Are happiness and pride related to the quality of city life ? The case of Milan, the richest Italian city[1]

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1. INTRODUCING MILAN

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 the 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 1) proposed by the French Datar in the 1980s to the more recent Espon Pentagon (Figure 2).

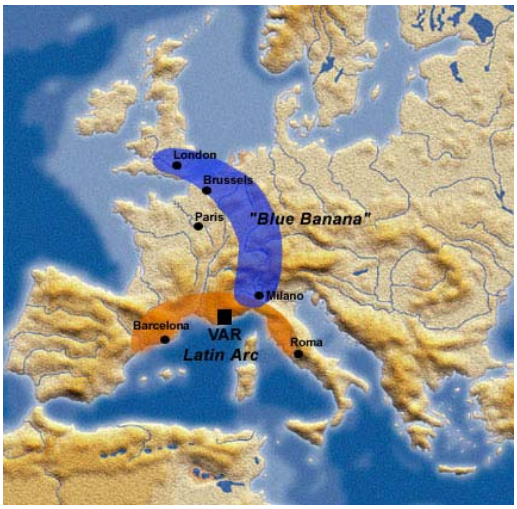

Figure 1 - The Blue Banana

Figure 2 – The Espon Pentagon

Milan is typically one of those cities, which operates as a *milieu* where proximity and joint presence creates an abundance, a surplus of current and potential exchanges between industry and culture, management and finance and art and creative industry, and at the same time leads outwards with access to multiple networks of communication, transport, information, and business relationships which allows the milieu to be a complex and dense environment where innovation can develop.

We can look at some basic data in order to understand the deepness 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 last two decades (between 1991 and 2001, both Census years) the Province of Milan[2] 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

[1] A preliminary version of the current paper was presented to the first meeting of the Global Metropolitan Forum of Seoul on "Assessing happiness and competitiveness of world major metropolitan areas", held in Seoul (19/01/2007). We thank the Metropolitan Forum for making the individual data used in the empirical analysis available to us.

[2] 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 eleven provinces, including the province of Milan).

increase in jobs scoring at 5.9% (see Table 1). But the most important change has been the increase in the number of firms, which has overpassed the growth rates of jobs (+59.4% over the same time span). 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.

Table 1 – 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

Table 2 – Employment condition – City of Milan – 1991-2001

census year 2001

	Men			women		
	15-29	30-49	50 and over	15-29	30-49	50 and over
employed	51188	168615	80180	45903	141442	49004
unemployed	10044	9416	4686	8229	9084	2760
students	34886	1453	8	35861	1793	12
housewife	58	197	857	4113	29842	119430
pensioners	124	741	135211	231	2532	133714
others	3641	5766	9587	1951	3947	14858
total	*99941*	*186188*	*230529*	*96288*	*188640*	*319778*
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	16.40%	5.29%	5.52%	15.20%	6.03%	5.33%

census year 1991

	Men			women		
	15-29	30-49	50 and over	15-29	30-49	50 and over
employed	74766	161995	94104	63567	119830	39658
unemployed	20112	1938	3002	18228	6742	1093
students	54244	806	0	53360	816	0
housewife	0	0	0	9679	54407	163276
pensioners	1427	2356	121286	991	5215	101867
others	7352	4064	13460	2237	3378	15828
total	*157901*	*177954*	*231852*	*148062*	*190388*	*321722*
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

The availability of jobs is clearly recognisable, especially when we look at social conditions of the population (see table 2). 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 distribution across age cohorts (see table 3 and figure 3). The city of Milan has lost 1/3 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 '70s.

On the contrary, until the end of the '80s the population has moved to the outer part of the Province, which in fact raised during this period to the peak of nearly 4 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 account for a vast illegal immigration). Without immigration, Milan would have given the impression of uninhabited city.

The causes leading to this process of strong decentralisation 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 (see Table 4). If we add the fall in the birth rate, at the end of the period the 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.

Table 3 – 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	*1274154*	*1582421*	*1732000*	*1604773*	*1369231*	*1256211*	*-21.7%*
Province of Milan	2324717	2983903	3727841	3839006	3738685	3707210	-3.4%
bordering provinces							
Novara (west)	274421	303481	327901	337271	334614	343040	1.7%
Varese (north-west)	477055	581528	725823	788057	797039	812477	3.1%
Como (north)	361667	405975	476209	511425	522147	537500	5.1%
Lecco (north-east)	216046	233069	265359	286636	295948	311452	8.7%
Bergamo (east)	681417	727758	807914	874035	909692	973129	11.3%
Pavia (south)	506511	518193	526389	512895	490898	493753	-3.7%
Lodi (south-east)	180436	172912	175844	179102	184025	197672	10.4%
Piacenza (south-east)	299138	291059	284881	278424	267633	263872	-5.2%

Source: Italian National Statistical Office (ISTAT) - various Census

Figure 3 – Population dynamics

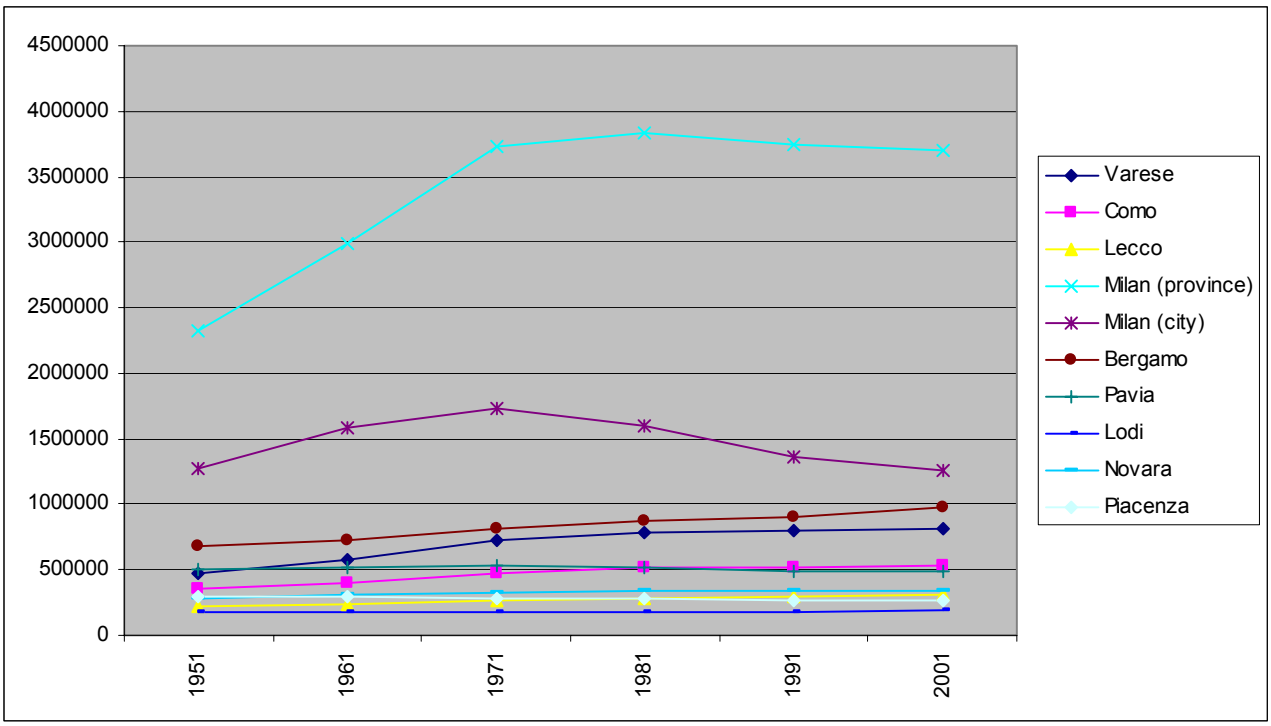

Table 4 – Family size – City of Milan, its province and bordering provinces – 1971-2001

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

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 2), the compacted urban structure that developed along some of the spokes, especially towards the North, is still recognisable. A series of centres can be recognised in a crown configuration at a distance of 15-20 km from Milan. They are second order centres of aggregation that follow a typical crystallerian pattern. The capitals of the bordering provinces are very distinct: Bergamo, Pavia, Piacenza, and also Como, Lecco and Varese to the North.

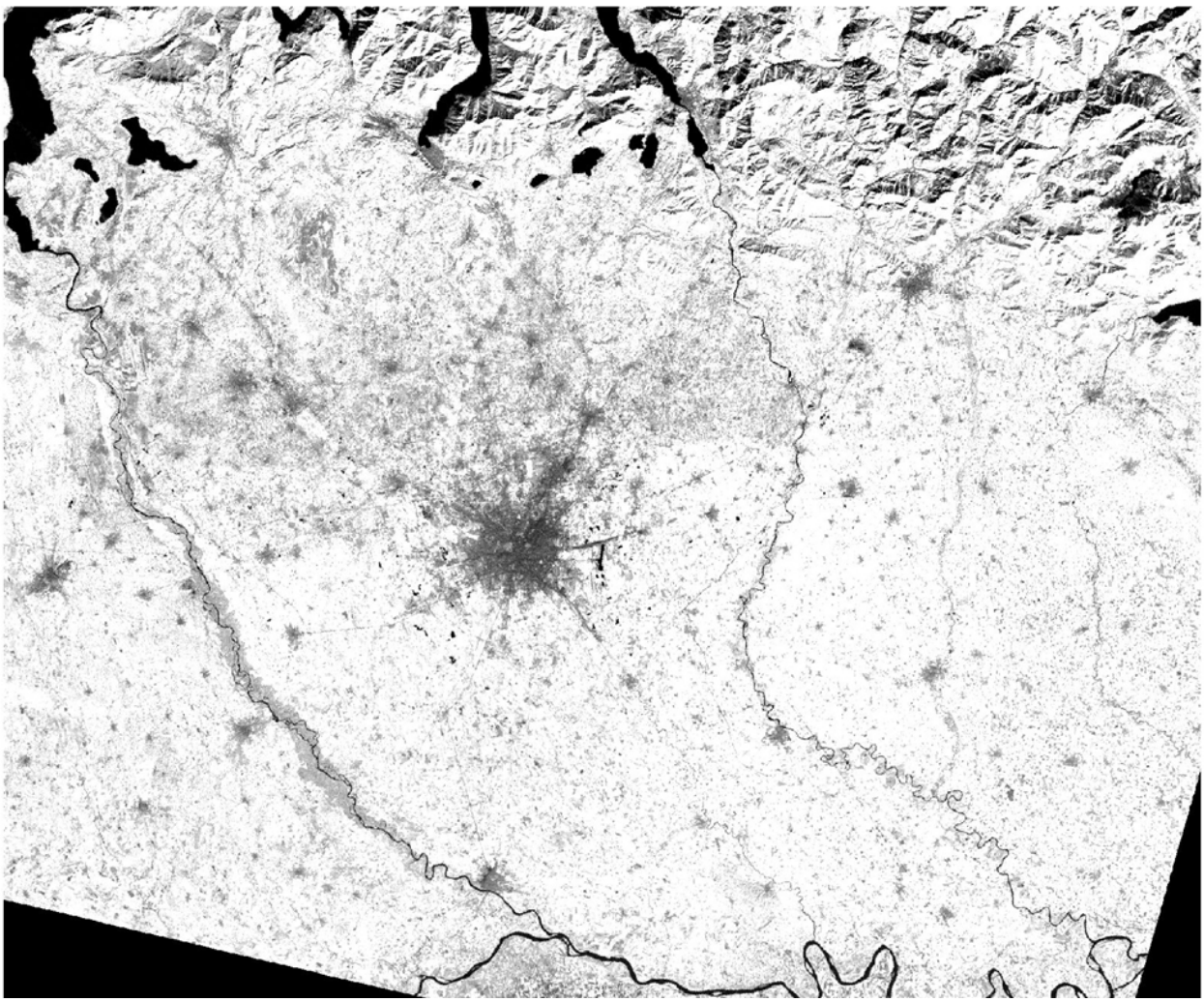

Figure 4 - 1972 satellite image (source Global Land Cover Facility)

The situation in 2001 is very different (Figure 3): a stratum of urbanisation 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 physiognomy outside Milan, while the bordering provinces have been incorporated in the strongly urbanised and enlarged urban region.

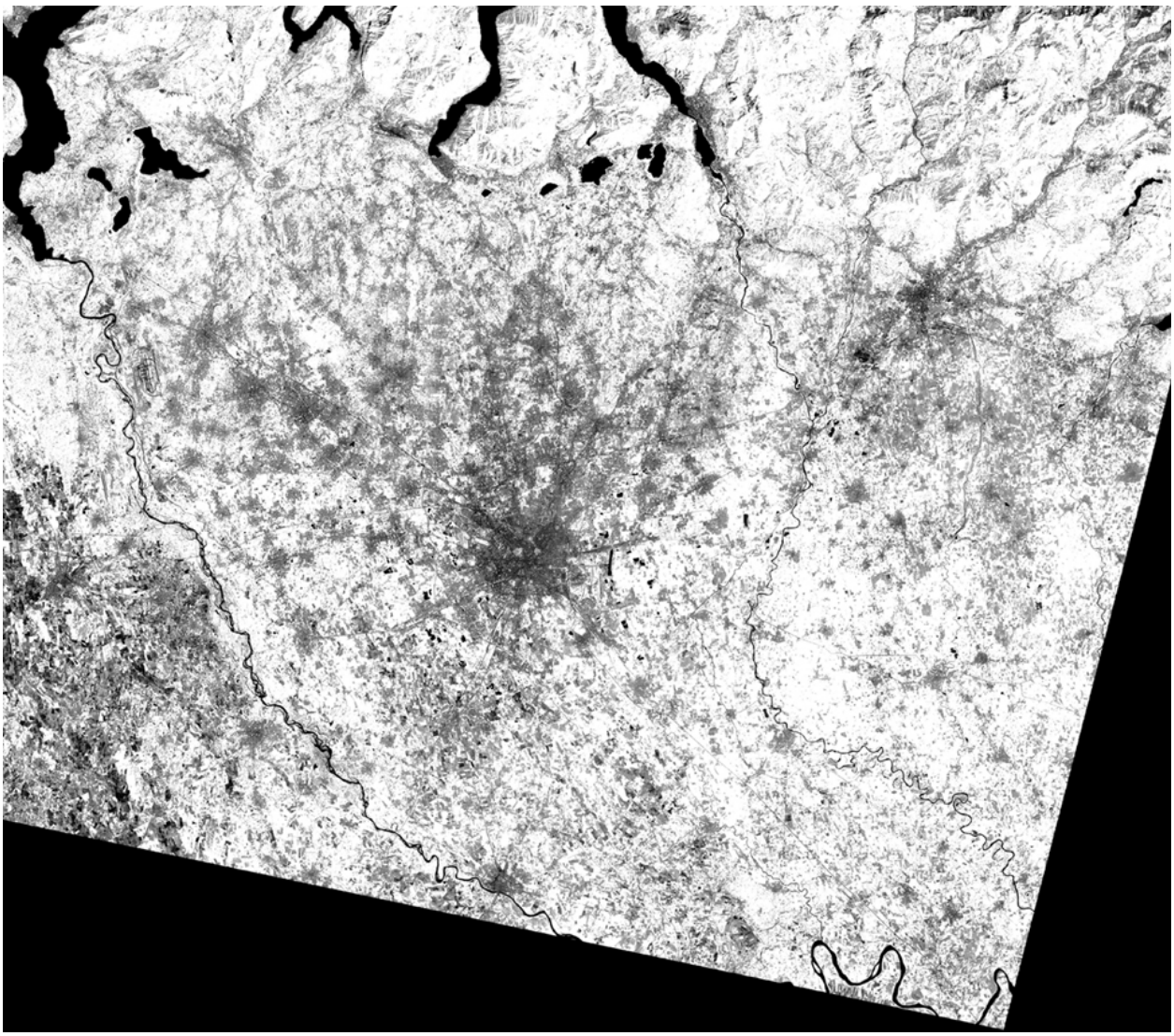

Figure 5 - 2001 satellite image (source Global Land Cover Facility)

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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 dramatic consequences of this pattern of development. First of all in terms of land consumption. The Murbandy / Moland (Monitoring Urban Dynamics / Monitoring Land Use Changes) project, carried out by the European Environment Agency (EEA) and the Directorate General Joint Research Centre (DG JRC) of the European Commission (EC), shows the spatial evolution of 25 European urban areas during the last 50 years. (Lavalle et al. 2002). From 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. (tables 5 and figure 6)

Table 5: Loss of agricultural and natural land due to urban sprawl from 1956 to 1998

	Total area: Km^2	Total urbanised area: Km^2		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

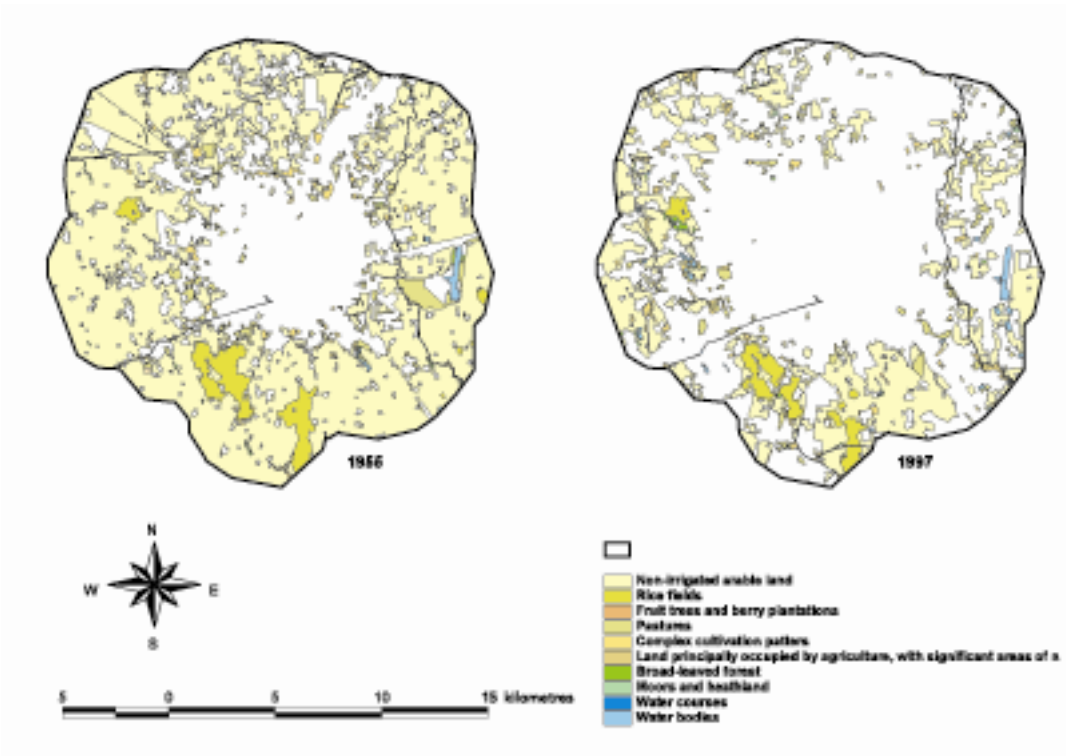


Figure 6. Loss of agricultural and natural land due to urban sprawl from 1956 (left) to 1997 (right)
(only natural and agricultural areas are depicted)

More recent data on building permits released by municipalities show that soil loss trends 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.[3]

Secondly the air pollution linked to the increase in mobility is nowadays extremely serious: just to cite few data, in 2005 the Milan area recorded 137 days above the maximum threshold of PM10 (polluting micromolecular particles), against a maximum 35 days per year limit established by the European Union[4]. Similarly we record 829 peaks above the threshold established for the Ozone emissions.[5] 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 houses. Recent studies show that there is a need of 55.000 affordable housing today and that in the near future (period 2006-2015) 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 has a travelling time comprised 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 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 forms of traffic congestion, increased consumption of land and high levels of air pollution.

[3] Source Italian National Statistical Office – Istat.
[4] Source: "Rapporto sulla qualità dell'aria di Milano e Provincia - anno 2005" Arpalombardia 2006.
[5] Source RSA Provincia di Milano 2005.

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 the 22,8% of the city's population is more than 65 years old, one of the highest in Europe.

Table 6 – 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
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

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 in its composition and its distribution across the urban region: the resident population of the core city is aging, with a limited replacement by the young living outside but working in the city, while 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 a financial return higher than any equity in the stock exchange, indicating indirectly that living in Milan continues to be somehow attracting.

2. QUALITY OF LIFE

This deep transformation of the structure and form of the city region 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 that of the beginning of the XX century, while 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 last years this issue has gathered the greatest attention in political and economic circles and the lack of adequate infrastructures, in terms of roads and public transport, is almost unanimously recognised. Local authorities seem now to realize it while trying to gather funding and consensus, two problems not easy to solve together and at the same time.

The second issue is 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 catchments 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 order in it.

A third important issue is that of *the quality of life*. It is widely recognised that over the last twenty 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 its liveability. Of course there is a 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 inadequate public and private transport. 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 hesitant in addressing it with robust policies. Only recently the Provincial government, which in the administrative structure of local government is a rather weak actor, 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 the Province in this project proposes six different meanings of liveability covering various aspects of what is nowadays considered critical in Milan (Provincia di Milano 2007) :
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.

To these six aspects contained in the original version of the strategic project, in the light of the current local political debate we hold necessary to add two further meanings of liveability:
⑦ **SAFETY**. Freedom of moving around without risk or perception of risk; absence of fear of being assaulted or robbed; safe driving, cycling and walking.
⑧ **GOVERNANCE**. Access public decisions; perception of democratic decision-making.

If we consider all these aspects of liveability, reflecting upon the changing 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; for **SAFETY**, due to the breaking of traditional social linkages and to the huge immigration of poor extra-Europeans; for **GOVERNANCE** due to the crisis of political parties which in the past channelled the social demand. A suspended judgement has to 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.

3. EMPIRICAL ANALYSIS

There is a growing literature on the determinants of subjective well-being, which usually includes wealth or income, health status, marital conditions and education among their main determinants (Frey and Stutzer 2002, DiTella and McCulloch 2006). Subjective measures have been validated as good indicators of individual well being by psychologist, sociologists and more recently economists (Diener et al 1999). 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).[6] When conducting cross-countries comparisons, scholars have often addressed the so-called Easterlin paradox, i.e. the finding of similar level of happiness in poor and rich countries (Easterlin 1974). The absence of strong links between (average) level of income per capita and (average) level of happiness has been rationalised by decreasing marginal utility of income, adaptive aspirations, interpersonal comparisons of well-being and endogenous (culturally determined) preferences (Layard 1980 and 2006). While accepting that "money does not buy happiness", nevertheless cross-country comparison reveal 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).

The relationship between happiness and socio-economic status has often neglected (mainly because lack of data) information about local amenities such as climate, environmental and urban conditions. When these data are available, they prove that location-specific factors (like excess noise levels, air pollution and climate) have a direct impact on life satisfaction (Brereton et al. 2006).

In this section we confront the proposed notion of quality of life with people perceptions. We make use of a new dataset, the "Quality of Life Survey", which has been conducted in ten metropolitan areas in the world, including Milan.[7] 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, includes standard demographic information about gender, age, educational attainment, self-assessed income position, occupation, marital status and religion. The survey asks opinions about the interviewees' perceptions of different aspects of city life: economy, culture and education, welfare, safety, environment, city administration and community life. On top of this, three questions were concerned with health status, pride of living in the city and happiness perception.

From each city included in the project, the data collectors interviewed a sample of approximately one thousand individuals, aged 18 or older. The descriptive statistics of some demographics are reported in table 7 and 8, where we provide information over the distribution of educational attainments, income status and some occupational categories. While prima facie we do not observe significant sample distortions over gender and age, nevertheless these cities are quite different in terms of educational attainments. While more than half of the population attain 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.

[6] 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. For this reason, in the sequel we just speak of correlations.

[7] The sample includes Seoul, New York City, Toronto, London, Paris, Berlin, Milan, Tokyo, Beijing and Stockholm.

Table 7 – 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*	*10014*

Source: our elaboration from GMFS survey (2006)

Table 8 – Descriptive statistics – Income status, occupation and unemployment rate - percentage

	very low income	low income	middle income	high income	very high income	profess ionals	white collars	blue collars (manual+ skilled)	self-employed	house wife	unemploy ment 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)

Unfortunately, the survey does not collect information about income levels. The distribution of educational attainment is only suggestive of the actual income distribution, since the return to education may vary across countries according to labour market institutions (like minimum wages, wage compression, bargaining coverage). However, if the subjective assessment may be of any significance (and we are quite dubious about it, since the question was asked in relative terms), we notice from table 8 that income poverty (both in terms of income level and unemployment risk) is highest in Beijing and London and lowest in Tokyo.[8] There are clearly unavoidable cultural differences between countries, as witnessed by women participation to the labour market: the fraction of women self-declaring as housewife is as high as 30% in Seoul or Tokyo, as well as nil in Stockholm.

[8] We are 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 facts, when we restrict the age interval to 30-50 it declines to 10.4% (the sample average also declining to 7.51).

It is therefore impossible to compare direct answers to questions about happiness and pride, because they will be distorted by cultural biases in perceptions. However we can reduce the problem, by using individual information as controls. As long as richer people are typically happier, by netting out the effect of individual (self-assessed) income position we reduce the differences across cities, which could be generated by spurious correlations. 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.

Having said all that, our aim in this section is twofold. On one side 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 by-product of the second analysis, we show that individual city fixed effects may have some interpretation, and speculate about them.

3.1 Measuring the quality of life

We exploit direct answers to specific questions to make operational our declination of the quality of life. In order to reduce the number of variables, we have submitted the original variables to factor analysis (principal component method – see table 96).

The first factor (RESIDING) collects information about the cost of living and tourist attractiveness (mixed with pride of showing-off with visitors). It bears both the implications of costs and benefits of living in a specific area, because both variables are positively correlated with the extracted factor.

The second factor (MOVING) put together information about ease of mobility and quality of the environment. However, according to how the questions are formulated, water and air pollution should obtain an opposite sign, which does not occur in the data.[9]

The other factors are in line with our theoretical expectations. SPACE and CULTURE report positive correlation among the underlying variables, as well as WELFARE. In all cases a single latent variable accounts for half of the actual opinion expressed by the interviewees.

The questionnaire did not contain as many information as we would have liked in order to assess the innovative capacity. We were able only to identify one question about availability of jobs, and we use it as a proxy for this factor. Finally, we had information about SAFETY and quality of GOVERNANCE, which were summarised by two corresponding factors.

[9] There is a subtle difference between question 5.1 (asking about an actual behaviour) and question 5.2 (asking about an opinion). In principle the answers could be positively correlated (even if they are not in the data: Spearman rank correlation is 0.10), because an interviewee with a strong ecologist bias would be happy to drink unpolluted publicly provided water, while still worried about the quality of the air.

Table 9 – Description of QUALITY OF LIFE indicators

Quality of life factors	Original questions	Factor loading 1st principal component	Proportion of original variance explained 1st principal compnt
① **RESIDING**	1-2. The price of living in my city is high. 2-2. There are many things in my city that I can proudly introduce to visitors.	0.7888 0.7888	0.6222
② **MOVING AND BREATHING**	5-1. I feel safe when I drink publicly provided water. 5-2. Air pollution is a serious problem in my city. 6-1. It is convenient to use public transportation e.g., subways, trains, or buses. in my city.	0.7225 0.2163 0.7855	0.3952
③ **SPACES SHARING**	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. 6-3. I can easily walk to buy groceries at shops in my neighbourhood or within walking distance to the place that I live. 8-1. I try to have my friends or neighbours come over to my home as frequently as possible.	0.7748 0.7307 0.5738	0.4878
④ **MAKING CULTURE AND USING IT**	2-1. My city allows easy access to culture and leisure facilities 2-3. I am satisfied with the quality of education in my city. 3-2. My city is a good place to rear and care for children.	0.6226 0.7338 0.7386	0.4906
⑤ **PROMOTING A NEW LOCAL WELFARE**	3-1. In times of personal or family crisis, I can turn to the city's public institutions and facilities for help. 3-3. My city has many facilities for the socially disadvantaged people such as the old, the handicapped, and the poor. 3-4. I am satisfied with the quality of health care in my city. 8-2. There are many opportunities for volunteer activities in my city.	0.7069 0.7446 0.7421 0.5539	0.4779
⑥ **INNOVATING AND MAKING ENTERPRISE**	1-1. There are plenty of job opportunities in my city.	-	-
⑦ **SAFETY**	4-1. I feel safe walking around the city at night. 4-2. I feel safe from the danger of various accidents such as car accidents, fires, and building collapses.	0.8144 0.8144	0.6632
⑧ **GOVERNANCE**	7-2. The city government does a good job addressing citizen concerns and requests. 7-3. The city administration is transparent.	0.8827 0.8827	0.7791

The mean scores by city are reported in table 10, while the city ranking according to the same values are reported in table 11.[10] Milan ranks lowest in SAFETY and quite low in MOVING and CULTURE, while reporting positive values for INNOVATION and WELFARE factors. These ranking do not come as a surprise, since we have already mentioned the problem of commuting and traffic congestion, which make a city less liveable, also in terms of pleasant and safe circulation. The survey rightly addresses the perception of Milanese pride of being the economic capital of the country, even when we notice that the city ranks very low on cultural ground. We would have expected a higher score on the WELFARE dimension, since Milan is also perceived as rich in terms of social capital (for example, it has been made seat of the national authority for NGOs); in addition, the Lombard health services are highly rated in the country. Effectively Milan gets a positive value on this dimension (by construction, extracted components have zero mean), but still there are other cities in a better position.

[10] In factor analysis we cannot control for city-specific effects (like 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.

Table 10 - Factor scores by city (ordered by average of ranking)

area	residing	moving	space	culture	welfare	innov	safety	govern	happiness	pride
Stockholm	0.518	0.519	0.588	0.418	-0.041	0.286	0.373	0.17	1.203	1.006
Paris	0.515	0.436	0.214	0.437	0.551	0.092	-0.024	0.149	0.955	0.973
London	0.424	-0.118	0.056	0.118	0.2	0.444	0.281	-0.071	1.068	1.06
New York	0.52	0.113	0.164	-0.144	-0.001	-0.139	0.239	0.093	1.132	1.32
Berlin	-0.034	0.549	0.462	-0.028	0.176	-0.064	0.037	-0.074	0.917	0.739
Toronto	0.134	-0.041	-0.083	0.203	0.153	-0.033	0.202	-0.077	1.199	1.201
Milan	**0.19**	**-0.279**	**-0.012**	**-0.298**	**0.122**	**-0.023**	**-0.715**	**-0.002**	**0.781**	**0.862**
Beijing	-0.269	0.014	-0.112	0.113	-0.075	-0.203	0.03	0.001	0.71	0.801
Tokyo	-1.301	-0.469	-0.253	-0.156	-0.245	-0.201	0.157	0.077	0.761	0.535
Seoul	-0.701	-0.719	-1.023	-0.658	-0.839	-0.158	-0.568	-0.265	0.546	0.22

Table 11 – Ranks of cities according to each factor scores

area	residing	moving	space	culture	welfare	innov	safety	govern	average	happiness	pride
Stockholm	2	2	1	2	7	2	1	1	2.3	1	4
Paris	3	3	3	1	1	3	8	2	3.0	5	5
London	4	7	5	4	2	1	2	7	4.0	4	3
New York	1	4	4	7	6	7	3	3	4.4	3	1
Berlin	7	1	2	6	3	6	6	8	4.9	6	8
Toronto	6	6	7	3	4	5	4	9	5.5	2	2
Milan	**5**	**8**	**6**	**9**	**5**	**4**	**10**	**6**	6.6	**7**	**6**
Beijing	8	5	8	5	8	10	7	5	7.0	9	7
Tokyo	10	9	9	8	9	9	5	4	7.9	8	9
Seoul	9	10	10	10	10	8	9	10	9.5	10	10

We now move to a standard analysis of happiness determinants. We start by noticing that the perception of the Milanese sample is lower in both happiness and pride.[11] In figure 7 and 8 we plot the unconditional and conditional probability scores associated to an ordered probit model predicting the answers to the questions about happiness perception and pride of living in a given city (the coefficients and confidence intervals are in table A.1 in Appendix 1). Living in Milan is associated to a dim perspective, as in the other Asian cities of the sample. On the contrary, North-American cities are associated to higher level of self-declared happiness. Milan scores a bit higher when considering pride of living in a specific city, but the ranking between the two measures are rather similar. If we take the differences between the two measures (see figure 9) we notice a peculiar phenomenon: Milan citizens (jointly with Beijing) are prouder than happier of living in their cities.[12]

This seems in line with previous observations. People would be willing to live in the inner city because of the available opportunities (in terms of jobs, leisure, social relationship), and therefore would be proud of their "dream". At the same time they would be less and less capable to afford it, and the quality of their life would be declining, due to commuting costs, traffic congestion and pollution. It looks like a double moral: publicly, Milan has to be defended and declared a city worth being proud of; privately, costs exceed benefits. This is even truer for New Yorkers.

[11] In order to analyse the answers to the questionnaire, we have recoded each item by assigning –2 to "strongly disagree", -1 to "disagree", 0 to "neither disagree nor agree", "don't know" and "refusal", +1 to "agree" and +2 to "strongly agree". 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 happiness and pride have been recoded in order to assign positive values to positive assessments, and negative values to negative ones, with zero values to neutral judgments.

[12] This result is true irrespectively on whether we consider unconditional means (columns 1 and 3 of table A.1) or whether we include available controls related to gender, age, marital status, education, occupation, income position, health and religion (columns 2 and 4 of table A.1).

Figure 7 – City ranking – Happiness ("How happy are you now?")

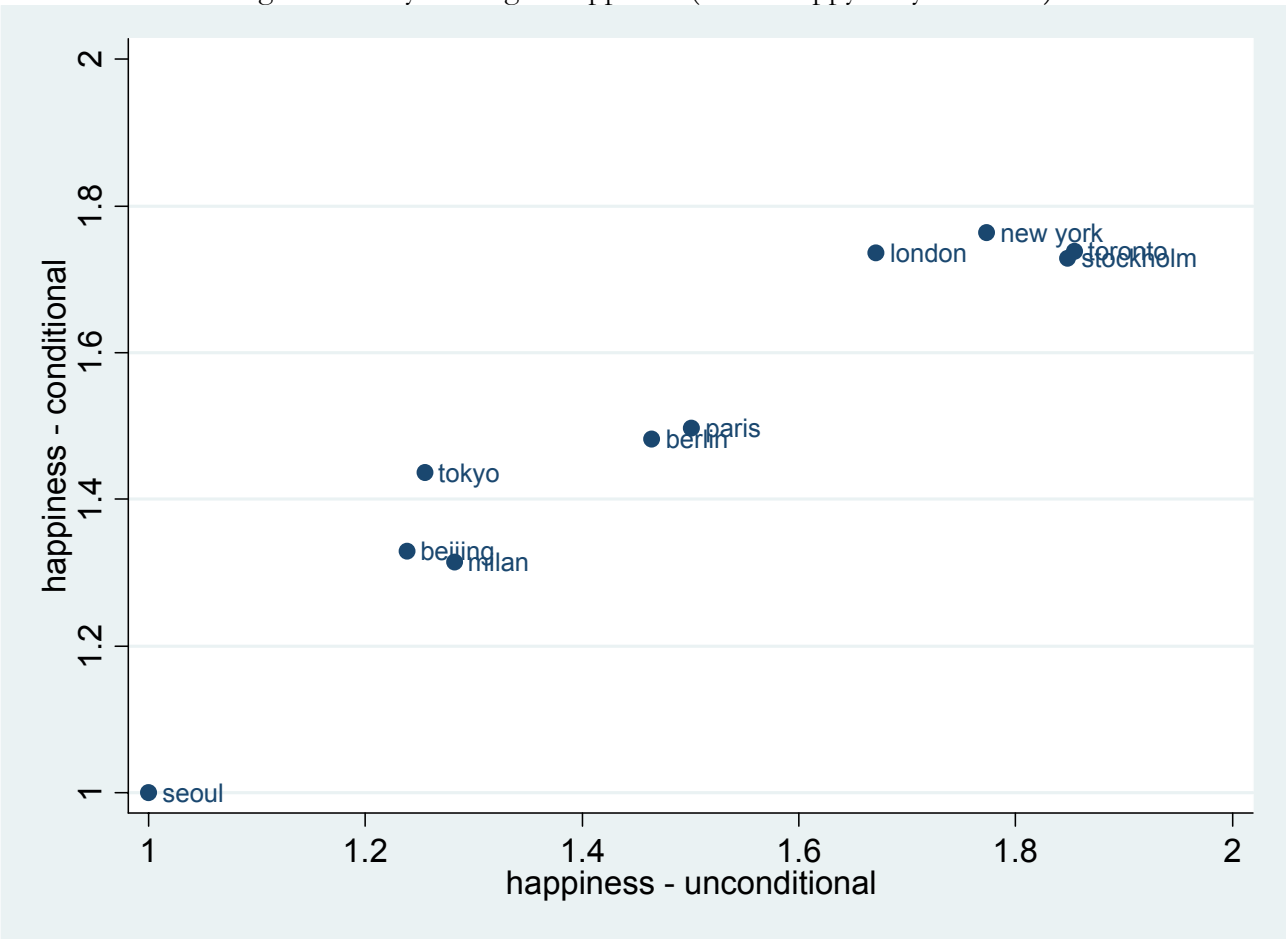


Figure 8 – City ranking – Pride ("How proud are you of residing in the city?")

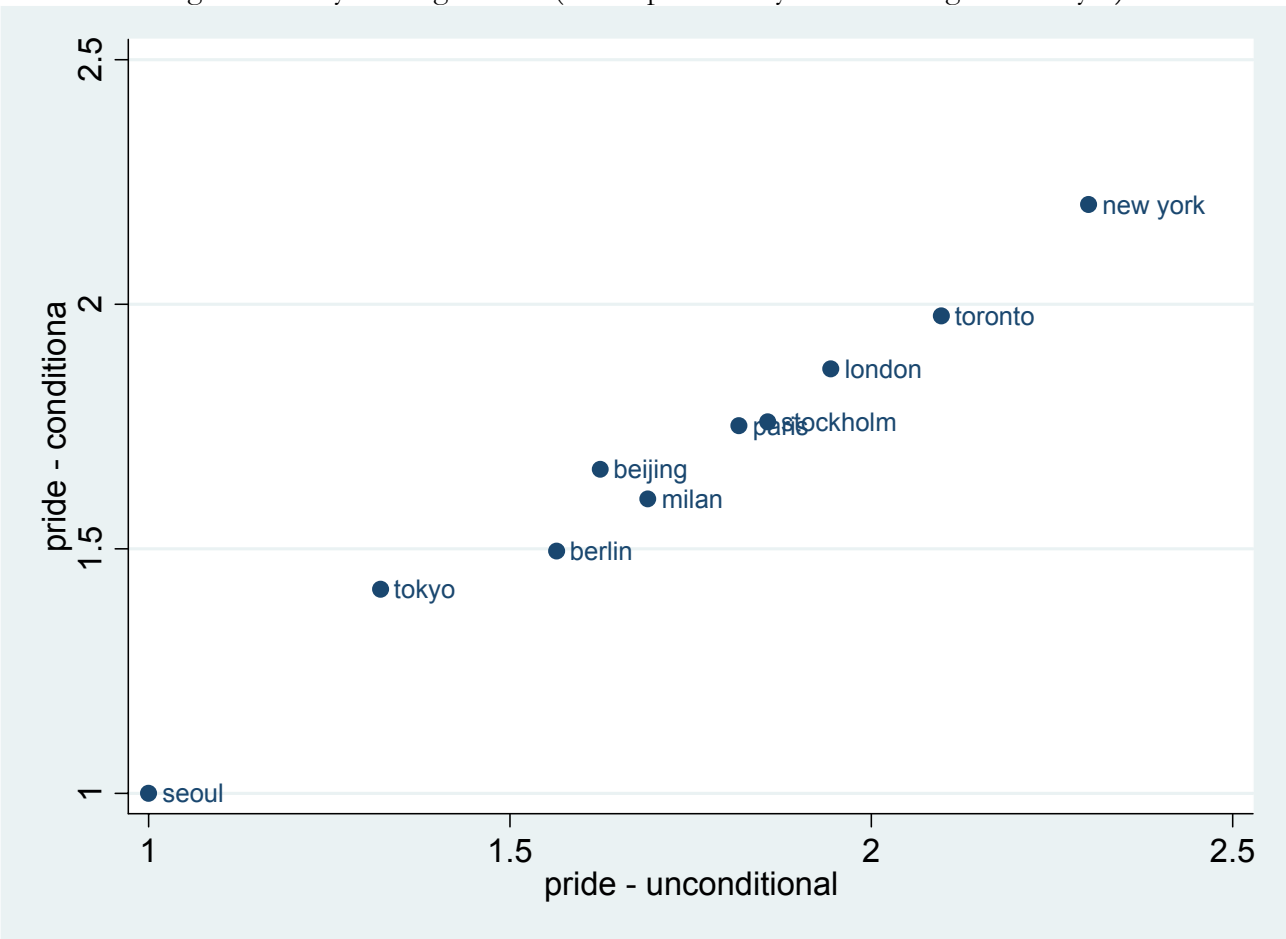
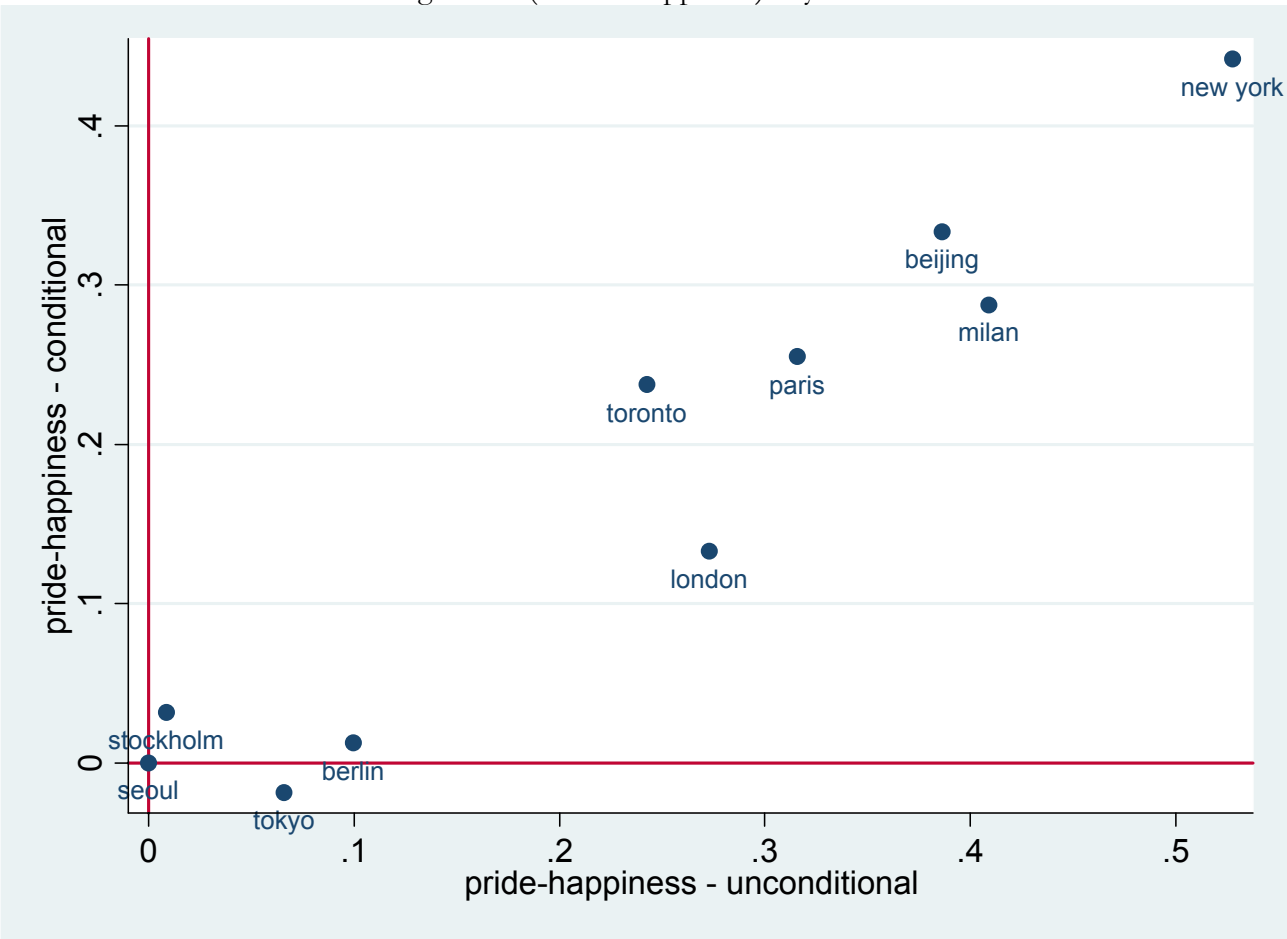


Figure 9 – (Pride – happiness) city effect



We jointly consider the determinants of happiness and pride, given the different distributions of these variables. We start with the usual individual determinants (see tables A.2 and A.3 in the Appendix 1 – comments are referred to the ordered probit estimates, reported in columns 4 to 6 of both tables). As already found in the literature, women are happier (and prouder) than men, while marital single are dissatisfied. Happiness is increasing in income position and health status, while non-linearly related with education. On the contrary, pride is unrelated to educational attainment or high-income position, whereas 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.

When we introduce our measures describing the quality of life (column 5 in tables A.2 and A.3), we find that RESIDING, SPACE, CULTURE, INNOVATION and GOVERNANCE are positively correlated with citizens' happiness, while all factors but INNOVATION and MOVING are correlated with pride. While we find it reasonable that everything else constant, happiness is uncorrelated with MOVING and SAFETY, we are surprised by the negative sign attracted by WELFARE, since we would have expected that experiencing social and/or friendship networks should make people happier (as in Frey and Stutzer 2002). This raises doubts about our proxy for the welfare dimension. However it should capture both the availability of public services and the strength of personal ties (see table 9).[13]

Our statistical model implicitly assumes a unique pattern of well-being generation across countries. This unique model fits well the data for Paris, Berlin, Milan and Beijing (which are undistinguishable from

[13] When we analyse the correlations among our proxies for the quality of life, we find low values, which suggest that they are actually capturing different dimensions of cities' life quality. For example, the WELFARE dimension has the highest correlations with CULTURE (0.49) and GOVERNANCE (0.38), and the lowest with RESIDING (0.25) and SAFETY (0.24). Thus we cannot invoke multicollinearity as one potential explanation of this odd sign.

Seoul, the reference case), as witnessed by the final column where we add area controls to check whether there are local specificities still affecting happiness or pride due to unobservable characteristics. For the remaining areas there is still a positive unexplained residual. Going to pride generation, a unique model fits well for Paris, Berlin and Stockholm (undistinguishable from Seoul) only. In this case, notice that Milan has an extra spurt of pride unaccounted by the data on observable characteristics.

However a unique worldwide model of generating happiness or pride may result into a too strong assumption, given cultural diversities across countries. For this reason, in tables 12 and 13 we report our main results, showing the correlations between the QUALITY OF LIFE factors and happiness on one side and pride on the other, by metropolitan areas. We notice that citizens' happiness seems rather independent from the quality of life, the unique factor affecting people perception in almost all cities being the SPACE and the CULTURE factors, while MOVING (which incorporates judgments about air/water pollution and assessment of public transports) is significant only in half of the occurrences. In the case of Milan, people are happier when the perceived quality of the urban space availability and the cultural opportunities are high, as well as when jobs prospects are optimistic.

Table 12 – Happiness and quality of life

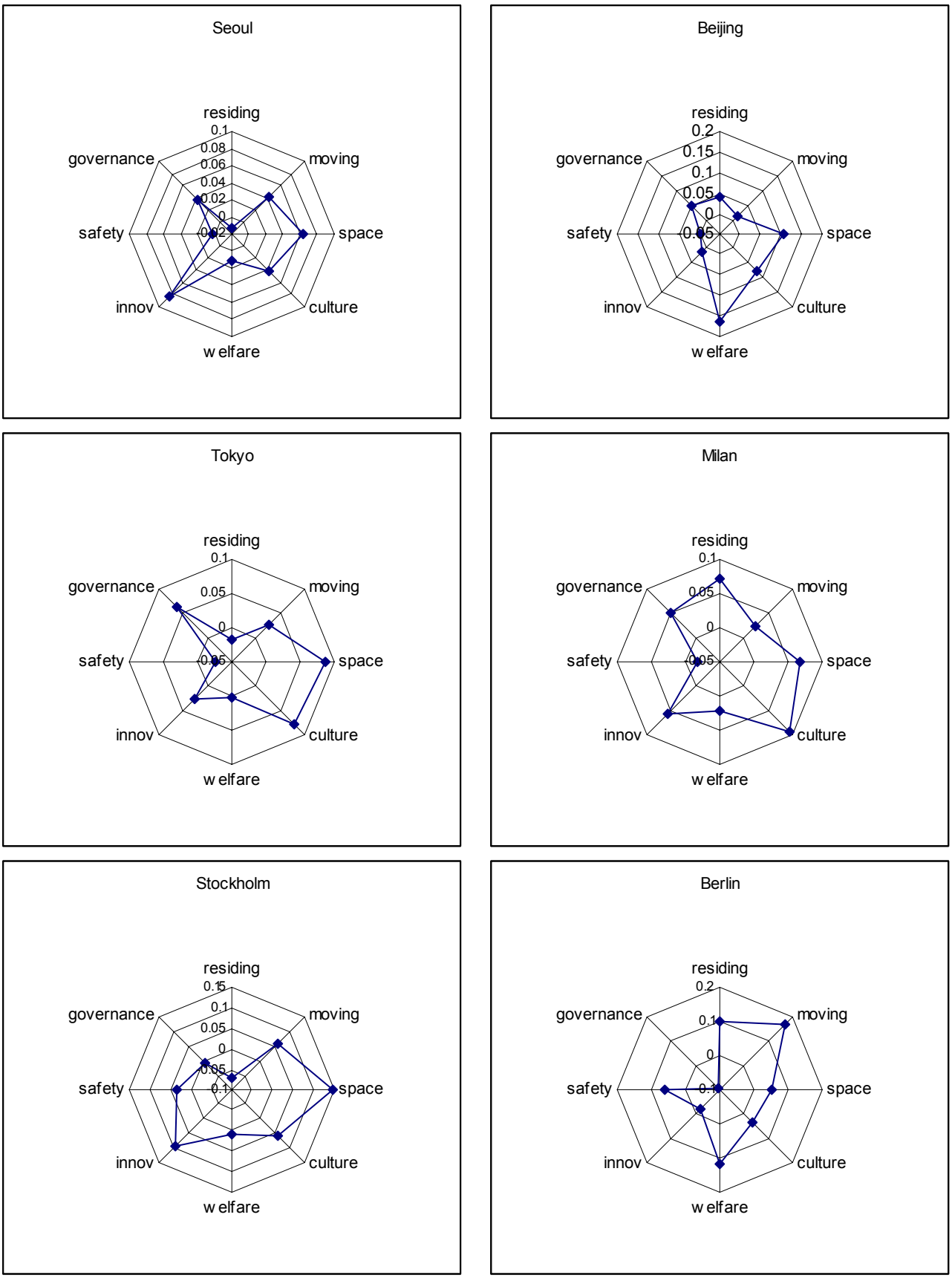
	Seoul	Beijing	Tokyo	**Milan**	Stockholm	Berlin	London	Paris	New York	Toronto
RESIDING	-0.013	0.042	-0.018	**0.071**	-0.072	0.102	0.074	-0.024	-0.053	0.009
	[0.37]	[1.07]	[0.71]	**[1.52]**	[2.02]**	[3.51]***	[1.45]	[0.45]	[1.61]	[0.23]
MOVING	0.04	0.012	0.029	**0.024**	0.06	0.17	0.161	0.094	0.063	-0.028
	[1.21]	[0.29]	[1.05]	**[0.86]**	[1.67]*	[4.04]***	[4.78]***	[2.21]**	[1.84]*	[0.81]
SPACE	0.063	0.107	0.087	**0.067**	0.148	0.05	0.007	0.081	0.047	0.052
	[2.06]**	[2.66]***	[2.70]***	**[2.01]****	[4.55]***	[1.30]	[0.19]	[2.29]**	[1.45]	[1.67]*
CULTURE	0.04	0.078	0.081	**0.094**	0.059	0.034	0.019	0.056	-0.021	0.164
	[1.12]	[1.95]*	[2.29]**	**[2.77]*****	[1.68]*	[0.83]	[0.49]	[1.73]*	[0.54]	[3.94]***
WELFARE	0.012	0.162	0.003	**0.022**	0.008	0.116	0.062	0.037	0.041	0.028
	[0.41]	[3.64]***	[0.08]	**[0.55]**	[0.22]	[2.44]**	[1.50]	[1.01]	[0.98]	[0.74]
INNOV	0.085	0.011	0.028	**0.056**	0.096	-0.022	0.253	0.029	0.059	0.056
	[2.88]***	[0.32]	[0.93]	**[1.72]***	[3.28]***	[0.86]	[5.33]***	[1.03]	[1.85]*	[1.69]*
SAFETY	0.003	-0.002	-0.027	**-0.018**	0.034	0.06	-0.002	0.001	-0.028	0.025
	[0.10]	[0.04]	[0.99]	**[0.55]**	[1.19]	[1.74]*	[0.05]	[0.05]	[0.76]	[0.75]
GOVERNANCE	0.038	0.047	0.064	**0.049**	-0.004	-0.091	0.008	-0.044	0.064	-0.014
	[1.06]	[1.25]	[1.73]*	**[1.53]**	[0.13]	[2.63]***	[0.24]	[1.55]	[1.88]*	[0.45]
Observations	914	959	978	**934**	973	901	823	892	843	910
R-squared	0.3	0.26	0.35	**0.17**	0.36	0.32	0.4	0.26	0.24	0.2
Log likelihood	-922.22	-1243.04	-1010.82	**-1102.25**	-979.36	-1003.4	-892.31	-989.36	-1021.32	-1062.24

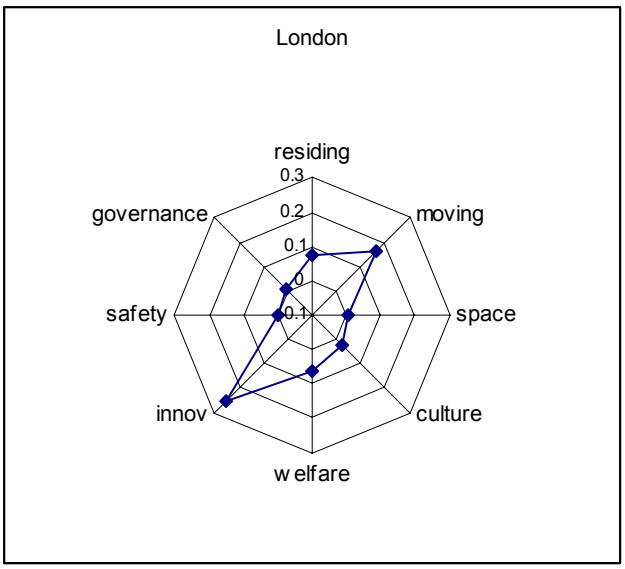
Ordinary least squares - Robust t statistics in brackets - * significant at 10%; ** significant at 5%; *** significant at 1%
Controls include gender, age, education, employment, income, health, marital status, religion

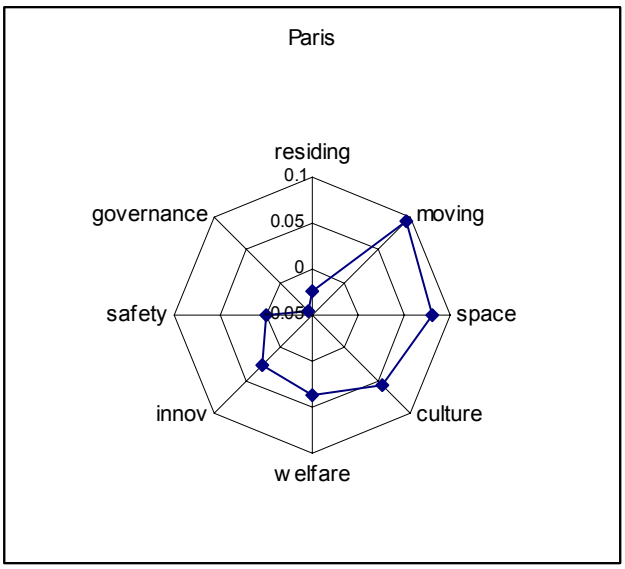
We may say that there are different patterns of the relationship between happiness and quality of urban life, as we propose to measure it. In figure 10 we show the estimated coefficients by city, in search for modal patterns. Despite we expected to find continental models of happiness determinants, we do not find strong similarities among Asian cities (Seoul, Beijing and Tokyo) nor among continental European cities (Milan, Stockholm, Berlin or Paris).

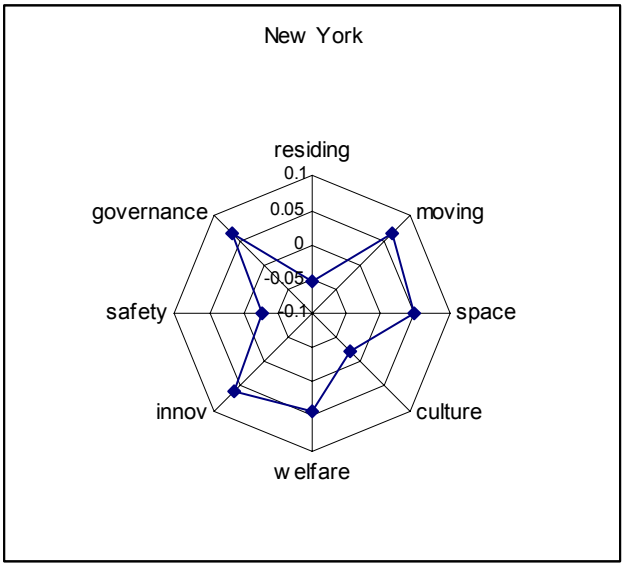
When considering city pride (table 13) we notice that it is more significantly affected by the quality of life factors, especially by RESIDING, MOVING, SPACE and CULTURE provision. WELFARE, INNOVATION AND SAFETY seem almost irrelevant in shaping city pride, while the quality of GOVERNANCE matters for both Asian and continental Europe cities. There seem to be more homogeneity in determination of pride than of happiness, which in principle is a good news for city governors, because they (should) know what to do in order to raise local pride.

Figure 10 – Estimated impact of the quality of life onto happiness – see table 12









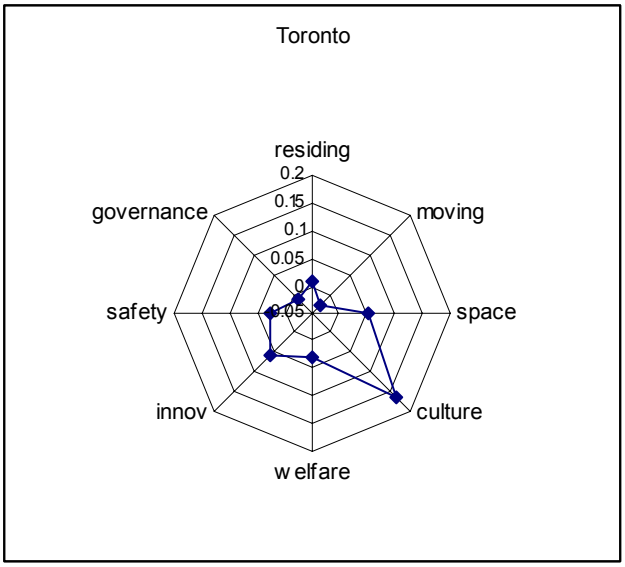


Table 13 – Pride and quality of life

	Seoul	Beijing	Tokyo	**Milan**	Stockholm	Berlin	London	Paris	New York	Toronto
RESIDING	0.065	0.125	0.126	**0.288**	0.108	0.139	0.193	0.113	-0.002	0.116
	[1.72]*	[3.22]***	[4.50]***	**[5.42]*** **	[2.51]**	[3.69]***	[4.25]***	[2.10]**	[0.05]	[2.82]***
MOVING	0.102	0.115	0.089	**0.075**	0.008	0.058	0.124	-0.067	0.069	-0.032
	[2.77]***	[2.85]***	[2.93]***	**[2.36]** **	[0.19]	[1.19]	[3.02]***	[1.74]*	[1.76]*	[0.88]
SPACE	0.091	0.025	0.067	**0.128**	0.113	0.092	0.273	0.109	0.095	0.069
	[2.64]***	[0.62]	[1.93]*	**[3.64]*** **	[2.92]***	[1.97]**	[6.36]***	[3.10]***	[2.58]**	[2.23]**
CULTURE	0.126	0.171	0.201	**0.213**	0.275	0.172	0.018	0.178	0.116	0.296
	[3.32]***	[4.03]***	[5.30]***	**[5.73]*** **	[6.94]***	[3.67]***	[0.47]	[4.14]***	[2.60]***	[6.78]***
WELFARE	0.013	0.007	0.003	**0.038**	-0.055	0.118	-0.002	0.087	0.032	-0.016
	[0.38]	[0.17]	[0.07]	**[0.87]**	[1.34]	[2.09]**	[0.04]	[2.19]**	[0.78]	[0.36]
INNOV	0.094	-0.028	-0.006	**0.00**	0.026	-0.038	0.043	0.006	-0.022	-0.038
	[2.88]***	[0.87]	[0.18]	**[0.00]**	[0.80]	[1.15]	[0.77]	[0.19]	[0.67]	[1.13]
SAFETY	0.001	0.118	0.021	**0.011**	0.086	-0.003	0.082	0.024	0.051	0.045
	[0.03]	[3.13]***	[0.70]	**[0.31]**	[2.60]***	[0.07]	[2.09]**	[0.82]	[1.25]	[1.41]
GOVERNANCE	0.141	0.148	0.142	**0.128**	0.135	0.074	-0.046	0.121	0.041	0.048
	[3.10]***	[4.01]***	[3.83]***	**[3.88]*** **	[3.25]***	[1.62]	[1.00]	[3.71]***	[1.25]	[1.40]
Observations	894	958	978	**930**	971	895	831	887	838	910
R-squared	0.23	0.24	0.28	**0.27**	0.22	0.26	0.39	0.25	0.23	0.22
Log likelihood	-969.91	-1205.25	-1110.47	**-1161.62**	-1155.77	-1169.91	-986.97	-1035.02	-1027.95	-1045.35

Ordinary least squares - Robust t statistics in brackets - * significant at 10%; ** significant at 5%; *** significant at 1%
Controls include gender, age, education, employment, income, health, marital status, religion

4. CONCLUDING REMARKS

Milan inhabitants have been significantly affected by recent urban transformations, that have forced a large fraction of them do adapt to different life-styles, living across the urban region and working downtown. We link these changes to the lower level of happiness expressed in an international survey when compared to other metropolitan cities. We have decomposed the notion of "quality of city life" into several dimensions, and we have made them operational starting from people opinions expressed in the same survey (table 9). According to them, Stockholm and Toronto obtains the highest scores in terms of quality of life, while Asian cities (Seoul, Beijing and Tokyo) score lowest. Once we correlate these measures of quality of life to self-assessed well-being, we find that SPACE and CULTURE are the unique factors consistently affecting happiness across countries. In addition to these two, also RESIDING and MOVING, factors are the most robust determinants of pride across cities. It seems therefore as if there were two distinct channels affecting individual perceptions. On one side the interviewees obtain greater well-being by taking advantage of the opportunities offered by urban life (shops, cultural events, leisure places). On the other side, the pride seems associated to residential accommodation, quality of public transport and air pollution.

When focussing on the Milan case, the latter seems dominant with respect to the former, since the pride dimension exceed the happiness dimension in international comparison (see figure 9). Milanese citizens seem to combine two conflicting perceptions: on one side they are proud of being in Milan, because the city offers better job prospects and pays higher wages; on the other side, they are still less happy than they could have been (when compared to other cities), and we read it as an implicit desire for a better quality of life. From our point of view this could explain the ambivalent position of public opinion and political actors towards policies to address the various dimensions of the quality of life. Milan's citizens seem to be indifferent about the housing prices, the environmental conditions, traffic congestion, deterioration of public space (at least in terms of their contribution to individual happiness), but at the same time they are proud of the economic success of the city and of its vital cultural environment. Political actors are implicitly or explicitly aware of this situation and therefore they do not address with robust measures major weaknesses in the quality of life because they fear that this could negatively affect the economic health of the city. The outcome is a situation in which policies remain timid 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 we can 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. This means that more audacious policies addressing various low-scoring dimensions of the quality of urban life could result in citizens still proud but happier.

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Appendix 1 – Additional tables

Table A.1 – City ranking in terms of happiness and pride – ordered probit

	1 unconditional happiness	2 conditional happiness	3 unconditional pride	4 conditional pride
Seoul	1	1	1	1
	ref.case	ref.case	ref.case	ref.case
New York	1.773	1.763	2.301	2.205
	[36.42]***	[30.09]***	[45.19]***	[36.15]***
Toronto	1.854	1.738	2.097	1.976
	[39.24]***	[34.52]***	[47.36]***	[43.14]***
London	1.671	1.736	1.944	1.869
	[36.06]***	[34.96]***	[40.74]***	[45.76]***
Paris	1.501	1.497	1.817	1.752
	[34.69]***	[39.35]***	[42.24]***	[41.55]***
Berlin	1.464	1.483	1.564	1.495
	[32.92]***	[35.17]***	[35.29]***	[48.36]***
Milan	1.282	1.314	1.691	1.602
	[31.32]***	[47.29]***	[39.44]***	[43.29]***
Tokyo	1.255	1.436	1.321	1.418
	[30.80]***	[60.83]***	[34.51]***	[41.49]***
Beijing	1.238	1.329	1.625	1.663
	[26.87]***	[32.20]***	[38.05]***	[30.94]***
Stockholm	1.848	1.729	1.857	1.76
	[40.40]***	[39.19]***	[43.16]***	[49.66]***
Observations	9906	9127	9886	9092
Log likelihood	-12056.7	-10309.8	-12649.5	-11248.4
Psuedo R^2	0.09	0.15	0.11	0.14

Robust z-statistics in brackets – error clustered by city
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: conditional includes gender, age and age squared, education, occupation, health, marital status, income position and religion

Table A.2 - Determinants of happiness

	1	2	3	4	5	6
	ols	ols	ols	oprobit	oprobit	oprobit
female	0.12	0.116	0.104	0.168	0.17	0.153
	[4.15]***	[4.23]***	[3.89]***	[4.19]***	[4.23]***	[4.07]***
age	-0.009	-0.007	-0.007	-0.011	-0.009	-0.009
	[1.43]	[1.18]	[1.14]	[1.27]	[1.05]	[1.04]
age squared	0	0	0	0	0	0
	[1.92]*	[1.60]	[1.43]	[1.71]*	[1.44]	[1.32]
education elementary school completed (6th grade)	-0.069	-0.04	-0.023	-0.147	-0.121	-0.098
	[0.70]	[0.45]	[0.30]	[1.09]	[1.02]	[0.95]
education junior high school completed (9th grade)	-0.225	-0.19	-0.19	-0.341	-0.318	-0.323
	[2.42]**	[2.29]**	[2.77]**	[2.65]***	[2.88]***	[3.59]***
education high school completed (12th grade)	-0.203	-0.134	-0.179	-0.304	-0.232	-0.301
	[2.13]*	[1.56]	[2.11]*	[2.42]**	[2.09]**	[2.69]***
education trade/vocational school completed	-0.198	-0.152	-0.191	-0.304	-0.265	-0.322
	[1.74]	[1.59]	[2.37]**	[1.87]*	[1.99]**	[2.95]***
education college/university student	-0.172	-0.08	-0.117	-0.265	-0.159	-0.219
	[1.62]	[0.97]	[1.41]	[1.83]*	[1.34]	[1.76]*
education college/university completed or above	-0.196	-0.122	-0.194	-0.303	-0.223	-0.334
	[2.16]*	[1.49]	[2.58]**	[2.39]**	[1.93]*	[3.01]***
occupation agriculture/fishery/forestry	0.119	0.106	0.064	0.115	0.107	0.037
	[1.48]	[1.69]	[0.94]	[0.77]	[0.89]	[0.26]
occupation self-employed	-0.052	-0.046	-0.111	-0.077	-0.071	-0.151
	[0.67]	[0.71]	[1.53]	[0.79]	[0.87]	[1.66]*
occupation office workers	0.005	-0.024	-0.059	-0.005	-0.046	-0.077
	[0.08]	[0.39]	[0.86]	[0.06]	[0.54]	[0.88]
occupation manual workers	-0.14	-0.151	-0.203	-0.173	-0.198	-0.266
	[1.78]	[2.00]*	[2.55]**	[1.86]*	[2.02]**	[2.54]**
occupation skilled workers	-0.007	-0.011	-0.091	-0.009	-0.016	-0.116
	[0.09]	[0.15]	[1.06]	[0.10]	[0.17]	[1.08]
occupation professional	-0.006	-0.024	-0.106	-0.019	-0.046	-0.154
	[0.09]	[0.33]	[1.34]	[0.23]	[0.49]	[1.56]
occupation sales	-0.021	0.008	-0.057	-0.028	0.012	-0.069
	[0.21]	[0.09]	[0.66]	[0.22]	[0.10]	[0.62]
occupation student	0.065	0.054	0.01	0.063	0.05	-0.001
	[0.76]	[0.62]	[0.12]	[0.56]	[0.41]	[0.01]
occupation housewife	-0.054	0.025	-0.026	-0.111	-0.003	-0.057
	[0.56]	[0.38]	[0.35]	[0.88]	[0.03]	[0.63]
occupation unemployed	-0.056	-0.064	-0.122	-0.06	-0.073	-0.146
	[0.64]	[0.77]	[1.28]	[0.57]	[0.72]	[1.26]
health very bad	-0.566	-0.502	-0.528	-0.569	-0.504	-0.542
	[3.26]***	[2.82]**	[3.16]**	[3.09]***	[2.56]**	[2.98]***
health bad	-0.365	-0.305	-0.31	-0.406	-0.339	-0.345
	[3.10]**	[2.61]**	[2.74]**	[3.18]***	[2.60]***	[2.71]***
health good	0.324	0.271	0.258	0.396	0.337	0.322
	[9.96]***	[10.20]***	[10.50]***	[11.02]***	[13.25]***	[10.71]***
health very good	0.639	0.524	0.507	0.891	0.763	0.744
	[14.33]***	[12.35]***	[12.36]***	[12.74]***	[12.22]***	[11.82]***
income very low income	-0.398	-0.354	-0.35	-0.446	-0.396	-0.394
	[4.74]***	[5.16]***	[4.96]***	[4.46]***	[4.71]***	[4.52]***
income low income	-0.195	-0.157	-0.159	-0.24	-0.196	-0.2
	[4.39]***	[3.91]***	[3.94]***	[4.66]***	[4.02]***	[4.08]***
income high income	0.163	0.116	0.109	0.256	0.202	0.195
	[6.72]***	[5.43]***	[5.10]***	[6.22]***	[5.52]***	[5.54]***
income very high income	0.308	0.241	0.21	0.571	0.5	0.456
	[2.66]**	[2.29]**	[1.91]*	[2.93]***	[2.71]***	[2.37]**
marital single, never married	-0.215	-0.16	-0.149	-0.295	-0.229	-0.212
	[2.94]**	[2.90]**	[2.78]**	[2.79]***	[2.78]***	[2.73]***
marital married	-0.062	0.013	0.051	-0.09	0.014	0.074
	[0.98]	[0.30]	[1.22]	[1.00]	[0.21]	[1.15]
marital divorced	-0.105	-0.046	-0.05	-0.154	-0.078	-0.081
	[0.95]	[0.47]	[0.50]	[1.00]	[0.55]	[0.56]

marital widowed	-0.17	-0.082	-0.063	-0.237	-0.121	-0.09
	[1.85]*	[1.19]	[0.92]	[1.87]*	[1.27]	[0.95]
religion Catholic	0.032	0.031	0.029	0.044	0.042	0.044
	[0.62]	[0.80]	[1.15]	[0.64]	[0.76]	[1.22]
religion Protestant	0.146	0.127	0.085	0.212	0.194	0.128
	[5.46]***	[3.88]***	[3.51]***	[5.03]***	[3.93]***	[3.61]***
religion Jewish	0.138	0.079	-0.046	0.231	0.149	-0.046
	[1.65]	[1.61]	[1.08]	[1.85]*	[1.86]*	[0.69]
religion Islam	0.203	0.153	0.089	0.295	0.233	0.144
	[1.98]*	[1.80]	[1.46]	[2.06]**	[1.90]*	[1.59]
religion Buddhism	-0.109	-0.032	-0.002	-0.14	-0.038	0.001
	[2.61]**	[0.86]	[0.05]	[2.42]**	[0.82]	[0.01]
religion Hinduism	-0.199	-0.202	-0.362	-0.129	-0.135	-0.383
	[0.62]	[0.68]	[1.18]	[0.34]	[0.38]	[1.02]
religion other	0.038	0.023	-0.051	0.091	0.066	-0.043
	[0.50]	[0.32]	[0.89]	[0.84]	[0.66]	[0.58]
quality of life RESIDING		-0.021	0.075		0.118	0.073
		[1.15]	[2.51]**		[3.13]***	[4.10]***
quality of life MOVING		0.048	-0.015		0.031	-0.002
		[3.08]**	[0.43]		[0.40]	[3.21]***
quality of life SPACE		0.082	-0.005		0.01	0.077
		[6.19]***	[0.80]		[2.82]***	[0.69]
quality of life CULTURE		0.066	0.015		0.062	0.086
		[3.61]***	[2.72]**		[3.72]***	[0.11]
quality of life WELFARE		0.05	0.057		-0.031	-0.021
		[3.00]**	[0.75]		[5.66]***	[2.94]***
quality of life INNOV		0.055	0.058		0.076	0.081
		[3.11]**	[3.57]***		[3.09]***	[3.60]***
quality of life SAFETY		0.017	0.066		0.073	0.109
		[1.86]*	[4.76]***		[1.14]	[0.61]
quality of life GOVERNANCE		0.011	0.049		0.086	0.015
		[0.62]	[7.47]***		[3.12]***	[7.17]***
New York			0.318			0.489
			[7.32]***			[7.15]***
Toronto			0.3			0.452
			[6.75]***			[6.54]***
London			0.267			0.384
			[7.17]***			[6.28]***
Paris			0.044			0.037
			[0.68]			[0.44]
Berlin			0.07			0.086
			[1.18]			[1.07]
Milan			0.026			0.03
			[0.65]			[0.53]
Tokyo			0.186			0.253
			[7.93]***			[7.06]***
Beijing			0.011			0.04
			[0.22]			[0.58]
Stockholm			0.187			0.287
			[3.50]***			[3.79]***
Observations	9127	9127	9127	9127	9127	9127
R-squared	0.19	0.23	0.25			
Log likelihood	-11155.15	-10872.72	-10800.87	-10455.13	-10171.66	-10088.02

Robust t statistics in brackets - * significant at 10%; ** significant at 5%; *** significant at 1% - error clustered by city
Excluded case: man, no education, other occupational and marital status, in fair health and middle income, no religion, living in Seoul

Table A.3 – Determinants of pride

	1	2	3	4	5	6
	ols	ols	ols	oprobit	oprobit	oprobit
female	0.104	0.086	0.074	0.126	0.117	0.104
	[3.37]***	[4.47]***	[4.32]***	[3.42]***	[4.42]***	[4.71]***
age	-0.008	-0.005	-0.005	-0.008	-0.005	-0.005
	[1.25]	[0.94]	[0.95]	[1.14]	[0.72]	[0.76]
age squared	0	0	0	0	0	0
	[1.93]*	[1.54]	[1.46]	[1.87]*	[1.36]	[1.32]
education elementary school completed (6th grade)	-0.113	-0.101	-0.067	-0.169	-0.174	-0.134
	[0.64]	[0.61]	[0.48]	[0.78]	[0.79]	[0.69]
education junior high school completed (9th grade)	-0.128	-0.095	-0.108	-0.181	-0.163	-0.181
	[0.69]	[0.52]	[0.71]	[0.79]	[0.68]	[0.87]
education high school completed (12th grade)	-0.207	-0.126	-0.183	-0.268	-0.195	-0.273
	[1.22]	[0.70]	[1.19]	[1.29]	[0.83]	[1.31]
education trade/vocational school completed	-0.113	-0.079	-0.1	-0.173	-0.154	-0.179
	[0.62]	[0.46]	[0.72]	[0.76]	[0.67]	[0.91]
education college/university student	-0.197	-0.064	-0.134	-0.27	-0.116	-0.218
	[0.96]	[0.32]	[0.76]	[1.10]	[0.45]	[0.91]
education college/university completed or above	-0.19	-0.111	-0.196	-0.255	-0.181	-0.295
	[1.15]	[0.60]	[1.30]	[1.25]	[0.76]	[1.43]
occupation agriculture/fishery/forestry	-0.449	-0.473	-0.482	-0.509	-0.593	-0.612
	[0.97]	[1.06]	[1.11]	[1.04]	[1.15]	[1.20]
occupation self-employed	-0.186	-0.141	-0.093	-0.215	-0.175	-0.12
	[1.35]	[1.13]	[0.78]	[1.31]	[1.05]	[0.73]
occupation office workers	-0.189	-0.203	-0.097	-0.226	-0.265	-0.13
	[2.05]*	[2.25]*	[1.02]	[2.00]**	[2.18]**	[0.99]
occupation manual workers	-0.108	-0.108	-0.05	-0.111	-0.129	-0.056
	[1.02]	[0.92]	[0.45]	[0.81]	[0.78]	[0.35]
occupation skilled workers	-0.159	-0.137	-0.101	-0.174	-0.165	-0.119
	[1.29]	[1.13]	[0.84]	[1.19]	[1.04]	[0.73]
occupation professional	-0.117	-0.138	-0.132	-0.143	-0.186	-0.185
	[1.05]	[1.18]	[1.11]	[1.06]	[1.18]	[1.13]
occupation sales	-0.18	-0.1	-0.053	-0.198	-0.117	-0.058
	[1.39]	[0.91]	[0.47]	[1.25]	[0.78]	[0.37]
occupation student	-0.068	-0.084	-0.016	-0.074	-0.112	-0.019
	[0.52]	[0.69]	[0.13]	[0.48]	[0.70]	[0.11]
occupation housewife	-0.372	-0.197	-0.129	-0.436	-0.252	-0.174
	[2.45]**	[1.58]	[1.04]	[2.48]**	[1.56]	[1.05]
occupation unemployed	-0.057	-0.047	-0.012	-0.059	-0.049	-0.006
	[0.41]	[0.35]	[0.09]	[0.35]	[0.27]	[0.03]
health very bad	-0.786	-0.693	-0.693	-0.805	-0.775	-0.786
	[4.22]***	[4.57]***	[4.64]***	[4.66]***	[5.50]***	[5.55]***
health bad	-0.16	-0.058	-0.038	-0.164	-0.055	-0.029
	[4.26]***	[1.36]	[0.95]	[4.02]***	[1.08]	[0.58]
health good	0.238	0.156	0.147	0.259	0.177	0.167
	[5.33]***	[4.81]***	[4.83]***	[5.42]***	[5.08]***	[4.88]***
health very good	0.509	0.322	0.303	0.613	0.431	0.411
	[8.58]***	[6.27]***	[6.18]***	[8.51]***	[6.54]***	[6.36]***
income very low income	-0.232	-0.203	-0.189	-0.246	-0.222	-0.209
	[5.41]***	[6.66]***	[7.08]***	[4.54]***	[5.50]***	[5.58]***
income low income	-0.134	-0.084	-0.079	-0.151	-0.104	-0.098
	[3.50]***	[3.04]**	[2.83]**	[3.48]***	[2.94]***	[2.77]***
income high income	0.117	0.045	0.068	0.153	0.074	0.107
	[2.14]*	[0.81]	[1.21]	[2.30]**	[1.01]	[1.44]
income very high income	0.159	0.029	0.01	0.222	0.085	0.058
	[1.97]*	[0.58]	[0.14]	[1.99]**	[1.14]	[0.58]
marital single, never married	-0.023	0.071	0.012	-0.018	0.106	0.02
	[0.38]	[1.12]	[0.22]	[0.25]	[1.26]	[0.27]
marital married	-0.03	0.106	0.059	-0.032	0.148	0.079
	[0.43]	[3.26]***	[1.94]*	[0.40]	[3.37]***	[2.12]**
marital divorced	0.046	0.141	0.066	0.075	0.204	0.099
	[0.43]	[1.57]	[1.07]	[0.61]	[1.74]*	[1.34]

marital widowed	0.009	0.158	0.091	0.013	0.214	0.118
	[0.12]	[3.32]***	[2.40]**	[0.14]	[3.10]***	[2.22]**
religion Catholic	0.165	0.151	0.105	0.204	0.208	0.151
	[2.75]**	[3.51]***	[2.09]*	[2.82]***	[3.70]***	[2.31]**
religion Protestant	0.099	0.052	0.061	0.118	0.071	0.078
	[2.08]*	[0.97]	[1.96]*	[1.96]**	[0.99]	[1.84]*
religion Jewish	0.471	0.322	0.093	0.641	0.513	0.174
	[4.17]***	[7.03]***	[3.17]**	[3.65]***	[5.75]***	[4.62]***
religion Islam	0.547	0.425	0.375	0.714	0.606	0.55
	[6.75]***	[8.71]***	[5.35]***	[6.61]***	[8.89]***	[6.15]***
religion Buddhism	-0.158	-0.042	-0.015	-0.174	-0.043	-0.02
	[1.56]	[0.81]	[0.29]	[1.63]	[0.77]	[0.35]
religion Hinduism	0.376	0.327	0.121	0.471	0.434	0.158
	[1.00]	[0.79]	[0.29]	[1.05]	[0.83]	[0.29]
religion other	0.067	0.023	-0.048	0.103	0.053	-0.048
	[0.91]	[0.34]	[1.20]	[1.19]	[0.62]	[1.07]
quality of life RESIDING		-0.14	-0.127		0.032	0.116
		[8.69]***	[6.04]***		[4.54]***	[2.68]***
quality of life MOVING		0.025	0.04		0.085	0.135
		[1.14]	[2.54]**		[1.11]	[5.68]***
quality of life SPACE		0.098	0.101		0.113	0.061
		[4.96]***	[5.55]***		[4.88]***	[6.53]***
quality of life CULTURE		0.172	0.086		0.125	-0.159
		[5.91]***	[1.68]		[5.29]***	[4.21]***
quality of life WELFARE		0.035	0.025		0.213	0.036
		[3.90]***	[4.00]***		[4.25]***	[6.35]***
quality of life INNOV		-0.013	-0.002		-0.019	-0.005
		[0.71]	[0.17]		[0.82]	[0.28]
quality of life SAFETY		0.061	0.045		0.045	0.061
		[4.34]***	[7.05]***		[3.91]***	[1.95]*
quality of life GOVERNANCE		0.085	0.175		-0.173	0.223
		[3.88]***	[3.14]**		[9.27]***	[3.82]***
New York			0.519			0.718
			[11.87]***			[11.25]***
Toronto			0.404			0.487
			[10.56]***			[8.60]***
London			0.269			0.3
			[6.15]***			[5.54]***
Paris			0.051			-0.009
			[0.88]			[0.13]
Berlin			-0.032			-0.089
			[0.70]			[1.64]
Milan			0.171			0.169
			[3.50]***			[2.50]**
Tokyo			0.187			0.193
			[8.27]***			[5.12]***
Beijing			0.201			0.207
			[3.90]***			[3.39]***
Stockholm			0.047			-0.007
			[0.85]			[0.11]
Observations	9092	9092	9092	9092	9092	9092
R-squared	0.11	0.24	0.26			
Log likelihood	-12202.26	-11484.85	-11350.59	-11505.05	-10795.05	-10644.68

Robust t statistics in brackets - * significant at 10%; ** significant at 5%; *** significant at 1% - error clustered by city
Excluded case: man, no education, other occupational and marital status, in fair health and middle income, no religion, living in Seoul

Appendix 2 – The questionnaire

Questionnaire : Quality of Life Survey

14 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.

<Interviewer instruction>

: For each topic, please properly remind the respondent of the 5 response scale
– Strongly agree/Agree/ Neither agree nor disagree /Disagree /Strongly disagree

Economy		Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Don't Know	Refusal
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	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Don't Know	Refusal
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 (6th grade)
3) Junior high school completed (9th grade)
4) High school completed (12th 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
4) Manual workers
5) Skilled workers
6) Professional
7) Sales
8) Student
9) Housewife
10) Unemployed
11) Other (Please specify:_____)
98) Don't Know
99) Refusal (DO NOT PROMPT)

D4. Could you please tell me your marital status? (READ CODE 1-5)
37

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

1) Catholic
2) Protestant
3) Jewish
4) Islam
5) Buddhism
6) Hinduism
7) Other
8) No religion
9) Refusal (DO NOT PROMPT)