'creative class', Richard Florida, in a book in which he extensively inquires about the role of places in determining personal achievement. The main message of this new book is not only the quality of the places where we live

affects our happiness but also the kind of place where we live is a key factor for the personal success of creative people (Florida, 2008).<sup>3</sup>

Two potential reasons may explain this lack of analysis. The first relates to the difficulty to provide quantitative measurement of what is meant by ‘quality of life’, which typically mixes objective measures (such as pollution, traffic, availability of public services) with subjective perceptions (related to security, interpersonal relationships, life styles). The second is that life satisfaction has an implicit component of interpersonal comparison: when my consumption increases at the same rate as that of other people living around me, my level of satisfaction may remain constant. However, the dimension of externalities is hard to control, because it would require collecting information not at individual level but at community level. Since an urban area merges rich and poor people living together, each of them with their own perception of the city life, it is hard to disentangle empirical regularities in the associations between (subjectively perceived) dimensions of urban life and (subjectively perceived) level of well-being. Even controlling for individual social status does not help to sort out the matter.

This problem becomes endemic in the comparison of the relationship between quality of life and happiness across different cities (or countries). However, the expanding literature on cross-countries comparisons of the association between income and happiness has provided significant insights not on levels of happiness (which remain not comparable across countries due to historical, religious and cultural differences) but on different patterns of association between well-being and material resources, depending on the level of development of a country (including social networks and social capital — Clark *et al.*, 2006). We aim to replicate a similar exercise with respect to quality of urban life. As long as we are able to construct proxy measures for the quality of city life, we can study how these measures are correlated with a subjectively expressed measure of well-being. As long as these associations are statistically robust, one can go on and speculate on the role of public policies in shaping the well-being of its citizenship.

In the sequel, we use data for a survey conducted in 2006 in a comparable way across 10 metropolitan cities in the developed world, and we explore the subjective perception of happiness and its association with different aspects of city life. In particular, we explore which dimensions are perceived as more strongly associated to individual happiness, under a unique world-wide model of determination. We then explore whether there are deviations from this univocal pattern of association, and we provide a case study for Milan, one of the richest and internationally oriented Italian cities. Contrary to cliché perception about Italians, Milan inhabitants express one of the lowest levels of satisfaction (comparable to Tokyo or Beijing), despite their high levels of income and employment. Our suggested explanation is that the dramatic change which occurred in the last 30 years in the form and structure of the urban area (enlargement, de-industrialization, increasing mobility, immigration, loss of population, polarization etc.) has brought about a worsening of the living conditions perceived by Milan’s residents. We provide indirect evidence on demography, residence and land exploitation, which are consistent with this interpretation.

## 2. Happiness Across World Cities

We make use of a new dataset, the ‘Quality of Life Survey’, which has been conducted in 10 metropolitan areas in the world.<sup>4</sup> The survey has been conducted in December 2006, and has been commissioned by the Metropolitan Government of Seoul, which was interested in

assessing the satisfaction of local inhabitants comparatively with other citizens in other big cities. The questionnaire, reported in Appendix 2, asks opinions about the interviewees' perceptions of different aspects of city life: economy, culture and education, welfare, safety, environment, city administration and community life. It also includes standard demographic information about gender, age, educational attainment, self-assessed income position, occupation, religion, health and marital status. On top of this, two questions relate to the pride of living in the city and to subjectively perceived level of happiness.

From each city included in the project, the data collectors interviewed a sample of 1000 individuals, aged 18 or older. The descriptive statistics of some demographics are reported in Tables 1 and 2, where we provide information on the distribution of educational attainments, income status and some occupational categories. Since the sample is stratified by gender and age, we do not observe significant sample distortions over these two dimensions, yet these cities are quite different in terms of educational attainments. While more than half of the population attains a college degree in North America and Scandinavia, one-third of the adult population does not achieve a secondary school degree in Milan and Berlin. Unfortunately, the survey does not collect objective measures of income, but only subjective assessment of income relative position. The distribution of educational attainment may be only partially suggestive of the actual income distribution, since the return to education may vary across countries according to labour market institutions (such as minimum wages, wage compression, bargaining coverage). However, if the subjective assessment may be informative though asked in relative terms, we notice from Table 2 that income poverty (both in terms of income level and unemployment risk) is highest in Beijing and London and lowest in Tokyo.<sup>5</sup> There are clearly unavoidable cultural differences between countries, as witnessed by women participation in the labour market: the fraction of women self-declaring as housewife is as high as 30% in Seoul or Tokyo, but nil in Stockholm.

It is therefore impossible to compare direct answers to questions about happiness (or even pride of living in a given city), because it may be distorted by cultural biases in perceptions. However, we can reduce the problem by using individual information as controls. As long as richer and/or healthier people are typically happier, by netting out the effect of individual (self-assessed) income position and health status, we reduce the differences across cities, generated by these correlations. In addition, by introducing a city-fixed effect, which takes into account any other difference in unobservables among cities, we are left with a 'pure' model of association between happiness and quality of city life, irrespective of individual and/or local differences.<sup>6</sup>

Having said all that, our aim is twofold. On one hand, we provide operational measures of the 'quality of city life' obtained by individual responses in the questionnaire. On the other hand, we analyse the correlation between these measures and subjective well-being, controlling for standard covariates. As a by-product of the second analysis, we show that individual city-fixed effects may have some interpretation, and speculate about them.

## 2.1 *Measuring the Quality of Life*

The survey is organized in eight sections, each devoted to a specific aspect of the quality of urban life:

- (1) economy (job opportunities, cost of living);
- (2) culture and education (cultural opportunities, tourism, educational system);

Table 1. Descriptive statistics — age, gender and educational attainment — percentage

	Fraction of women	Average age (years)	No education	Primary school completed (6th grade)	Junior high school completed (9th grade)	High school completed (12th grade)	Trade/ vocational school completed	College/ university student	College/ university completed or above	Sample size
Seoul	51.90	44.10	2.06	4.84	8.33	28.81	0.00	12.65	43.31	1000
New York	52.50	45.16	0.41	0.62	2.87	29.06	1.85	8.73	56.47	1000
Toronto	53.10	44.34	0.60	0.81	3.42	22.66	3.63	9.26	59.62	1000
London	51.00	42.79	2.47	2.26	2.16	35.80	6.58	5.04	45.68	1000
Paris	51.30	43.38	1.22	3.56	6.51	40.39	9.56	8.85	29.91	1000
Berlin	50.50	43.72	1.94	10.09	21.41	24.06	12.03	7.54	22.94	1000
Milan	50.79	45.51	0.20	8.01	23.15	33.14	8.41	6.03	21.07	1014
Tokyo	49.60	45.57	0.00	0.50	4.33	23.56	14.40	4.03	53.17	1000
Beijing	49.60	40.80	1.91	3.42	18.79	27.84	7.74	13.97	26.33	1000
Stockholm	50.90	43.81	0.10	2.30	5.81	22.14	11.42	6.31	51.90	1000
Entire Sample	51.12	43.92	1.08	3.65	9.72	28.73	7.59	8.24	40.99	10,014

Source: our elaboration from GMFS survey (2006).

**Table 2.** Descriptive statistics — income status, occupation and unemployment rate — percentage

	Very low income	Low income	Middle income	High income	Very high income	Professionals	White collars	Blue collars (manual + skilled)	Self-employed	Housewife	Unemployment rate (age 30–60)
Seoul	7.71	19.38	51.98	20.63	0.31	8.29	12.94	3.33	15.37	29.42	4.55
New York	5.22	12.99	54.85	20.55	6.39	32.95	9.40	10.22	8.68	2.89	11.59
Toronto	5.20	14.26	56.50	19.56	4.47	25.53	16.41	9.22	13.07	5.37	6.92
London	7.63	22.25	49.95	18.76	1.42	20.45	18.80	11.98	11.05	3.51	17.57
Paris	6.77	19.38	51.15	19.06	3.65	14.88	26.61	11.93	3.26	2.65	12.07
Berlin	9.08	21.96	57.66	10.03	1.27	5.14	37.50	18.35	11.39	1.92	6.31
Milan	4.34	23.41	65.19	6.56	0.50	8.51	29.50	3.47	3.86	13.86	17.14
Tokyo	3.94	19.29	59.29	16.77	0.71	9.30	14.20	11.50	10.30	29.90	3.66
Beijing	10.99	22.98	62.60	2.52	0.91	11.51	8.35	16.70	6.42	3.56	21.84
Stockholm	5.34	11.98	46.32	32.02	4.33	22.73	29.39	14.15	4.55	0.20	6.12
Entire sample	6.61	18.79	55.61	16.61	2.38	15.86	20.36	11.07	8.79	9.39	10.80

Source: Our elaboration from GMFS survey (2006).

- (3) welfare (childcare, support to elderly and disabled people, health system, safety net for the poor);
- (4) safety (feeling protected, free to circulate without danger);
- (5) environment (air and water pollution);
- (6) living conditions (transports, availability of shops, parks);
- (7) city Administration (information, response to citizens, transparency);
- (8) community life (meeting with friends and neighbours, volunteering and social activities).

Each aspect includes two to four statements, which the respondent was asked to express his/her agreement/disagreement about.<sup>7</sup>

We consider these eight aspects as the main descriptors of the quality of urban life. In order to reduce the dimensionality of the problem, we summarize the original 21 items into eight factors extracted by applying principal component analysis. Each factor corresponds to one section of the questionnaire.<sup>8</sup> Each extracted factor accounts for more than half of the original variability of constitutive items, and therefore can be considered a good summary measure of the corresponding dimensions (Table 3). In order to obtain additional information about what citizens are typically concerned with, Table 4 reports the city averages for each factor extracted.<sup>9</sup>

The first aspect (economy) includes two original variables (jobs and prices) that exhibit low correlation among them, but nevertheless attain a positive correlation with this factor. Thus high values indicate high job opportunities and high prices. Therefore, it is not surprising to see that this aspect is strongly underlined by Londoners. The second factor (culture) is mostly correlated with cultural opportunities and pride of being able to show to tourists, while exhibiting lower association with the local educational system. It reaches the highest values in Stockholm and Paris samples. The third factor (welfare) mixes various aspects of welfare policies (health, assistance, education and counselling), all being positively correlated among them and with the extracted factor. Contrary to our expectation, this aspect is mostly highlighted in Paris and, to a lesser extent, in London samples, while it is lowest in Seoul data. The fourth factor (safety) is associated with feeling safe and protected when walking in the streets. The highest values are recorded in Stockholm and London samples, while disagreement is maximum among Milan citizens.

The fifth factor (pollution) reverses the algebraic signs in factor loading, a high value indicating lack of confidence in public water as well as high levels of air pollution. The highest values are recorded in Milan and Seoul samples, while the lowest is found in the Stockholm sample. The sixth factor (living) mixes the quality of public transports with the existence of a local community, even if shops alone do not always make a relationship; we could condense this factor as 'easy and pleasant to wander around'. It is highest in Berlin and Stockholm samples, and again lowest in Seoul one. The seventh factor (administration) is mostly driven by the perception of transparency and vicinity to citizens, while access to internet for administration is less associated to this factor. Once again, this factor is highest in Paris and Stockholm samples. Eventually, the eighth factor (community) captures the existence of high degree of social activity. Surprisingly, it is highest in Berlin and Milan samples, while lowest in Eastern cities (Tokyo and Seoul in particular).

**Table 3.** Description of quality of urban life indicators

		Load factor
	Factor 1 = Economy — proportion of variance explained: 0.5543	
275	1-1. There are plenty of job opportunities in my city.	0.7445
	1-2. The price of living in my city is high.	0.7445
	Factor 2 = Culture — proportion of variance explained: 0.5364	
	2-1. My city allows easy access to culture and leisure facilities.	0.8096
	2-2. There are many things in my city that I can proudly introduce to visitors.	0.8140
	2-3. I am satisfied with the quality of education in my city.	0.5395
280	Factor 3 = Welfare — proportion of variance explained: 0.5140	
	3-1. In times of personal or family crisis, I can turn to the city's public institutions and facilities for help.	0.7162
	3-2. My city is a good place to rear and care for children.	0.6911
	3-3. My city has many facilities for the socially disadvantaged people such as the old, the handicapped, and the poor.	0.7461
285	3-4. I am satisfied with the quality of health care in my city.	.0.7132
	Factor 4 = Safety — proportion of variance explained: 0.6632	
	4-1. I feel safe walking around the city at night.	0.8144
	4-2. I feel safe from the danger of various accidents such as car accidents, fires, and building collapses.	0.8144
	Factor 5 = Pollution — proportion of variance explained: 0.5127	
290	5-1. I feel safe when I drink publicly provided water.	–0.7160
	5-2. Air pollution is a serious problem in my city.	0.7160
	Factor 6 = Living — proportion of variance explained: 0.5235	
	6-1. It is convenient to use public transportation e.g., subways, trains, or buses, in my city.	0.6812
295	6-2. There are many places in my neighbourhood or within walking distance from the place that I live, where I can sit and relax, or talk peacefully to neighbours and friends.	0.7309
	6-3. I can easily walk to buy groceries at shops in my neighbourhood or within walking distance to the place that I live.	0.7564
	Factor 7 = Administration — proportion of variance explained: 0.5459	
300	7-1. It is easy to get information about my city via internet.	0.4483
	7-2. The city government does a good job addressing citizen concerns and requests.	0.8574
	7-3. The city administration is transparent.	0.8376
	Factor 8 = Community — proportion of variance explained: 0.6379	
	8-1. I try to have my friends or neighbours come over to my home as frequently as possible.	0.7987
305	8-2. There are many opportunities for volunteer activities in my city.	0.7987

The average opinions reported in Table 4 by citizens of different cities cannot be directly compared, since we do not control for sample compositions or for differences on unobservables. However, when we simply look at city ranks according to each indicator, the data convey us some known impression: Stockholm comes out as the most preferable city according to the opinions of its citizens with respect to quality of city life (average rank 2.8); Paris, Berlin and London follow closely (their respective average ranks are 3.6, 3.9 and 4.0) (Table 5). At the other extreme of the distribution, Seoul ranks lowest (average rank 9.5), followed by Beijing (average rank 7.0) and Tokyo (average rank 6.6). Among western cities, Milan and Toronto exhibit perceived levels of life quality which are closer to Eastern Asian cities (respectively, 7.0 and

Table 4. Indicators of quality of city life by city factors extracted from original items (Table 3)

City	Economy	Culture	Welfare	Safety	Pollution	Living	Administration	Community
Beijing	-0.309	-0.207	<b>0.147</b>	0.031	-0.010	-0.155	-0.074	-0.158
Berlin	-0.381	0.397	0.027	0.039	-0.474	<b>0.505</b>	0.077	0.471
London	<b>0.584</b>	0.305	0.219	0.310	-0.078	-0.084	-0.048	0.187
Milan	0.274	-0.170	-0.168	-0.738	0.790	-0.182	0.004	<b>0.368</b>
New York	0.149	<b>0.166</b>	-0.075	0.246	-0.155	0.270	0.109	0.157
Paris	0.302	0.558	<b>0.669</b>	-0.025	0.054	0.231	0.201	0.349
Seoul	- <b>0.138</b>	-0.994	-1.171	-0.584	0.802	-0.877	-0.581	-0.922
Stockholm	0.364	<b>0.679</b>	0.021	0.375	-0.750	0.490	0.172	0.011
Tokyo	-0.837	-0.756	-0.009	0.158	- <b>0.295</b>	-0.078	0.015	-0.825
Toronto	0.027	0.080	0.183	0.204	0.109	-0.167	-0.079	<b>0.254</b>

Note: Bolded values indicate the highest value reported for each city. Values referred to 'pollution' are considered with the reverse sign, indicating 'lack of pollution'.



Table 5. City ranks according to indicators of quality of city life (Table 4)

City	Economy	Culture	Welfare	Safety	Lack of pollution	Living	Administration	Community	Average rank	SD rank
Beijing	8	8	4	7	6	7	8	8	7.0	1.41
Berlin	9	3	5	6	2	1	4	1	3.9	2.75
London	1	4	2	2	5	6	7	5	4.0	2.14
Milan	4	7	9	10	9	9	6	2	7.0	2.83
New York	5	5	8	3	4	3	3	6	4.6	1.77
Paris	3	2	1	8	7	4	1	3	3.6	2.62
Seoul	7	10	10	9	10	10	10	10	9.5	1.07
Stockholm	2	1	6	1	1	2	2	7	2.8	2.38
Tokyo	10	9	7	5	3	5	5	9	6.6	2.50
Toronto	6	6	3	4	8	8	9	4	6.0	2.20

6.0 average ranks). It is also interesting to notice that in some cases the opinions of the citizens are more homogeneous than in others. This may reflect cultural attitudes (for example, reluctance to express strong statements, as likely occurring in Seoul or Beijing), but possibly also real contradictions, as in the case of Milan. According to Milan inhabitants, quality of city life is low in terms of welfare provision, public services, safety and pollution, but they rank their city high with respect to the economy and to the community life. This may reflect the pride of Milanese being the economic and moral capital of the country (recently the city has been made seat of the national authority for NGOs), even when we notice that the city ranks quite low on the quality of local services as well as on cultural ground.

In each city, the inhabitants stress some aspects more than others, as suggested by the values in bold in Table 4.<sup>10</sup> Stockholm and New York inhabitants express their appreciation for the cultural opportunities of their cities, Beijing and Paris for the quality of welfare provisions, Milan and Toronto for the level of community life, while London and Seoul samples highlight the economic opportunities offered by their cities. Eventually, Berlin and Tokyo inhabitants emphasize the quality of living conditions and lack of pollution, respectively.

We notice that the general image of the cities emerging from this survey corresponds to the common reputation cities have in the public opinion, except in two cases. Toronto is held being a city of good quality, nevertheless she ranks low. One possible explanation relates to her inhabitants being accustomed to high quality standards, and therefore being more critical about what they have. On the other hand, Beijing is a fast changing city, which reflects in the perception of her inhabitants. We believe that a new survey, conducted after the conclusion of the recent and extraordinary Olympic Games of 2008, would have given very different results, both in terms of pride and appreciation of the qualities of the city.

## 2.2 *Quality of Life, Subjective Well-Being and Pride of Living in a City*

If previous indicators are convincing measures of different dimensions of the quality of urban life, we can now investigate the existing correlation between subjective well-being and these dimensions. Subjective well-being is measured by the answer to the question ‘How happy are you now ?’.<sup>11</sup> The survey also contains a question about the pride of living in a city, which may help to shed some light on the relationship between quality of life and well-being: ‘How proud are you of residing in the city ?’. In facts, consistency of judgments would exclude negative judgements on different aspects of city life associated with citizens’ pride of living in the same city. More controversial is the relationship between pride and happiness, since people could be proud and unhappy, or conversely they could be happy without being pleased of living in a city. However, the unconditional correlation between these two opinions is positive and significant (0.38).

In Table 6, we report the correlation between happiness and city pride with the different indicators of quality of city life.<sup>12</sup> They describe the association between happiness (or pride) and quality-of-life proxy measures, other aspects (gender, age, education, occupation, income, health, marital status and religion) made identical across cities. In addition, we also include city-fixed effects, in order to account for other cultural dimensions which could systematically distort the opinions expressed by different samples.

The individual controls are coherent with what already found in the literature: generally speaking women are happier (and prouder) than men, while marital single are dissatisfied.

**Table 6.** Correlation between happiness, pride and quality of city life — beta OLS coefficient estimates, controlling for standard individual demographics and city-fixed effects

	Happiness	Pride
Economy	0.027	−0.002
Culture	0.066***	0.189***
Welfare	0.067***	0.091***
Safety	0.003	0.046***
Lack of pollution	0.007	0.016
Living conditions	0.074***	0.093***
Administration	0.01	0.060***
Community life	0.098***	0.062***
	*Significant at 10%.	
	**Significant at 5%.	
	***Significant at 1%.	

Happiness increases with income position and health status, whereas it is non-linearly related with education. On the contrary, pride is unrelated to educational attainment or high-income position, whereas it has a positive correlation with health condition. In both cases, happiness and pride are reduced for manual workers. It is interesting to notice that protestant religion is positively and significantly associated to happiness.

It is interesting to notice that happiness and pride are similarly related to the quality of urban life, as described by our factors. The expressed opinions on economy and pollution seem irrelevant with respect to both happiness and pride. Happiness is mostly affected by community life (which has the highest impact) followed by living conditions and, slightly less pronounced, by welfare insurance and culture. On the contrary, pride is strongly associated to cultural offer<sup>13</sup>, and at a lower degree with welfare and living conditions. It is also worth stressing that safety affects pride but not happiness.

It seems that subjective well-being is mostly associated with a good state of human relationships. As already noticed by Frey and Stutzer (2002), experiencing social and/or friendship networks make people happier. According to our results, meeting other people (whether friends or neighbours is equivalent) and/or devoting spare time to volunteer activities makes people feel better. But this also requires a good spatial quality of the city, as suggested by the opinions expressed with respect to living conditions: the availability of public spaces and of vital commercial streets in connection with an efficient transport system seem to represent the best combination that decision makers may offer to increase citizens' well-being. On the contrary, pride of living in a city is associated with partially different factors, mostly with the availability of cultural offers, and at a lower degree with the quality of the local welfare system and the living conditions. It is also interesting to observe that other dimensions (from economy to safety, from pollution to city administration) are uncorrelated with subjective well-being.

Of course, the quality of city space has constantly been a central concern for architects and planners, who have always connected this to the quality of life in cities and therefore to the happiness of people. From the 'Garden City' to the 'City Beautiful' movement at the beginning of the twentieth century, from the precepts of the Modern Movement to the fierce criticism of it proposed by Jane Jacobs in the sixties (Jacobs, 1962), to the theories of the good city form proposed by Kevin Lynch in the 70's (Lynch, 1981), up to the entire

recent debate about ‘urban renaissance’, there has always been an underlying assumption that happiness is intimately connected to the quality of space. The interesting aspect is that now we have the opportunity to directly test citizens across different metropolitan areas of the world about how much they do value the physical quality of their cities. We show that generally speaking they confirm its importance as a (pre)condition for the development of social life, which in turn is the most important factor connected with personal happiness.

These results are independent from local specificities and leave us unable to assess whether living in city A makes people happier than living in city B. The city-fixed effect coefficients reported in Table A.1 represents the average level of happiness once we control for compositional effects related to income, health or religion, as well as for the opinions expressed with respect to different aspects of quality in urban life. According to them, inhabitants of New York or Toronto would be among the happiest citizens of the world, whereas people living in Milan or Beijing would be among the least happy. On the contrary, these coefficients capture all systematic difference in happiness judgments, which are not related to the distribution of observable individual characteristics and/or individual perceptions of life quality. However, if these unobservable factors affect opinions about both subjective well-being and city pride in similar ways, then there can be something to be learnt by observing and comparing these fixed-effect coefficients, which are plotted in Figure 1.<sup>14</sup> It is interesting to notice that there are cities (such as New York or Toronto) whose citizens express on average a high level of pride of residing there, irrespective of opinions expressed with respect to quality of city life; the same citizens tend also on average to be enthusiastic with respect to their life satisfaction, but even taking this into account, the difference between the two effects seems dominated by the ‘pride effect’. Milan and Beijing show a similar pattern, even if they start from lower

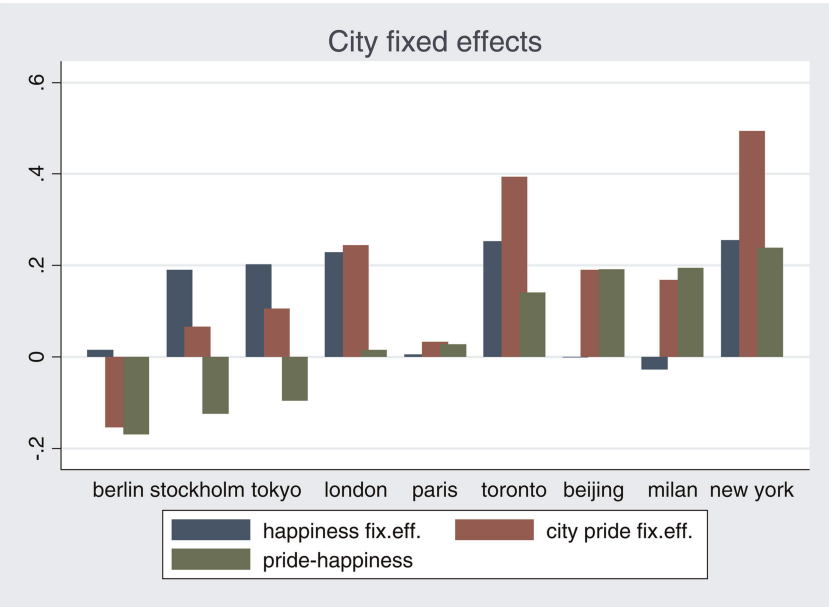


Figure 1. City-fixed effect (Seoul reference case).

(or even negative) levels of life satisfaction. At the other extreme is the case of Berlin: citizens here are as happy as the average, but they are not at all proud of their city.<sup>15</sup>

Summing up, in the overall sample we have identified some general patterns in the opinions of the citizens interviewed by the GMS survey. First of all, even after controlling for individual characteristics, we found that subjective well-being is strongly correlated with the opportunity of personal relationships, which are given both by the town physical structure (availability of meeting places, accessibility of local shops, mobility) and by the existing social organization of life (local meeting opportunities, volunteering). Second, we have shown that subjective well-being and pride of living in a specific city may be uncorrelated, since the latter seems more affected by the cultural opportunities offered by a city, as well as by the good functioning of the local welfare provisions. Third, we have shown that there are some cities (definitively New York, but also Milan and Beijing) whose citizens seem constantly prouder of their cities, irrespective of their conditions (in terms of income, education or health status) or of what are their opinions about the good working of their cities.

Taken at face value, a local politician could learn something from our results.<sup>16</sup> If she/he is concerned with the well-being of his/her constituency, she/he should create opportunities for meeting people, in order to intensify personal ties. Similarly, if she/he is concerned with the city pride of the citizenship, she/he should expand the cultural opportunities and have a look at the working of the welfare system. What our data cannot tell us is whether the electoral behaviour of the citizenship (which is what any politician is mostly concerned with) is more affected by individual perception of well-being or by the pride of living in a specific city. If we knew the answer, we would get a clue in selecting the optimal policies.

### 2.3 *Local Variation in the Relationship Between Quality of Life and Subjective Well-Being*

Our statistical models implicitly assume a unique pattern of well-being (or pride) generation across countries. This unique model may fit the data better for some cities than for others (as can be inferred from the statistical significance of the corresponding city-fixed effect — see column 3 in Tables A.1 and A.2). However, a unique world-wide model of generating happiness (or pride) represents a heroic assumption, given cultural diversities across countries. For this reason, in Tables 7 and 8 we re-estimate the global model by subsamples, showing the correlations between quality-of-life indicators and happiness on one hand and city pride on the other by metropolitan areas. Standard individual controls (such as gender, age, education etc.) are obviously maintained.

By looking at the associations between subjective well-being and indicators of quality of urban life reported in Table 7, we notice that our global model presented in the previous subsection (Table 6) is effectively applicable to most city samples. The indicators of living conditions and community life are positively and significantly correlated with citizens' happiness in eight/seven cases out of 10. More dissimilarities among cities emerge when looking at the other two indicators, which are significantly correlated with happiness at the global level: the indicators for welfare and culture are only significant in five/four cases. There are local specificities in the association between subjective well-being and life quality. Some cities exhibit happiness correlation with fewer indicators (Seoul with living conditions, Paris with welfare and community life, Toronto with culture and

Table 7. Happiness and quality of life

	Entire sample	Seoul	Beijing	Tokyo	Milan	Stockholm	Berlin	Paris	London	New York	Toronto
Economy	0.025	0.036	0.011	-0.065**	0.039	0.02	0.057**	0.00	0.26***	0.01	0.004
Culture	0.062***	0.038	0.089**	0.091***	0.064	0.003	0.078*	0.035	0.009	-0.044	0.11***
Welfare	0.066***	-0.015	0.134***	0.024	0.092**	0.021	0.041	0.068**	0.08**	0.04	0.111***
Safety	0.003	0.022	0.00	-0.031	-0.014	0.049*	0.048	0.01	0.009	-0.014	0.049
Lack of pollution	0.007	0.025	0.02	0.031	-0.019	0.001	0.118***	-0.013	0.016	0.008	-0.044
Living conditions	0.068***	0.081**	0.073*	0.067**	0.094***	0.115***	0.072*	0.036	0.081**	0.051*	0.02
City administration	0.011	0.042	0.031	0.033	0.073**	0.019	-0.085**	-0.038	-0.014	0.06	-0.022
Community life	0.093***	0.032	0.13***	0.056**	0.016	0.097***	0.198***	0.163***	0.128***	0.081**	0.049
Observations	9127	914	959	978	934	973	901	892	823	843	910
R <sup>2</sup>	0.25	0.29	0.26	0.35	0.17	0.35	0.33	0.26	0.39	0.24	0.20
Log likelihood	-10801.4	-926.42	-1242.99	-1009.09	-1101.53	-989.23	-998.99	-985.21	-897.62	-1022.39	-1064.64

Note: Robust ordinary least square coefficients. Controls include gender, age, education, employment, income, health, marital status and religion.

\*Significant at 10%.

\*\*Significant at 5%.

\*\*\*Significant at 1%.

Table 8. Pride and quality of life

	Entire sample	Seoul	Beijing	Tokyo	Milan	Stockholm	Berlin	Paris	London	New York	Toronto
Economy	-0.002	0.053	-0.025	-0.03	0.008	-0.001	0.058*	-0.02	0.048	-0.037	-0.041
Culture	0.193***	0.126***	0.278***	0.268***	0.293***	0.236***	0.102*	0.241**	0.011	0.057	0.211***
Welfare	0.097***	0.07**	0.014	0.043	0.109**	0.101**	0.171***	0.125***	0.018	0.093**	0.181***
Safety	0.046***	0.013	0.115***	0.027	0.018	0.101***	-0.005	0.023	0.079**	0.056	0.066**
Lack of pollution	0.016	0.112***	0.064	0.025	0.1**	0.02	0.046	-0.025	-0.108***	0.056*	-0.009
Living conditions	0.093***	0.122***	0.055	0.051*	0.149***	0.046	0.087*	0.066*	0.315***	0.103***	0.014
City administration	0.067***	0.085*	0.129***	0.12***	0.127***	0.092**	0.125**	0.102***	-0.038	0.017	0.001
Community life	0.063***	0.03	0.043	0.062**	0.074	0.074**	0.043	0.071*	0.196***	0.083**	0.029
Observations	9092	894	958	978	930	971	895	887	831	838	910
R <sup>2</sup>	0.26	0.22	0.25	0.28	0.26	0.2	0.24	0.25	0.4	0.23	0.2
Log likelihood	-11384.3	-975.41	-1202.78	-1108.12	-1170.28	-1168.95	-1181.13	-1034.34	-979.06	-1027.3	-1056.29

Note: Robust ordinary least square coefficients. Controls include gender, age, education, employment, income, health, marital status and religion.

\*Significant at 10%.

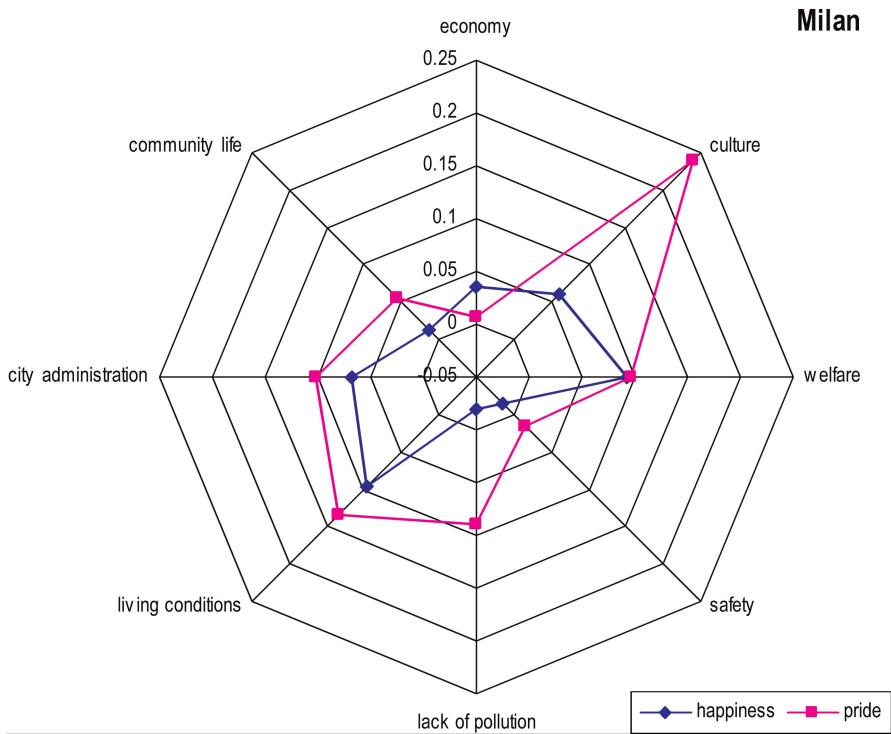
\*\*Significant at 5%.

\*\*\*Significant at 1%.

welfare), while other samples contain more complex models of associations (Berlin being the extreme case where citizens' well-being is associated with all indicators but welfare and safety). Despite searching for the potential existence of continental models of happiness correlations, we do not find strong similarities among Asian cities (Seoul, Beijing and Tokyo) or among continental European cities (Milan, Stockholm, Berlin and Paris) or in the Anglo-Saxon world (London, New York and Toronto). The case of Milan, which will be discussed more extensively in the next section, shows positive association of happiness with welfare, living conditions and city administration, but surprisingly not with community life (despite the high value recorded by the city on this indicator).

When we consider the local models of association between city pride and quality of urban life, the global model finds support at the local level: culture is significant in eight cases out of 10, while living conditions and welfare in seven cases out of 10. Also the quality of city administration reinforces the pride of resident citizens (seven cases out of 10), while economy (one significant case), safety and lack of pollution (four significant cases) seem less relevant for their correlation with pride.

With respect to our focus on the city of Milan, we take the estimated beta coefficients from Tables 7 and 8 and plot them in a comparable way in Figure 2. We notice that what makes most of the difference between happiness and pride in Milan is the cultural offer. However, the two statistical models reveal similarities: welfare, living conditions and city administration raise both subjective well-being and city pride. On the other hand, as we



**Figure 2.** Estimated impact of the quality of life onto happiness and city pride, Milan. *Note:* Beta coefficients corresponding to estimates are reported in Tables 7 and 8.



have already shown in the previous subsection, the overall level of the former is lower than the level of the latter. Milan residents are quite proud of their city, although they do not achieve a high level of well-being. This attitude seems induced by perception of local cultural opportunities (which is common to most Italian cities) as well as by opportunities to meet other people. However, it is worth noticing that personal ties and volunteering show no correlation with both happiness and city pride. Milanese seem to deceive themselves: they are proud of living in a city offering a lot of opportunities (in terms of culture and meeting prospects), without being able to take advantage of them (because both indicators of culture and community life do not correlate with their well-being). The interpretation of these contradictory perceptions is the goal of the next section.

### 3. Happiness and City pride: The Case of Milan

Milan inhabitants are proud of residing in their city, despite the fact that most of the potential indicators of the quality of urban life do not affect their judgment (nor their subjective well-being). We suspect that most of their perceptions is framed in a general context of successful adaptation to productive changes, without being aware of the costs of this change. Let us briefly review these issues.

Milan is the most dynamic metropolitan city in Italy. During the 70's, it experienced a deep crisis when it was feared that the progressive decline of the industrial manufacturing sector would have implied a decline of the city itself. However, in a period when knowledge economy is driving the economic growth, Milan has been able to overcome that crisis (Foot, 2001). The city has always been considered as a crucial pole of the most developed urban Europe, from the Blue Banana (Figure 3) proposed by the French Datar in the 1980s to the more recent Espon Pentagon (Figure 4).

We can look at some basic data in order to understand the depth of the change. Milan is one of the Italian richest cities: the GDP per capita in 2005 was 35,776 euros, while the Italian mean was 24,152 euros. It accounts for 9.7% of the national GDP, while the population accounts for just 6.2%. Despite being the heart of the national economic life, in the



Figure 3. The Blue Banana.



Figure 4. The Espon Pentagon.

last two decades (between 1991 and 2001, both Census years) the Province of Milan<sup>17</sup> has lost one-third of the jobs in the manufacturing sector, while obtaining a parallel increase of 42.9% in the number of jobs in the service sector, the overall increase in jobs scoring at 5.9% (Table 9). But the most important change has been the increase in the number of firms, which has overpassed the growth rate of jobs (+59.4% over the same time span).

Table 9. Employment dynamics — Province of Milan — 1971–2001

	Census year 1971	Census year 1981	Census year 1991	Census year 2001
Employment				
Industry	895 773	825 735	697 723	555 068
Among which building sector	73 211	69 376	91 135	93 531
Services	496 493	862 641	1 020 130	1 233 362
Workplaces				
Industry	56 240	70 436	73 840	81 466
Among which building sector	9 110	16 145	23 221	33 745
Services	123 710	163 490	197 335	291 477
Firm size (employment per workplace)				
Industry	15.93	11.72	9.45	6.81
Among which building sector	8.04	4.30	3.92	2.77
Services	4.01	5.28	5.17	4.23

Source: Italian National Statistical Office (ISTAT) — various census.

The obvious consequence has been a dramatic decline in firm size in the industrial sector, while exhibiting no trend in the service sector. This means that Milan has overcome the economic crisis through a structural change and a fragmentation process: a structural change from manufacturer to service sector and a fragmentation of the number of enterprises that had a direct impact not only in the economic environment, but also upon the number of actors who take decisions.

The availability of jobs is clearly recognisable, especially when we look at social conditions of the population (Table 10). The employment rate for men in the central age is above 90%, while the corresponding rate for females has grown by 15 percentage points in one decade. If we exclude the juvenile situation, the unemployment rate is close to a frictional one.

Another deep process of change has interested the population structure and its distribution across neighbouring municipalities (Table 11 and Figure 5). The city of Milan has lost one-third of its population in the last 30 years (approximately 480,000 inhabitants), just like other situations of 'shrinking cities', but this did not occur as result of the economic crisis as it took place in the 70's and nowadays in other places (like in East Europe). On the contrary, until the end of the 80's, the population had moved to the outer part of the Province, which in fact rose during this period to the peak of nearly four millions inhabitants, and later on towards the bordering provinces around Milan. The fall in the resident population of the inner city has been cushioned by the growth in the percentage of foreign people who have come to account for 10% of the population, amounting to 132,676 inhabitants in 2001 according to official statistics (which do not include a vast illegal immigration). Without immigration, Milan would have been even more depopulated.

The causes leading to this process of strong decentralization are well known: on the one hand the strong pressure on urban housing markets, producing a constant rise of urban accommodation costs; on the other hand, the continued expansion of private motor transport, which made it relatively easy to reach more and more distant places. This process has been amplified by the change in the pattern of population distribution, implying a fragmentation of actors: vis-à-vis the constant decline of the population, in the same period we observe a continuous increase in the number of families, yielding a corresponding decline in family size (Table 12). If we add the fall in the birth rate, at the end of the period, 58% of families in the province consisted of one or two components. As for the number of enterprises, we see here a proliferation of decision takers.

Jointly considered, these transformations had an impact in the physical form of the urban region. Let us observe Milan from two satellite images taken in 1972 and 2001. In the 1972 image (Figure 6), the compacted urban structure that developed along some of the spokes, especially towards the North, is still recognisable. A series of centres can be recognized in a crown configuration at a distance of 15–20 km from Milan. They are second-order centres of aggregation that follow a typical crystalline pattern. The capitals of the bordering provinces are very distinct: Bergamo, Pavia, Piacenza and also Como, Lecco and Varese to the North.

The situation in 2001 is very different (Figure 7): a stratum of urbanization has stretched over the ancient framework. The central area of Milan in the 2001 image has no breaks between it and many of the first and second rings of towns, constituting one single dense urban formation with them. But if we widen our angle of view, we can see two additional interesting phenomena: other dense urban formations appear with their own

Table 10. Employment condition — City of Milan — 1991–2001

	Men				Women			
	15–29	30–49	50 and over		15–29	30–49	50 and over	
Census year 2001								
Employed	51,188	168,615	80,180		45,903	141,442	49,004	
Unemployed	10,044	9416	4686		8229	9084	2760	
Students	34,886	1453	8		35,861	1793	12	
Housewife	58	197	857		4113	29,842	119,430	
Pensioners	124	741	135,211		231	2532	133,714	
Others	3641	5766	9587		1951	3947	14,858	
Total	99,941	186,188	230,529		96,288	188,640	319,778	
Participation rate (%)	61.27	95.62	36.81		56.22	79.80	16.19	
Employment rate (%)	51.22	90.56	34.78		47.67	74.98	15.32	
Unemployment rate (%)	40.40	5.29	5.52		15.20	6.03	5.33	
Census year 1991								
Employed	74,766	161,995	94,104		63,567	119,830	39,658	
Unemployed	20,112	1938	3002		18,228	6742	1093	
Students	54,244	806	0		53,360	816	0	
Housewife	0	0	0		9679	54,407	163,276	
Pensioners	1427	2356	121,286		991	5215	101,867	
Others	7352	4064	13,460		2237	3378	15,828	
Total	157,901	177,954	231,852		148,062	190,388	321,722	
Participation rate (%)	60.09	92.12	41.88		55.24	66.48	12.67	
Employment rate (%)	47.35	91.03	40.59		42.93	62.94	12.33	
Unemployment rate (%)	21.20	1.18	3.09		22.28	5.33	2.68	

Source: Italian National Statistical Office (ISTAT) — various census.

**Table 11.** Resident population — City of Milan, its province and bordering provinces (1951–2001)

Provinces	Census year 1951	Census year 1961	Census year 1971	Census year 1981	Census year 1991	Census year 2001	Variation % (1981– 2001)
City of Milan	1,274,154	1,582,421	1,732,000	1,604,773	1,369,231	1,256,211	–21.7
Province of Milan	2,324,717	2,983,903	3,727,841	3,839,006	3,738,685	3,707,210	–3.4
Bordering provinces							
Novara (west)	274,421	303,481	327,901	337,271	334,614	343,040	1.7
Varese (north-west)	477,055	581,528	725,823	788,057	797,039	812,477	3.1
Como (north)	361,667	405,975	476,209	511,425	522,147	537,500	5.1
Lecco (north-east)	216,046	233,069	265,359	286,636	295,948	311,452	8.7
Bergamo (east)	681,417	727,758	807,914	874,035	909,692	973,129	11.3
Pavia (south)	506,511	518,193	526,389	512,895	490,898	493,753	–3.7
Lodi (south-east)	180,436	172,912	175,844	179,102	184,025	197,672	10.4
Piacenza (south-east)	299,138	291,059	284,881	278,424	267,633	263,872	–5.2

*Source:* Italian National Statistical Office (ISTAT) — various census.

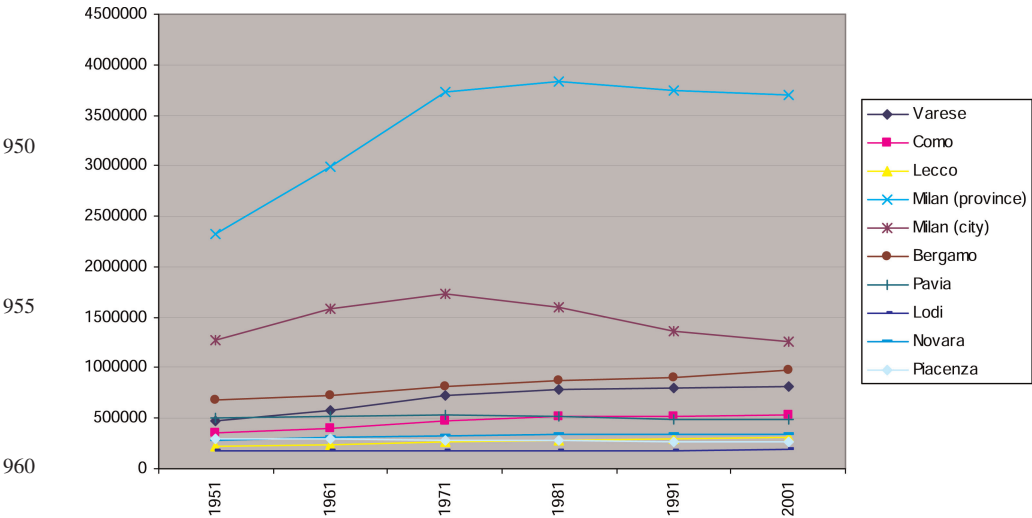


Figure 5. Population dynamics.

Table 12. Family size — City of Milan, its province and bordering provinces (1971–2001)

Provinces	Census year 1971	Census year 1981	Census year 1991	Census year 2001
City of Milan	2.76	2.53	2.32	2.11
Province of Milan	3.01	2.79	2.61	2.38
Novara (west)	2.83	2.65	2.54	2.39
Varese (north-west)	3.12	2.89	2.73	2.52
Como (north)	3.19	2.94	2.73	2.53
Lecco (north-east)	3.27	2.96	2.76	2.55
Bergamo (east)	3.41	3.03	2.8	2.57
Pavia (south)	2.88	2.61	2.45	2.31
Lodi (south-east)	3.17	2.87	2.72	2.52
Piacenza (south-east)	3.05	2.68	2.48	2.31

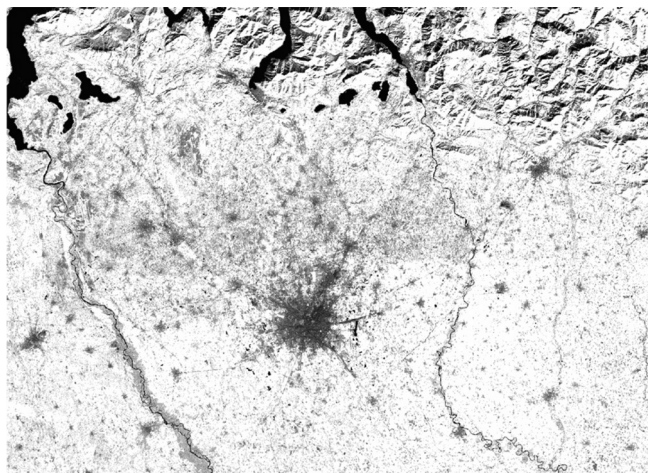
Source: Italian National Statistical Office (ISTAT) — various census.

physiognomy outside Milan, while the bordering provinces have been incorporated in the strongly urbanized and enlarged urban region.

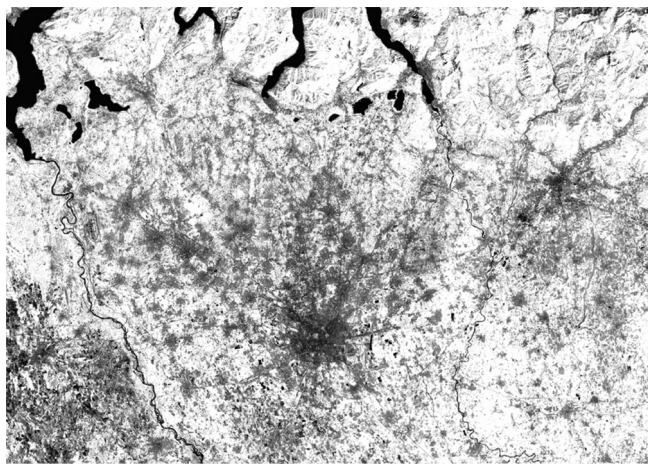
To assess the situation of the city, we cannot avoid to look at the consequences of this profound change in its structure and pattern. The very substantial loss of population and industrial activities of the core city has been offset by an increase in the population that uses the city either everyday or temporarily.

On this account, we register the dramatic consequences of this pattern of development first of all in terms of land consumption. The Murbandy/Moland (Monitoring Urban Q5 Dynamics/Monitoring Land Use Changes) project, carried out by the European Environment Agency and the Directorate General Joint Research Centre of the European Commission, shows the spatial evolution of 25 European urban areas during the last 50 years





**Figure 6.** 1972 satellite image. *Source:* Global Land Cover Facility.



**Figure 7.** 2001 satellite image. *Source:* Global Land Cover Facility.

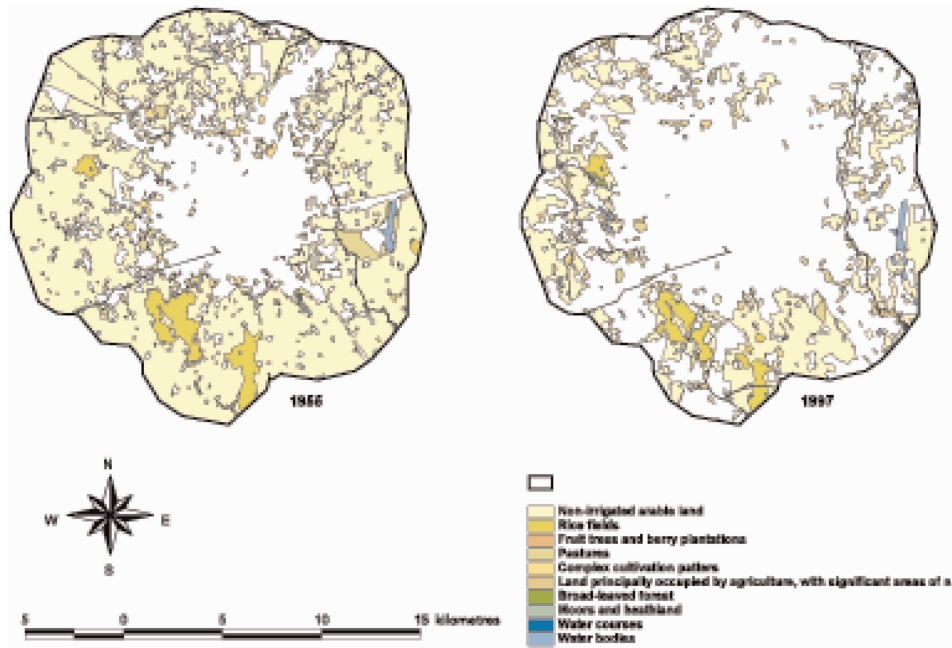
(Lavallo *et al.*, 2002). From the 1950s to 1990s, the loss of agricultural land in the Milan area due to urban sprawl totals 37% of the entire area, one of the highest score among the main European cities (Table 13 and Figure 8).

More recent data on building permits released by municipalities show that trends in soil loss do not slow down. Indeed from 2000 to 2005, 83.4 millions of cubic metric of new residential and not residential buildings have been realized in the Milan province.<sup>18</sup>

Secondly, the air pollution linked to the increase in mobility is nowadays extremely serious: just to cite few data, in 2006, the Milan area recorded 149 days above the maximum threshold of PM10 (polluting micromolecular particles), against a maximum 35 days per year limit established by the European Union.<sup>19</sup> Similarly, we record 829

**Table 13.** Loss of agricultural and natural land due to urban sprawl from 1956 to 1998

	Total area (km <sup>2</sup> )	Total urbanized area (km <sup>2</sup> )		Urban sprawl: increase in artificial area (%) during the 40/50 years study period	Loss of agricultural land due to sprawl vs. total area (%) during the 40/50 years study period
		1950s	1990s		
Milan	325.2	114.5	233.4	103.8	37.0



**Figure 8.** Loss of agricultural and natural land due to urban sprawl from 1956 (left) to 1997 (right) (only natural and agricultural areas are depicted)

peaks above the threshold established for ozone emissions.<sup>20</sup> In fact, each day between 700,000 and 900,000 vehicles enter the city for different reasons, and it is estimated that the daily population almost doubles the number of the resident population.

Thirdly, the dynamism of the Milanese economy has brought about a continuous increase in the property market, with the correlated problems of finding affordable housing. Recent studies show that there is a need of 55,000 affordable housing today and that in the near future (period 2006–15), there will be an additional need for 124,000 housing units (CRESME, 2006). The cost of housing has pushed a fraction of the population out of the inner city, the very same population that is now commuting in and out, even from towns and cites quite far away. At the same time, the inhabitants of the inner city commute within the city: one-third of them have a travelling time between one-quarter and half-hour, and another third exceeds half-hour each way. From this viewpoint, the new city produced perverse effects: the population that moved out in



**Table 14.** Age structure — Milan and province, 2001 — proportion of total population

	0– 5	5– 14	15– 19	20– 24	25– 34	35– 54	55– 64	65– 74	75 and over
1085 Province of Milan (%)	4.4	8.3	4.3	5.3	16.3	29.8	13.5	10.6	7.6
City of Milan (%)	3.9	6.9	3.5	4.7	16.0	28.0	14.3	12.5	10.3
Province of Milan excluding the City of Milan (%)	4.7	9.0	4.7	5.6	16.4	30.7	13.0	9.6	6.2

Source: Italian National Statistical Office (ISTAT) — 2001 census.

search of more affordable housing replaced the high urban housing costs with the time and cost of travelling. It is a process that has dragged production, commercial and transport activities along with it, which today is dramatically perceived in the form of traffic congestion, increased consumption of land and high levels of air pollution.

Finally, the selective movements of populations in and out the core city have changed the age structure of the city and of the urban region. In 2001, 22.8% of the city's population is more than 65 years old, one of the highest in Europe (Table 14).

Summing up, the macro evidence suggests that the urban region of Milan is experiencing a deep process of change: on the one hand, we can see the core city acquiring more and more the role of a 'platform' for activities — from business to leisure — which is working quite efficiently but is oppressing the living conditions of the resident population. On the other hand, we can see that the population living in Milan is changing its composition and distribution across the urban region: the resident population of the core city is ageing, with a limited replacement by the young living outside but working in the city, whereas the share of immigrants is increasing, attracted by the booming economy. We know that this profound transformations are causing contradictory effects: while the quality of life seems worsening for the resident population due to traffic congestion, air pollution and conflicts between residents and city users (Martinotti, 1993), housing prices continue to increase, yielding so far a financial return higher than any equity in the stock exchange, indicating indirectly that living in Milan continues to be somehow attractive.

In our opinion, this may explain the apparent contradictory opinions expressed by the Milan sample in the GMS. They have witnessed a quick transformation of their territory without being protagonists. Most of the resident population do not take direct advantage of greater opportunities, and if any,, they have seen a worsening of their life conditions: higher housing prices, longer commuting times, heavier pollution. Therefore, they may be proud of living around such a stimulating environment, but their actual life condition is much less satisfying. This may explain why the reported well-being is much lower than their city pride.

#### 4. Policies to Improve Citizens' Well-Being in Milan

This deep transformation in the structure and form of the Milan metropolitan area has raised three main issues in the scientific and political debate. The first one is the problem of infrastructures. This rapid development has occurred without a real capacity of national, regional and/or local governments to provide effective policies to support

the mobility in the most economically vital area of the country (OECD, 2006). The railway system is more or less the same as that in the beginning of the 20th century, whereas the highway system was completed in the 1970s and there have been some progress only in the development of the underground system of the core city. In the most recent years, these themes have gained momentum in political and economic circles, where the lack of adequate infrastructures (roads and public transport) is almost unanimously recognized. Local authorities now seem to realize it while trying to gather funding and consensus, two problems not easy to be solved jointly and at the same time. According to our previous results from surveys, the capability to move is perceived as improving the network of personal ties, and therefore associated to higher well-being.

The second issue is the metropolitan governance (OECD, 2006). It is by now clear that the traditional administrative structure is completely inadequate to cope with problems which go far beyond the borders and the traditional catchment areas of local policies. Many attempts in the past to solve the problem of establishing a new metropolitan level of government have failed (Balducci, 2003). It is possible to notice a slow but progressive growth in the awareness that a new institutional design should be based upon voluntary cooperation between existing institutions rather than upon a legislative imposition of an institutional re-design of the local government structure. The governance context is so complex that no simple formula can try to put some order in it. However, looking at the perception of the citizenships, the administration quality does not correlate with subjective well-being, though it raises the pride of the local inhabitants.

A third important issue which now calls for open discussion is *the quality of life*. It is widely recognized that over the last 20 years, Milan has succeeded in passing through profound economic changes and overcoming their potentially dramatic effects, but this has been done by sacrificing the equilibrium of its environment and liveability. There is an obvious connection with the two previous themes, the infrastructural crisis and the metropolitan governance problem. Quality of life is deeply affected by pollution and traffic congestion, which are in turn strongly linked to an inadequate public and private transport system. But it is also linked to the governance fragmentation, which brought about uncontrolled development across the urban region. This theme is getting a growing importance in the scientific debate and in the media, while political actors are quite reluctant in addressing it with robust policies. Only recently the Provincial government, a rather weak actor in the administrative structure of local government, has proposed a strategic project centred upon the notion of liveability. Its main argument is that achieving higher levels of liveability, in the new conditions of the economic and social evolution of the urban region, must be considered a strategic objective, both for people and for enterprises (Provincia di Milano, 2007).

Interestingly enough, in this project the Province proposes six different meanings of liveability, covering various aspects of what is nowadays considered critical in Milan (Provincia di Milano, 2007). These themes have significant overlapping with those covered by the GMS survey. Here is the list of these not mutually excluding aspects:

- (1) Residing. House finding; changing and transforming; stable or temporary residing; being welcomed and welcoming; staying at home and out, alone and with others.
- (2) Moving and breathing. Free moving with different transport means, in different directions; comfortable waiting spaces; reducing pollution, making the environment healthier and creating the conditions for better breathing.

- (3) Spaces sharing. Connecting people in places; offering silent spaces and opportunity to slow down; to multiply meeting places and give chance to unexpected practices; creating conditions of natural and green contexts.
- (4) Making culture and using it. Enjoying and being stimulated by various opportunities; promoting culture in various places; multiplying learning opportunities and artistic activities.
- (5) Promoting a new local welfare. Valuing voluntary activities and practices of solidarity; favouring citizens' involvement; networking and making social services more affordable; supporting families who face difficulties.
- (6) Innovating and making enterprise. Being supportive in innovation and creation of new enterprises; building society and territory at the same time; rooting enterprises; favouring connections with global networks.

If we consider all these aspects of liveability, reflecting upon the situation described in the first part of this article, we can say that in most of the liveability dimensions the Milan metropolitan area has regressed over the last 20 years. This is true for 'residing', due to a speculative property market which has reduced rented and affordable housing to a minimum; for 'moving and breathing', for the very high levels of pollution due to a congested private mobility; for 'spaces sharing', due to the conflicting uses of public spaces by residents and city users. A suspended judgement has to be assumed in relation to other dimensions where we can see signs of progress as for 'making culture and using it', thanks to improved incomes and diffuse cultural vitality; for 'promoting a new local welfare', due to the resistant welfare tradition and to the strength of voluntary associations; and finally for 'innovating and making enterprise', due to the development of the knowledge economy.

Looking at the GMS survey, it is quite interesting to notice that all these different dimensions of liveability have been submitted to the attention of the sample with the results that we have already reported above. Milan's citizens are very worried about air pollution and safety in their city; they express a negative opinion also about the quality of public services and of their administration, while retaining a positive opinion only on the local economy and on community life. But all this sums up to one of the least happy population (even if not reflected into a negative position with respect to city pride). Our discussion shows that the different aspects of quality of life have a direct impact upon happiness and therefore should be considered in designing public policies. The novelty is that this is not only important for people's happiness but also for economic competitiveness in a phase when the attraction of new talents and new firms is becoming a very important drive for the development of the knowledge economy. We could claim that in order to attract new talents, the new creative people who can boost innovation and wealth, a city administration has to offer the possibility of sharing some happy urban conditions, which in turn are linked to policies strengthening the quality of life: good public space, high quality amenities, mixture of arts and culture to produce exchange in a dense and free atmosphere.

We have seen that the critical aspects of Milan's liveability are also those which worry the sample of interviewees upon their perceived happiness. As a consequence, we could easily conclude that the development of policies for the quality of life could be important not only to meet citizens' expectations but also to improve city's attractiveness. In a phase in which world's metropolis compete to attract talents, our survey says that the positioning

of Milan is at risk of loosing them, at least as far as the quality of the urban environment is concerned. But the relative high level of city's pride measured in the survey suggests us another interesting implication: a high level of pride represents a capital of trust in the overall quality of the city, which is not to be wasted. A further worsening of liveability could compromise this endowment, forcing more and more inhabitants to leave the city. Using Albert Hirschman's well-known sequence of *exit, voice and loyalty* (Hirschman, 1970), we could say that a high level of pride is a sign of *loyalty*, which could stand a worsening of the leaving conditions up to the point when it leads to an *exit* choice. Milan's residents are using their *voice* option, but so far public policies are not listening to it. But if we were to look at possible in-comers, the very mobile new talents (Florida, 2008), they may be attracted by the economic vitality of the city; however, if the city is unable to offer a good quality of life, they can easily migrate to other better places. Here is where the connection between the citizens' perception about happiness and pride and the need for public policies for the improvement of urban space becomes evident and could lead to strategic choices. In this paper, we made use of an ad hoc survey on different aspects of city life conducted in 2006 in 10 metropolitan areas of the developed world. We have investigated the relationship between eight indicators of quality of urban life and subjective well-being expressed by the interviewed citizens. We have shown that the subjective well-being is strongly correlated with the opportunity of personal relationships, which are given both by the town physical structure (availability of meeting places, accessibility of local shops, mobility) and by the existing social organization of life (local meeting opportunities, volunteering).

We have also studied the association between life quality and pride of living in a specific city, finding a significant correlation with the cultural opportunities offered by a city, as well as by the good functioning of the local welfare provisions. By combining the results about well-being and pride, we have shown that there are some cities (definitively New York, but also Milan and Beijing) whose citizens seem constantly prouder of their cities, irrespective of their individual conditions or opinions.

When considering city-specific models of association between happiness and life quality, we confirmed the robustness of the global model, but we were unable to find consistent regional models of association. We then focused on the case of Milan, where we have highlighted an apparent contradiction: local residents are proud of living in a city offering several cultural opportunities, without being able to take advantage of them to raise their own well-being.

We have suggested an interpretation of this outcome by illustrating the recent changes undergone by the Milan area. The recent urban transformations have forced a large fraction of residents to adapt to different life-styles, living across the urban region and working downtown. Milanese citizens seem to combine two conflicting perceptions: on one hand, they are proud of residing in Milan, because the city offers greater cultural and welfare prospects; on the other hand, they are less happy than they could have been accordingly (when compared with other cities). We read it as an implicit desire for a better quality of life. Political actors are implicitly or explicitly aware of this situation and nevertheless they do not address it with robust measures because they fear that this could negatively affect the economic health of the city. The outcome is a situation in which policies remain hesitant and inconsistent.

In our opinion, this contradiction between pride and happiness in the city is still the projection of an attitude going back to the tradition of Milan as an industrial city. In the

industrial era, economic strength was independent, if not hostile to the quality of life, opposing the world of producing to the world of living. In the current phase of the knowledge economy, a reconciliation of what the industrial city had to separate is not only possible but also necessary. If political actors are able to look ahead, they could see that growth must connect the expectations of economic development with those of the quality of the environment, the social cohesion and the cultural vitality of the city. More audacious policies addressing various low-scoring dimensions of the quality of urban life could improve the attractiveness of the city for key economic actors, but also could result in citizens still proud but happier.

## Acknowledgements

A preliminary version of the current paper was presented at the first meeting of the Global Metropolitan Forum of Seoul on 'Assessing happiness and competitiveness of world major metropolitan areas', held in Seoul (19 January 2007). We thank the Metropolitan Forum for making the individual data used in the empirical analysis available to us. We also thank the editor of the journal for helpful suggestions.

## Notes

1. We use interchangeably 'subjective well-being', 'life satisfaction' and 'happiness'. For the exact wording of these questions in most known opinion surveys, see Layard *et al.* (2008).
2. An unsolved (and unsolvable) question in this literature concerns the causality between happiness perception and various life events. For example, it is well known that events such as unemployment and marriage have large and significant cross-section correlations with various measures of subjective well-being. But the converse may also be true: unsatisfied people are more likely to loose their jobs and/or to break their affective relationships. For this reason, in the sequel we will speak of correlations and not of causal impacts.
3. The empirical evidence of Florida 2008 is obtained from the correlation between 'overall place satisfaction' and/or 'city satisfaction' with various factors (aesthetics and lifestyle, basic services, openness, economic and personal security) among US cities.
4. The sample includes Seoul, New York City, Toronto, London, Paris, Berlin, Milan, Tokyo, Beijing and Stockholm.
5. We are also dubious about the significance of the item 'unemployed' in the list of occupation, since the alternative item 'retired' was absent. In particular, the unemployment rate in Milan is much higher than the official unemployment rate for the province of Milan in 2006 (3.9%). This can be partially explained by the more generous retirement clauses of the Italian system: in fact, when we restrict the age interval to 30–50, it declines to 10.4% (the sample average also declining to 7.51).
6. There is a further caveat. The interviewees were not asked to express their opinions in relative terms (for example, by ranking their perceived quality of life in different cities, or by making comparisons 'Are you proud of residing in Milan rather than in London?', which would require additional controls about having actually lived in both cities), but just in absolute terms ('Are you proud of residing in Milan?'). In this way, the expressed judgments do not allow a cardinal interpretation, but just an ordinal one.
7. We did not participate in the design of the survey, and therefore we could not contribute to the inclusion or exclusion of specific item. In our opinion, some questions are expressed in ambiguous terms (for example, in the case of pollution mixing behaviours and opinions), some are vague (There are many things in my city that I can proudly introduce to visitors) and some others too specific (It is easy to get information about my city via internet). Some aspects are not investigated at all (consumption or income inequalities, territorial segregation, social tensions associated to migrants or racism, political participation, to quote some of them). However, we maintain the impression that most of the aspects perceived by citizenship are more or less precisely included in this survey.
8. If we abstract from the original grouping of the items into predefined sections, and we apply principal component analysis to the 21 original items, we obtain four factors. After rotation, the first factor correlates to the

items of the third and seventh sections (welfare+administration), the second corresponds to the second and sixth sections (culture+living condition), the third to the first and eighth sections (economy+community life) and the fourth to the fourth and fifth sections (safety+environment). For this reason, we feel justified in using the original eight sections and the corresponding factors derived from them.

9. Remember that each factor extracted by the original variable is standardized by construction (i.e. zero mean and unitary standard deviation). Therefore, a positive number in Table 4 indicates values above the 'world' average; conversely negative values correspond to cases below the average. An almost unitary coefficient indicates one standard deviation detachment from the 'world' mean.
10. In factor analysis, we cannot control for city-specific effects (such as education, religion, political representation), which may systematically affect the opinions expressed by the interviewees. However, as long as these distortions affect the opinions over all domains, the comparison of alternative city rankings according to different dimensions is still meaningful.
11. In order to analyse the answers to the questionnaire, we have recoded each item by assigning -2 to 'not happy at all', -1 to 'not very happy', 0 to 'neither happy nor unhappy', 'don't know' and 'refusal', +1 to 'somewhat happy' and +2 to 'very happy'. Results are unaffected when recoding to missing 'don't know' and 'refusal', but sample sizes are significantly reduced in some areas. Similarly, the answer to the questions about pride of living in a city have been recoded in order to assign positive values to affirmative assessments, and negative values to disapproving ones, with zero values to neutral judgments.
12. The numbers reported in Table 6 corresponds to the beta coefficients associated to the estimated parameters with ordinary least-squares methods. The full version of the least-squares estimates are reported in column 3 of Tables A.1 (happiness) and A.2 (pride), which also show the estimated coefficients under an alternative statistical model (ordered probit).
13. However, there may be some association between how the two questions were formulated. The question about pride is 'How proud are you of residing in the city?', while one of the questions summarized in the factor culture reads 'There are many things in my city that I can proudly introduce to visitors.' The unconditional correlation between the two variables is 0.36.
14. The coefficients and their statistical significance can be traced in column 3 of Tables A.1, happiness, and A.2, city pride.
15. Here it would have been interesting to know whether the Berlin interviewees were resident in the formerly Eastern or Western part of the city, or they were just newcomers. We suspect that city pride in this case may be strongly influenced by past history events.
16. It is important to recall that our indicators of quality of life are not obtained from hard measures of actual policies (such as spending per capita) but from aggregation of opinions expressed by a sample of the citizens. In addition, we are able to present just simple correlations between subjective well-being (or city pride) and these indicators, without being able to provide causal interpretation of these effects.
17. The local government has three administrative levels in Italy: the city (administered by a municipality), the province (corresponding approximately to a county) and the region (in the case of Milan, the regional government of Lombardy administers 11 provinces, including the province of Milan).
18. Source: Italian National Statistical Office — Istat.
19. Source: *Rapporto sulla qualità dell'aria di Milano e Provincia — anno 2005*. ArpaLombardia 2006.
20. Source: RSA Provincia di Milano, 2005.

## References

- Balducci, A. (2003) Policies, Plans and Projects. Governing the city-region of Milan, *DISP*, 2.
- Brereton, F., Clinch, J. & Ferreira, S. (2006) *Happiness, Geography and the Environment*, PEP Discussion Paper n.06/04, Dublin: University College.
- Clark, A., Diener, E., Georgellis, Y. & Lucas, R. (2006) *Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis*, IZA Discussion Paper No. 2526.
- CRESME (2006) *Gli scenari della domanda residenziale nella provincia di Milano 2006-2015* Firenze, Alinea.
- Diener, E., Suh, E., Lucas, R. & Smith, H. (1999) Subjective well-being: Three decades of progress, *Psychological Bulletin*, 125(2), pp. 276–303.
- Di Tella, R. & MacCulloch, R. (2006) Some Uses of Happiness Data in Economics, *Journal of Economic Perspectives*, 20(1), pp. 25–46.

Q6

Q7

Q7



- Easterlin, R. (1974) Does economic growth improve the human a lot ? Some empirical evidence, *Nations and Households in Economic Growth: Essays in Honor of Moses Abramowitz* (New York and London: Academic Press).
- Easterlin, R. (2001) Income and happiness: towards a unified theory, *Economic Journal*, 111, pp. 465–484.
- Florida, R. (2008) *Who's Your City? How the Creative Economy is Making Where to Live the Most Important Decision of Your Life* (New York: Basic Books).
- Foot, J. (2001) *Milan Since the Miracle. City, Culture, Identity* (Oxford: Berg).
- Frey, B. S. & Stutzer, A. (2002) *Happiness in Economics* (Princeton: Princeton University Press).
- Hirschman, A. O. (1970) *Exit, Voice and Loyalty. Responses to Decline in Firms, Organisations and States* (Cambridge, MA: Harvard University Press).
- Jacobs, J. (1962) *The Death and Life of Great American Cities* (London: Jonathan Cape).
- Lavallo *et al.* (2002) *Towards an Urban Atlas* (Brussels: EC-JRC EEA).
- Layard, R. (1980) Human satisfactions and public policy, *Economic Journal*, 90, pp. 737–750.
- Layard, R. (2006) Happiness and public policy: a challenge to the profession, *The Economic Journal*, 116, pp. C24–C33.
- Layard, R., Mayraz, G. & Nickell, S. (2008) The marginal utility of income, *Journal of Public Economics*, 92, pp. 1846–1857.
- Lynch, K. (1981) *A Theory of Good City Form* (Cambridge, MA: The MIT Press).
- Martinotti, G. (1993) *Metropoli. La nuova morfologia sociale della città* (Bologna, IL: Mulino).
- OECD (2006) *Territorial Review: Milan, Italy* (Paris: OECD).
- Provincia di Milano (2007) *Per la città abitabile. Scenari, visioni, idee* (Milano: Assessorato al Piano strategico).

## Appendix 1

**Table A.1.** Determinants of happiness

	1 ols	2 ols	3 ols	4 oprobit	5 oprobit	6 oprobit
female	0.12 [4.15]***	0.109 [4.06]***	0.096 [3.50]***	0.168 [4.19]***	0.161 [4.15]***	0.142 [3.75]***
Age	−0.009 [1.43]	−0.007 [1.13]	−0.007 [1.11]	−0.011 [1.27]	−0.009 [0.99]	−0.009 [1.00]
age2	0 [1.92]*	0 [1.49]	0 [1.38]	0 [1.71]*	0 [1.33]	0 [1.26]
educ = elementary school completed (6th grade)	−0.069 [0.70]	−0.048 [0.56]	−0.036 [0.47]	−0.147 [1.09]	−0.132 [1.11]	−0.115 [1.09]
educ = junior high school completed (9th grade)	−0.225 [2.42]**	−0.207 [2.46]**	−0.209 [2.98]**	−0.341 [2.65]***	−0.339 [2.97]***	−0.349 [3.62]***
educ = high school completed (12th grade)	−0.203 [2.13]*	−0.147 [1.64]	−0.198 [2.25]*	−0.304 [2.42]**	−0.247 [2.12]**	−0.326 [2.76]***
educ = trade/vocational school completed	−0.198 [1.74]	−0.168 [1.69]	−0.218 [2.60]**	−0.304 [1.87]*	−0.284 [2.05]**	−0.357 [3.10]***
educ = college/university student	−0.172 [1.62]	−0.087 [1.00]	−0.133 [1.53]	−0.265 [1.83]*	−0.165 [1.30]	−0.237 [1.83]*
educ = college/university completed or above	−0.196 [2.16]*	−0.13 [1.52]	−0.212 [2.66]**	−0.303 [2.39]**	−0.231 [1.90]*	−0.357 [3.00]***

(Continued)

**Table A1.** Continued

		1 ols	2 ols	3 ols	4 oprobit	5 oprobit	6 oprobit
1400	occup = agriculture/ fishery/forestry	0.119	0.118	0.065	0.115	0.12	0.037
		[1.48]	[2.12]*	[1.07]	[0.77]	[1.16]	[0.28]
	occup = self – employed	–0.052	–0.044	–0.112	–0.077	–0.068	–0.152
1405	occup = office workers	0.005	–0.018	–0.051	–0.005	–0.036	–0.066
		[0.08]	[0.28]	[0.77]	[0.06]	[0.42]	[0.77]
	occup = manual workers	–0.14	–0.152	–0.202	–0.173	–0.197	–0.265
1410	occup = skilled workers	[1.78]	[2.06]*	[2.60]**	[1.86]*	[2.07]**	[2.56]**
		–0.007	–0.005	–0.087	–0.009	–0.008	–0.112
	occup = professional	[0.09]	[0.07]	[1.04]	[0.10]	[0.08]	[1.08]
1415	occup = sales	–0.006	–0.022	–0.103	–0.019	–0.041	–0.149
		[0.09]	[0.30]	[1.34]	[0.23]	[0.43]	[1.55]
	occup = student	–0.021	0.015	–0.057	–0.028	0.022	–0.069
1420	occup = housewife	[0.21]	[0.16]	[0.69]	[0.22]	[0.18]	[0.64]
		0.065	0.058	0.012	0.063	0.056	0.002
	occup = unemployed	[0.76]	[0.66]	[0.13]	[0.56]	[0.46]	[0.01]
1425	health = very bad	–0.054	0.038	–0.029	–0.111	0.014	–0.062
		[0.56]	[0.57]	[0.40]	[0.88]	[0.15]	[0.69]
	health = bad	–0.056	–0.06	–0.12	–0.06	–0.067	–0.141
1430	health = good	[0.64]	[0.72]	[1.29]	[0.57]	[0.66]	[1.24]
		–0.566	–0.517	–0.542	–0.569	–0.523	–0.561
	health = very good	[3.26]***	[2.94]**	[3.27]***	[3.09]***	[2.69]***	[3.11]***
1435	income = very low income	–0.365	–0.313	–0.322	–0.406	–0.35	–0.362
		[3.10]**	[2.74]**	[2.90]**	[3.18]***	[2.76]***	[2.91]***
	income = low income	0.324	0.266	0.257	0.396	0.329	0.32
1440	income = high income	[9.96]***	[10.33]***	[10.75]***	[11.02]***	[13.56]***	[10.77]***
		0.639	0.52	0.507	0.891	0.757	0.743
	income = very high income	[14.33]***	[13.59]***	[13.81]***	[12.74]***	[12.83]***	[12.40]***
1445	marital = single, never married	–0.398	–0.357	–0.353	–0.446	–0.401	–0.4
		[4.74]***	[4.89]***	[4.68]***	[4.46]***	[4.44]***	[4.26]***
	marital = married	–0.195	–0.159	–0.16	–0.24	–0.199	–0.201
1450	marital = divorced	[4.39]***	[3.83]***	[3.79]***	[4.66]***	[3.93]***	[3.92]***
		0.163	0.124	0.116	0.256	0.212	0.205
	marital = widowed	[6.72]***	[5.44]***	[5.17]***	[6.22]***	[5.43]***	[5.56]***
1455	marital = single, never married	0.308	0.244	0.217	0.571	0.502	0.464
		[2.66]**	[2.21]*	[1.90]*	[2.93]***	[2.62]***	[2.34]**
	marital = married	–0.215	–0.169	–0.15	–0.295	–0.242	–0.213
1460	marital = divorced	[2.94]**	[2.89]**	[2.62]**	[2.79]***	[2.77]***	[2.56]**
		–0.062	0.007	0.051	–0.09	0.004	0.074
	marital = widowed	[0.98]	[0.16]	[1.16]	[1.00]	[0.06]	[1.10]
1465	marital = single, never married	–0.105	–0.066	–0.055	–0.154	–0.105	–0.086
		[0.95]	[0.65]	[0.53]	[1.00]	[0.72]	[0.58]
	marital = married	–0.17	–0.088	–0.06	–0.237	–0.13	–0.086
1470	marital = divorced	[1.85]*	[1.27]	[0.87]	[1.87]*	[1.36]	[0.91]
	marital = widowed						

(Continued)



**Table A1.** Continued

		1 ols	2 ols	3 ols	4 oprobit	5 oprobit	6 oprobit
1445	relig = Catholic	0.032	0.014	0.027	0.044	0.019	0.041
		[0.62]	[0.33]	[0.89]	[0.64]	[0.31]	[0.95]
	relig = protestant	0.146	0.122	0.083	0.212	0.187	0.126
		[5.46]***	[3.91]***	[3.40]***	[5.03]***	[3.82]***	[3.45]***
	relig = Jewish	0.138	0.054	-0.045	0.231	0.115	-0.044
		[1.65]	[1.06]	[1.07]	[1.85]*	[1.36]	[0.69]
1450	relig = Islam	0.203	0.129	0.079	0.295	0.198	0.129
		[1.98]*	[1.55]	[1.28]	[2.06]**	[1.65]*	[1.37]
	relig = Buddhism	-0.109	-0.028	-0.008	-0.14	-0.035	-0.007
		[2.61]**	[0.76]	[0.17]	[2.42]**	[0.76]	[0.11]
	relig = Hinduism	-0.199	-0.239	-0.377	-0.129	-0.187	-0.405
		[0.62]	[0.83]	[1.27]	[0.34]	[0.54]	[1.12]
1455	relig = other	0.038	0.002	-0.055	0.091	0.039	-0.046
		[0.50]	[0.04]	[1.06]	[0.84]	[0.45]	[0.72]
	economy		0.025	0.025		0.037	0.038
			[1.07]	[1.47]		[1.14]	[1.55]
	culture		0.06	0.062		0.075	0.079
			[4.49]***	[3.82]***		[3.75]***	[3.52]***
1460	welfare		0.069	0.066		0.096	0.092
			[5.39]***	[4.55]***		[5.85]***	[5.33]***
	safety		0.021	0.003		0.037	0.01
			[2.12]*	[0.29]		[2.86]***	[0.66]
	lack of pollution		0.021	0.007		0.029	0.007
			[1.92]*	[0.57]		[1.74]*	[0.45]
1465	living conditions		0.07	0.068		0.098	0.095
			[6.06]***	[6.49]***		[5.71]***	[7.08]***
	city administration		0.006	0.011		0.005	0.013
			[0.32]	[0.58]		[0.23]	[0.55]
	community life		0.085	0.093		0.124	0.136
			[5.99]***	[5.05]***		[6.86]***	[5.64]***
1470	city = New York			0.255			0.408
				[6.74]***			[7.04]***
	city = Toronto			0.253			0.39
				[5.99]***			[5.91]***
	city = London			0.229			0.337
				[5.76]***			[5.44]***
1475	city = Paris			0.005			-0.011
				[0.09]			[0.16]
	city = Berlin			0.015			0.019
				[0.26]			[0.26]
	city = Milan			-0.027			-0.043
				[0.73]			[0.83]
1480	city = Tokyo			0.202			0.283
				[8.81]***			[8.43]***
	city = Beijing			-0.001			0.027
				[0.03]			[0.42]
1485	city = Stockholm			0.19			0.299
				[3.57]***			[4.19]***

(Continued)

**Table A1.** Continued

	1	2	3	4	5	6
	ols	ols	ols	oprobit	oprobit	oprobit
Observations	9127	9127	9127	9127	9127	9127
$R^2$ (or pseudo- $R^2$ )	0.19	0.23	0.25	0.08	0.11	0.11
Log likelihood	-11155.2	-10869.6	-10801.4	-10455.1	-10166.6	-10086.2

Robust  $t$  statistics in brackets. Errors clustered by city. Excluded case: man, no education, other occupational and marital status, in fair health and middle income, no religion, living in Seoul.

\*Significant at 10%.

\*\*Significant at 5%.

\*\*\*Significant at 1%.

**Table A.2.** Determinants of city pride

	1	2	3	4	5	6
	ols	ols	ols	oprobit	oprobit	oprobit
female	0.104 [3.37]***	0.089 [4.66]***	0.073 [4.16]***	0.126 [3.42]***	0.119 [4.57]***	0.102 [4.49]***
age	-0.008 [1.25]	-0.004 [0.73]	-0.005 [0.83]	-0.008 [1.14]	-0.004 [0.53]	-0.005 [0.63]
age2	0 [1.93]*	0 [1.24]	0 [1.28]	0 [1.87]*	0 [1.10]	0 [1.14]
educ = elementary school completed (6th grade)	-0.113 [0.64]	-0.094 [0.57]	-0.063 [0.46]	-0.169 [0.78]	-0.164 [0.74]	-0.129 [0.67]
educ = junior high school completed (9th grade)	-0.128 [0.69]	-0.099 [0.54]	-0.121 [0.80]	-0.181 [0.79]	-0.166 [0.69]	-0.196 [0.94]
educ = high school completed (12th grade)	-0.207 [1.22]	-0.127 [0.70]	-0.203 [1.31]	-0.268 [1.29]	-0.195 [0.82]	-0.295 [1.41]
educ = trade/vocational school completed	-0.113 [0.62]	-0.084 [0.48]	-0.115 [0.80]	-0.173 [0.76]	-0.156 [0.66]	-0.193 [0.96]
educ = college/university student	-0.197 [0.96]	-0.058 [0.29]	-0.144 [0.81]	-0.27 [1.10]	-0.11 [0.42]	-0.228 [0.95]
educ = college/university completed or above	-0.19 [1.15]	-0.104 [0.55]	-0.208 [1.37]	-0.255 [1.25]	-0.169 [0.70]	-0.306 [1.48]
occup = agriculture/ fishery/forestry	-0.449 [0.97]	-0.498 [1.12]	-0.504 [1.16]	-0.509 [1.04]	-0.618 [1.21]	-0.633 [1.25]
occup = self-employed	-0.186 [1.35]	-0.171 [1.31]	-0.098 [0.83]	-0.215 [1.31]	-0.211 [1.23]	-0.126 [0.78]
occup = office workers	-0.189 [2.05]*	-0.232 [2.37]**	-0.099 [1.07]	-0.226 [2.00]**	-0.299 [2.29]**	-0.13 [1.01]
occup = manual workers	-0.108 [1.02]	-0.136 [1.13]	-0.059 [0.58]	-0.111 [0.81]	-0.162 [0.95]	-0.066 [0.44]

(Continued)

Table A2. Continued

		1 ols	2 ols	3 ols	4 oprobit	5 oprobit	6 oprobit
1535	occup = skilled workers	-0.159 [1.29]	-0.154 [1.24]	-0.093 [0.81]	-0.174 [1.19]	-0.187 [1.15]	-0.109 [0.70]
	occup = professional	-0.117 [1.05]	-0.151 [1.25]	-0.135 [1.14]	-0.143 [1.06]	-0.2 [1.24]	-0.186 [1.16]
	occup = sales	-0.18 [1.39]	-0.127 [1.07]	-0.058 [0.51]	-0.198 [1.25]	-0.149 [0.92]	-0.064 [0.40]
1540	occup = student	-0.068 [0.52]	-0.094 [0.74]	-0.012 [0.10]	-0.074 [0.48]	-0.121 [0.73]	-0.012 [0.07]
	occup = housewife	-0.372 [2.45]**	-0.234 [1.84]*	-0.141 [1.15]	-0.436 [2.48]**	-0.297 [1.78]*	-0.188 [1.15]
	occup = unemployed	-0.057 [0.41]	-0.061 [0.46]	-0.018 [0.13]	-0.059 [0.35]	-0.065 [0.37]	-0.012 [0.07]
1545	health = very bad	-0.786 [4.22]***	-0.713 [4.88]***	-0.706 [4.85]***	-0.805 [4.66]***	-0.793 [5.91]***	-0.796 [5.76]***
	health = bad	-0.16 [4.26]***	-0.074 [1.97]*	-0.047 [1.27]	-0.164 [4.02]***	-0.076 [1.65]*	-0.042 [0.89]
	health = good	0.238 [5.33]***	0.147 [4.24]***	0.139 [4.61]***	0.259 [5.42]***	0.164 [4.40]***	0.156 [4.73]***
1550	health = very good	0.509 [8.58]***	0.315 [6.13]***	0.295 [6.34]***	0.613 [8.51]***	0.419 [6.43]***	0.397 [6.52]***
	income = very low income	-0.232 [5.41]***	-0.182 [6.14]***	-0.174 [7.21]***	-0.246 [4.54]***	-0.193 [4.90]***	-0.19 [5.45]***
	income = low income	-0.134 [3.50]***	-0.077 [2.81]**	-0.073 [2.49]**	-0.151 [3.48]***	-0.093 [2.75]***	-0.09 [2.50]**
1555	income = high income	0.117 [2.14]*	0.046 [0.85]	0.063 [1.16]	0.153 [2.30]**	0.077 [1.08]	0.102 [1.40]
	income = very high income	0.159 [1.97]*	0.049 [1.07]	0.022 [0.31]	0.222 [1.99]**	0.108 [1.55]	0.07 [0.70]
1560	marital = single, never married	-0.023 [0.38]	0.042 [0.64]	0.005 [0.09]	-0.018 [0.25]	0.066 [0.77]	0.01 [0.14]
	marital = married	-0.03 [0.43]	0.088 [3.23]**	0.069 [2.68]**	-0.032 [0.40]	0.12 [3.03]***	0.089 [2.86]***
	marital = divorced	0.046 [0.43]	0.111 [1.20]	0.058 [0.97]	0.075 [0.61]	0.161 [1.35]	0.087 [1.21]
1565	marital = widowed	0.009 [0.12]	0.14 [2.64]**	0.101 [2.56]**	0.013 [0.14]	0.183 [2.39]**	0.126 [2.30]**
	relig = catholic	0.165 [2.75]**	0.156 [3.59]***	0.091 [1.86]*	0.204 [2.82]***	0.211 [3.63]***	0.132 [2.06]**
	relig = protestant	0.099 [2.08]*	0.062 [1.16]	0.053 [1.61]	0.118 [1.96]**	0.083 [1.15]	0.066 [1.47]
1570	relig = jewish	0.471 [4.17]***	0.355 [7.55]***	0.108 [3.42]***	0.641 [3.65]***	0.545 [5.68]***	0.189 [4.50]***
	relig = islam	0.547 [6.75]***	0.428 [7.49]***	0.366 [4.78]***	0.714 [6.61]***	0.606 [7.27]***	0.533 [5.32]***
	relig = buddhism	-0.158 [1.56]	-0.028 [0.53]	-0.013 [0.25]	-0.174 [1.63]	-0.025 [0.45]	-0.017 [0.30]

(Continued)

**Table A2.** Continued

		1	2	3	4	5	6
		ols	ols	ols	oprobit	oprobit	oprobit
1580	relig = hinduism	0.376	0.315	0.082	0.471	0.417	0.108
		[1.00]	[0.76]	[0.19]	[1.05]	[0.80]	[0.20]
	relig = other	0.067	0.019	−0.056	0.103	0.047	−0.058
		[0.91]	[0.27]	[1.34]	[1.19]	[0.53]	[1.22]
	Economy		0.008	−0.002		0.01	−0.002
			[0.28]	[0.13]		[0.27]	[0.11]
1585	Culture		0.181	0.193		0.216	0.237
			[5.91]***	[6.33]***		[5.06]***	[5.86]***
	Welfare		0.111	0.097		0.138	0.127
			[4.78]***	[6.14]***		[4.70]***	[6.08]***
	Safety		0.064	0.046		0.089	0.069
			[4.62]***	[3.66]***		[4.81]***	[4.28]***
1590	Lack of pollution		0.006	0.016		0.007	0.022
			[0.28]	[0.81]		[0.22]	[0.82]
	Living conditions		0.081	0.093		0.102	0.121
			[3.00]**	[4.11]***		[2.91]***	[4.15]***
	City administration		0.061	0.067		0.083	0.093
			[2.73]**	[3.51]***		[3.15]***	[3.92]***
1595	Community life		0.065	0.063		0.087	0.089
			[4.57]***	[5.19]***		[4.71]***	[6.08]***
	city = New York			0.494			0.682
				[13.72]***			[12.14]***
	city = Toronto			0.394			0.473
				[14.10]***			[9.85]***
1600	city = London			0.244			0.27
				[6.02]***			[5.30]***
	city = Paris			0.033			−0.027
				[0.72]			[0.51]
	city = Berlin			−0.154			−0.241
				[3.32]***			[4.41]***
1605	city = Milan			0.168			0.163
				[4.17]***			[2.66]***
	city = Tokyo			0.106			0.091
				[3.12]**			[1.89]*
	city = Beijing			0.19			0.195
				[3.66]***			[3.13]***
1610	city = Stockholm			0.066			0.025
				[1.27]			[0.45]
	Observations	9092	9092	9092	9092	9092	9092
	$R^2$ (or pseudo- $R^2$ )	0.11	0.23	0.26	0.05	0.1	0.11
	Log likelihood	−12202.3	−11536.9	−11384.3	−11505.1	−10848.5	−10681.2

1615 Robust  $t$  statistics in brackets. Errors clustered by city. Excluded case: man, no education, other occupational and marital status, in fair health and middle income, no religion, living in Seoul.

\*Significant at 10%.

\*\*Significant at 5%.

\*\*\*Significant at 1%.

## Appendix 2: The questionnaire

Questionnaire: Quality of Life Survey 1-4

ID: \_ \_ \_ \_

Hello, my name is \_\_\_\_\_. I'm working for \_\_\_\_\_ a research company as an interviewer. We are conducting a research project concerning some issues. Would you mind if I ask you a few questions for a moment?

AREA.

0) Seoul 1) NYC 2) Toronto 3) London 4) Paris 5) Berlin 6) Milan 7) Tokyo 8) Beijing 9) Stockholm 5

SQ1. Specify the gender 6

1) Male 2) Female (CHECK QUOTA)

SQ2. Could you please tell me your age? 7-8( ) years old (CHECK QUOTA) If less than 18, thanks and terminate

■ I will read some statements to you. Please tell me how much you agree or disagree with each statement using 5-point scale – strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.

		Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Don't Know	Refusal
Economy								
1-1. There are plenty of job opportunities in my city.	9	①	②	③	④	⑤	⑧	⑨
1-2. The price of living in my city is high.	10	①	②	③	④	⑤	⑧	⑨
Culture and Education								
2-1. My city allows easy access to culture and leisure facilities.	11	①	②	③	④	⑤	⑧	⑨
2-2. There are many things in my city that I can proudly introduce to visitors.	12	①	②	③	④	⑤	⑧	⑨
2-3. I am satisfied with the quality of education in my city.	13	①	②	③	④	⑤	⑧	⑨
Welfare								
3-1. In times of personal or family crisis, I can turn to the city's public institutions and facilities for help.	14	①	②	③	④	⑤	⑧	⑨
3-2. My city is a good place to rear and care for children.	15	①	②	③	④	⑤	⑧	⑨
3-3. My city has many facilities for the socially disadvantaged people such as the old, the handicapped, and the poor.	16	①	②	③	④	⑤	⑧	⑨
3-4. I am satisfied with the quality of health care in my city.	17	①	②	③	④	⑤	⑧	⑨
Safety								
4-1. I feel safe walking around the city at night.	18	①	②	③	④	⑤	⑧	⑨
4-2. I feel safe from the danger of various accidents such as car accidents, fires, and building collapses.	19	①	②	③	④	⑤	⑧	⑨
Environment								
5-1. I feel safe when I drink publicly provided water.	20	①	②	③	④	⑤	⑧	⑨
5-2. Air pollution is a serious problem in my city.	21	①	②	③	④	⑤	⑧	⑨
Living conditions								
6-1. It is convenient to use public transportation e.g., subways, trains, or buses. in my city.	22	①	②	③	④	⑤	⑧	⑨
6-2. There are many places in my neighborhood or within walking distance from the place that I live, where I can sit and relax, or talk peacefully to neighbors and friends.	23	①	②	③	④	⑤	⑧	⑨
6-3. I can easily walk to buy groceries at shops in my neighborhood or within walking distance to the place that I live.	24	①	②	③	④	⑤	⑧	⑨
City Administration								
7-1. It is easy to get information about my city via internet.	25	①	②	③	④	⑤	⑧	⑨
7-2. The city government does a good job addressing citizen concerns and requests.	26	①	②	③	④	⑤	⑧	⑨
7-3. The city administration is transparent.	27	①	②	③	④	⑤	⑧	⑨
Community Life								
8-1. I try to have my friends or neighbors come over to my home as frequently as possible.	28	①	②	③	④	⑤	⑧	⑨
8-2. There are many opportunities for volunteer activities in my city.	29	①	②	③	④	⑤	⑧	⑨

9. How is your health in general? (READ CODE 1–5) **30**

- 1) Very good
- 2) Good
- 3) Fair
- 4) Bad
- 5) Very bad
- 8) Don't Know (DO NOT PROMPT)
- 9) Refusal (DO NOT PROMPT)

10. How proud are you of residing in the city? (READ CODE 1–5) **31**

- 1) Very proud
- 2) Somewhat proud
- 3) Neither proud nor not proud
- 4) Not very proud
- 5) Not proud at all
- 8) Don't Know (DO NOT PROMPT)
- 9) Refusal (DO NOT PROMPT)

11. How happy are you now? (READ CODE 1–5) **32**

- 1) Very happy
- 2) Somewhat happy
- 3) Neither happy nor unhappy
- 4) Not very happy
- 5) Not happy at all
- 8) Don't Know (DO NOT PROMPT)
- 9) Refusal (DO NOT PROMPT)

**Demographic Questions**

D1. Could you please tell me your education level? (READ CODE 1–7) **33**

- 1) No education
- 2) Elementary school completed (6<sup>th</sup> grade)
- 3) Junior high school completed (9<sup>th</sup> grade)
- 4) High school completed (12<sup>th</sup> grade)
- 5) Trade/Vocational school completed
- 6) College/University student
- 7) College/University completed or above
- 9) Refusal (DO NOT PROMPT)

D2. What is the level of your household income? (READ CODE 1–5) **34**

- 1) Very low income
- 2) Low income
- 3) Middle income
- 4) High income
- 5) Very high income
- 9) Refusal (DO NOT PROMPT)

D3. Could you please tell me your occupation? **35–36**

- 1) Agriculture/fishery/forestry
- 2) Self-employed
- 3) Office workers

- 1715 4) Manual workers  
5) Skilled workers  
6) Professional  
7) Sales  
8) Student  
9) Housewife  
10) Unemployed  
11) Other (Please specify: \_\_\_\_\_)  
98) Don't Know  
1720 99) Refusal (DO NOT PROMPT)
- D4. Could you please tell me your marital status? (READ CODE 1–5) 37
- 1725 1) Single, never married  
2) Married  
3) Divorced  
4) Widowed  
5) Other  
9) Refusal (DO NOT PROMPT)
- D5. Could you please tell me your religion? 38
- 1730 1) Catholic  
2) Protestant  
3) Jewish  
4) Islam  
5) Buddhism  
1735 6) Hinduism  
7) Other  
8) No religion  
9) Refusal (DO NOT PROMPT)
- 1740
- 1745
- 1750
- 1755