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MAKING THE NEIGHBOURHOOD A BETTER PLACE TO LIVE. A SWB APPROACH IMPLEMENTING FUNDAMENTAL HUMAN NEEDS

HACIENDO EL BARRIO UN LUGAR MEJOR PARA VIVIR. UN ENFOQUE DE BIENESTAR SUBJETIVO APLICANDO LAS NECESIDADES HUMANAS FUNDAMENTALES

Ioanna Anna Papachristou, Martí Rosas-Casals
Sustainability Measurement and Modeling Lab., Universitat Politecnica de Catalunya – Barcelona Tech, EET – Campus Terrassa, Colom 1, 08222, Barcelona (Spain).
ioannapapachr@gmail.com

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Abstract

Subjective well-being (SWB) studies have been at the centre of researchers' attention during the last years. With the majority of people now living in cities, the necessity for a more anthropocentric approach for the study and betterment of urban environments is constantly increasing. In this sense, defining and measuring SWB in urban contexts can be of particular benefit in urban design and planning processes. In this article, a method for measuring SWB for urban places based on the accomplishment of the fundamental human needs is presented and applied at a neighbourhood of Barcelona; that of Vila de Gràcia. For the measurement, a survey was constructed based on the specific geographical and socio-economic characteristics of the study case. Retrieved from Max-Neef's Human Scale Development Paradigm (Max-Neef et al. 1991), human needs correspond to the domains of study of the suggested method. The matching of the survey's questions to each need is the outcome of two consecutive processes: a first qualitative one, involving the work of an expert group, and a second quantitative one, involving the definition of weights among the questions that affect the same need. Although the final result is positive (although low) for this study case, results for each need show considerable differences in their level of accomplishment. At the same time people seem to truly believe that most of their feelings are affected by their living environment, with stress and calmness leading the list. In summary, the method defines and applies a simple tool to quantify and evaluate current levels of SWB at different urban scales and to determine more holistic urban indexes in order to improve decision making processes, policies and plans. The classification of the questions per need favours the identification of a potential problem at the urban grid and consequently can be used as a process for implementing related measures of improvement. The method can also be seen as a tool to enhance bottom-up approaches and processes of urban analysis with the aim to create more liveable places for the local population.

Key Words: Subjective well-being, neighbourhood, urban environments, need satisfaction, Human-Scale Development paradigm

Resumen

Los estudios del bienestar subjetivo (SWB han estado en el centro de atención científica en los últimos años. Con la mayoría de las personas viviendo ahora en ciudades, la necesidad de un enfoque más antropocéntrico para el estudio y la mejora de los entornos urbanos es cada vez mayor. En este sentido, definir y medir el bienestar subjetivo en contextos urbanos puede ser especialmente beneficioso en los procesos de diseño y planificación urbana. En este artículo, se presenta un método para medir el bienestar subjetivo de los contextos urbanos en base a la realización de las necesidades humanas fundamentales, aplicada en un barrio de Barcelona; el de Vila de Gràcia. Para la medición, se redactó una encuesta en base a las características geográficas y socioeconómicas específicas del caso de estudio. Obtenidos del paradigma de Desarrollo a Escala Humana de Max-Neef (Max-Neef et al. 1991), las necesidades humanas corresponden a los ámbitos de investigación del método sugerido. La clasificación de las preguntas de la encuesta en cada necesidad es el resultado de dos procesos consecutivos: un primero cualitativo, que implica el trabajo de un grupo de expertos, y un segundo cuantitativo, que implica la definición de pesos entre las cuestiones que afectan la misma necesidad. Aunque el resultado final es positivo (aunque bajo) para este caso de estudio, los resultados para cada una de las necesidades muestran diferencias considerables en su nivel de satisfacción. Al mismo tiempo, la gente parece creer de verdad que la mayoría de sus sentimientos se ven afectados por su entorno de vida, con estrés y la tranquilidad siendo los primeros en la lista. En resumen, el método define una herramienta simple para la cuantificación y evaluación de los niveles actuales de bienestar subjetivo en diferentes escalas urbanas y la determinación de índices urbanos más holísticos con el objetivo de mejorar los procesos de toma de decisiones, de políticas y planeamiento. La clasificación de las preguntas por necesidades favorece la identificación de un potencial problema en la red urbana y en consecuencia se puede utilizar como un proceso para la aplicación de medidas de mejora. El método también puede ser visto como una herramienta para mejorar los enfoques y procesos de análisis urbano desde abajo, con el objetivo de crear lugares más habitables para la población local.

Palabras claves: bienestar subjetivo, barrio, entornos urbanos, satisfacción de necesidades, Desarrollo a Escala Humano

INTRODUCTION

Concerns related to neighbourhood have a long history in social policy and sociology (Forrest & Kearns 2001). Notwithstanding, there is no single, generalizable interpretation of the neighbourhood (Kearns & Parkinson 2001). Numerous definitions can be found in the social science literature, varying in their emphases and degree of ambiguity (Galster 1986). The uncontrolled urbanisation of this period (United Nations 2014) was seen to be producing a social order in which the traditional ties of community—shared space, close kinship links, shared religious and moral values—were being replaced by anonymity, individualism and competition (Forrest & Kearns 2001). Everything is now connected (Orrell 2010) and in a sense, the neighbourhood becomes an extension of the home for social purposes and hence it becomes extremely important in identity terms: 'location matters' and the neighbourhood becomes part of our statement about who we are (Forrest & Kearns 2001).

The satisfaction with one's neighbourhood – where satisfaction here is referring to residents' overall evaluation of their neighbourhood environment (Hur et al. 2010) – has long been a major research subject in sociology, planning, and related disciplines (Amérigo & Aragonés 1997; Hur & Morrow-Jones 2008; Marans & Rodgers 1974; Marans 1976; Mesch & Manor 1998; Weidemann & Anderson 1985). A neighbourhood can be seen as a place – understanding place as the geography or environments of individuals and groups of individuals (Marans & Stimson 2011) – that not only forms part of who we are but affects our emotional and physical state (Costanza et al. 2007; Moro et al. 2008; Veenhoven 2007; Kennedy & Adolphs 2011; Lederbogen et al. 2011). There is evidence of a relationship between neighbourhood characteristics (e.g., access to amenities, neighbourliness and green space) and neighbourhood satisfaction and self-reported physical and mental health (Leslie & Cerin 2008). It appears that the perception of neighbourhood characteristics may influence the level of satisfaction with living in a community, in other words it affects one's well-being.

Following this rationale, in this study it is applied a method to measure SWB for urban environments, based on the perception of people using the space. To check

the levels of satisfaction, the fundamental human needs of the Human Scale Development paradigm (Max-Neef et al. 1991) were used as study domains. The paper is organised as follows. Section 2 presents a literature review related to the measurement of SWB. Section 3, materials and methods, includes the methodology used for the compilation of data, the survey and case study and the classification of questions per need (or study domain). Section 4 presents the results on the survey analysis, the weighting of the questions and the final SWB assessment. The paper ends with Section 5, discussion.

LITERATURE REVIEW

Since ancient times, western thinkers have been concerned with the understanding of "happiness" (White 2006). According to the evolution of the nomenclature related to happiness, in the scientific literature we encounter many close-meaning terms such as well-being, life satisfaction, quality of life, positive and negative affect, utility, welfare, hedonism, eudaimonia, etc., often confusing the reader trying to find a concrete definition of each and every one of them. When it comes to subjective well-being (SWB), it is said to refer to people's cognitive and affective evaluations of their lives (Diener 2000). People experience abundant SWB when they feel many pleasant and few unpleasant emotions, when they are engaged in interesting activities, when they experience many pleasures and few pains, and when they are satisfied with their lives. There are additional features of a valuable life and of mental health, but the field of SWB focuses on people's own evaluations of their lives. In general, it considers "soft" maters such as satisfaction with income or perceived adequacy of dwelling. The focus is on people's behaviours and assessment, or evaluations of aspects of quality of life in general (Andelman et al. 1998). It stems from survey research, which took off in the 1960's (Veenhoven 2007), aiming to gather respondents' own assessments of their lived experiences in the form of self-reports of happiness, satisfaction, fulfilment, well-being or some other near-synonym. Those surveys come to express the perceived significant of each domain of study to the respondent (Costanza et al. 2007). The easiest and quite obvious technique – broadly used in the early research on SWB (Diener 2000) – is to

simply ask people how they feel (Layard 2010; Veenhoven 2003; Weiner 2008; Layard 2005) and evaluate their answers by means of either one-item scales, as in Andrews & Withey (1976) or multi-item scales, such as "Satisfaction with Life Scale" used in Diener et al. (1985) and Pavot & Diener (1993). A problem encountered in these type of methods is that the majority of people want to present a happy face to the world (Kirita & Endo 1995; Rhodes et al. 2003). As a consequence, they usually report higher happiness levels than in mail-in surveys (and even higher levels if the interviewer is of the opposite sex (Hugenberg & Sczesny 2006)). Other problems that may affect the individual response are those of internalization of cultural norms, mental illness, lack of information, etc. Cognitive problems caused by ordering effects, question wording and difference in scales may lead as well to biases in the answers obtained (Bertrand & Mullainathan 2001). Furthermore, cultural differences and difficulties with translation may introduce further biases, and the extent to which these biases are problematic is a matter of debate (Moro et al. 2008). Hence, subjective assessments usually have troubles in delineating preference adaptation and the fact that people judge their level of happiness in comparison with peer groups rather than in absolute terms. However, the response of the person should not be ignored or interpreted to mean the opposite (Costanza et al. 2007). If a person says he is "pretty happy", it means that this is what he really feels at the moment (Weiner 2008). There is a broad consensus among previous studies that self-reported well-being is a satisfactory empirical proxy for individual utility (Diener et al. 1999; Di Tella & MacCulloch 2006; Moro et al. 2008), showing adequate validity, reliability, factor invariance, and sensitivity to change (Diener 1994).

MATERIALS AND METHODS

Case study

The selected place used as the case study corresponds to the neighbourhood of Vila de Gràcia, at the Gràcia district of Barcelona. Gràcia is located at the north of the city and the neighbourhood of Vila de Gràcia is located at the south of the district. Vila the Gràcia was chosen for being a consolidated urban environment of a controllable scale which allows the implementation of the methodology. In addition, it is a

neighbourhood of mixed residential, services and culture uses. The area is characterized by its dynamism and heterogeneity, which ensures participation and a variety of responses. Further, it has recently undergone a process of urban transformation in order to improve its urban quality (Agència d´Ecologia Urbana de Barcelona 2007).

Survey

Verbal responses such as questionnaire surveys and interviews are the most widely used source of data in social science to learn about other people's beliefs, attitudes, behaviours, feelings, perceptions, motivations, or plans (Hur et al. 2010). Here, and according to the method proposed in Papachristou & Rosas-Casals (2015), an anonymous survey was created online. The format was simple and accessible to everyone and its design satisfied the survey principles under Dillman et al. (1998). It was developed in Spanish, Catalan and English[1], as Barcelona´s citizens consist of many nationalities, and started running on the 10th of May 2012 and kept open for one month, until the 10th of June 2012. The web survey mode was chosen because it has several advantages. It does not suffer from interviewer bias, and responders may feel more comfortable answering sensitive questions or moving through a survey at their own pace (Pearce & Ozdemiroglu 2002). Moreover, a vast improvement in response speed over traditional mail surveys is widely reported and the financial expenditure (Wolfgang 2002) and ecological impact of surveys on the Internet is smaller due to the elimination of postage, printing and data entry (Dillman & Bowker 2002). It also has some disadvantages, as for example the lack of any clarification of questions (MacKerron & Mourato 2009) and the over-participation of responders with degrees in higher education, that tend to belong mainly to middle class and be more liberal (Brenner 2002; Wolfgang 2002).

Using human needs as domains of study

The methodology proposed in this study is built on Manfred Max-Neef`s Human Scale Development (HSD) paradigm (Max-Neef et al. 1991), partially modified by Costanza et al. (2007). HSD paradigm is based on the definition of human needs and

[1] The English version of the online survey can be visited at: http://goo.gl/0M1iI

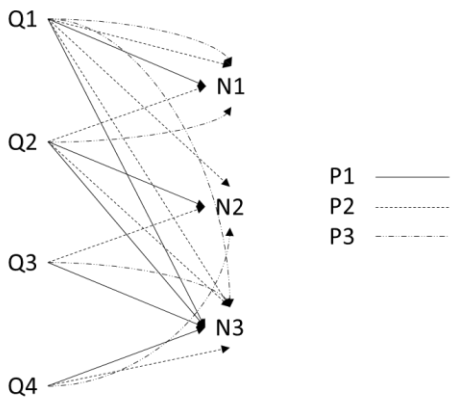
their corresponding satisfiers. Human needs indicate deprivations and at the same time individual and collective human potential. Needs are seen as finite, few and classifiable, changing only in a very slow pace along with the evolution of our kind, and they can be satisfied according to many criteria. For the purpose of this study, the axiological needs category was used, with domains corresponding to Subsistence, Protection, Affection, Understanding, Participation, Leisure, Creation, Identity and Freedom. Protection was changed by Security, as suggested by Costanza et al. (2007), and Subsistence has been considered within Reproduction, being the latter understood as a part of the former. Spirituality has been also included because of its importance in the assessment as a need (see (Van Dierendonck 2011; O'Brien 2005)). The fulfilment of all needs (or domains) is considered equally important as any unsatisfied or not adequately satisfied human need reveals a form of human poverty, hindering happiness and therefore developing potential pathologies (Cruz et al. 2009). What changes over time and between cultures are the satisfiers of these needs. There is no one-to-one correspondence between needs and satisfiers. One satisfier may contribute simultaneously to the satisfaction of different needs or, conversely, a need may require various satisfiers in order to be met, and these relations are not fixed, they may vary according to time, place and circumstance (Max-Neef et al. 1991). Each economic, social and political system adopts different methods for the satisfaction of the same fundamental human needs. In every system, they are satisfied (or not satisfied) through the generation (or non-generation) of different types of satisfiers.

Question classification

The matching of the questions to one or more needs is a subjective choice related to personal understanding and interpretation. As it is considered a complex task but still important for the interpretation of the results, the authors worked with an experts group in order to classify the surveys' questions into the ten fundamental human needs (or study domains) as suggested in (Papachristou & Rosas-Casals 2015). The group was formed by researchers of the Sustainability Measurement and Modeling Lab[2] and the Institute of Research in Sustainability Science[3] and they were

[2] www.summlab.upc.edu

asked to individually match the questions to each need. A freedom of selection was given to each individual, as questions may belong to more than one need according to their personal point of view (see section 3.3). The collection of all individual classifications of the study group were then weighted, considering how many people considered this question belonging to that need. The result followed the process of the example presented in Figure 1, where, e.g., considering Need 1, the three people of the study group believe that it is assessed by Q1 while only two of them believe that it is also assessed by Q2. The Question weight is the ratio between the number of people selecting that and the total number of people in selections. In this case, the Question weights for this specific need (N1) would be 3/5 for Q1 and 2/5 for Q2.



Need	Question	# People	Question weight
N1	Q1	3	3/5
	Q2	2	2/5
N2	Q1	1	1/4
	Q2	1	1/4
	Q3	1	1/4
	Q4	1	1/4
N3	Q1	3	3/9
	Q2	2	2/9
	Q3	2	2/9
	Q4	2	2/9

Figure 1 - Example of correspondence of questions (Qi) to needs (Ni) according to the perceptions of the different people (Pi) included in the study group. In this case, the study group consists of 3 people (P1 – P3), each of them expressing his/her perceptions on the classification of questions per needs. For example, considering N1, all of them believe that it is assessed by Q1 while P2 and P3 believe that it is also assessed by Q2. The Question weights for this specific need are 3/5 for Q1 and 2/5 for Q2, where 5 is the sum of the selections people made for the need.

RESULTS

General information data of the sample is shown in Table 1, with main statistics for a total of 174 responses. The focus was in all people using the space and not only to those living in the neighbourhood. So as to not to exclude anybody, the survey was addressed to all types of citizens: people living in Vila de Gràcia and also people using the urban space for recreational or familiar reasons, shopping, working, etc. Of

[3] www.isupc.edu

those not living in Vila de Gràcia, a majority was living in nearby neighbourhoods like Sants, Sant Gervasi, Eixample, Gòtic and Sagrada Família. The educational level of the sample seemed to be really high but as mentioned previously, an over-participation of responders with degrees in higher education is the usual outcome in this type of survey (Brenner 2002; Wolfgang 2002).

Table 1 - Main statistics of the sample.

	Groups	%		Groups	%
Gender	Female	50.6	**Place of origin**	Vila de Gràcia	51.6
	Male	49.4		Other neighbourhoods	35.6
				Metropolitan area	9.2
Age	14-17	0.6	**Activity**	Public sector	38.9
	18-24	10.9		Private sector	27.9
	25-30	21.3		Student	25.0
	31-44	35.6		Unemployed	3.5
	45-64	28.2		Pensioner	3.5
	65+	3.5		Self-employed	3.4
Relation with space	Lives there	51.6	**Education level**	Primary education	1.7
	Recreational reasons	29.9		Lower secondary	0.6
	Shopping	5.8		Upper secondary	2.3
	Works there	4.0		Technical studies	7.5
	Familiar reasons	1.7		Bachelor	11.5
	Had lived there	1.7		2nd cycle of studies	36.6
	Lives close	1.2		Master	20.7
				PhD	20.1

Survey analysis

The most important results coming directly from the survey analysis are the following. Firstly, as far as the satisfaction with different aspects of life (such as health, life in general, free time, place where they live, family life, social life and social status) is concerned (Figure 2a), most of the answers were between 4 and 5 (with values ranging from 77.0% to 81.0%) over a maximum value of 5. People seemed less satisfied about money (43.1%), work (53.5%) and commuting (51.2%)[4]. At the same time, there was a 31.6% that considered their time spent at work as no creative. And a 39.1% declared they were quite happy (4 out of 5) of their time distribution, while only a 3.5% was totally happy (5 out of 5). Another interesting question was about quality of life in Vila de Gràcia (Figure 2b), where the responders

[4] All the above values are cumulative, corresponding to the satisfaction of 4 and 5 in the scale of 5.

seemed rather dissatisfied, with most of the aspects scoring between 3 and 2 in the satisfaction scale. Water quality, air[(a)] quality and sanitation facilities punctuated[(b)] with 3 for the majority of the sample (values ranging from 39.1% to 42.0%), while pedestrian areas scored a little bit more at the satisfaction scale, between 3 (28.7%) and 4 (33.3%). Noise and traffic were between 2 and 3 (cumulative values of 62.6% and 54.0% correspondingly), while people seemed really dissatisfied with green spaces, giving those 2 (44.3%) and 1 (23.0%). Although most of them where renters (50.6%), they did feel "at home" when they were there (87.4%). They also felt really safe around the neighbourhood (cumulative value of 79.3% for 4 and 5). Notwithstanding, there was a 6.9% of the total that had experienced violence in the familiar environment, and a 12.6% did not feel free as a person. Another interesting datum is that besides the actual turbulences in the economic and political spheres, the great majority (74.1%) was optimistic, stating that they can make plans for the future.

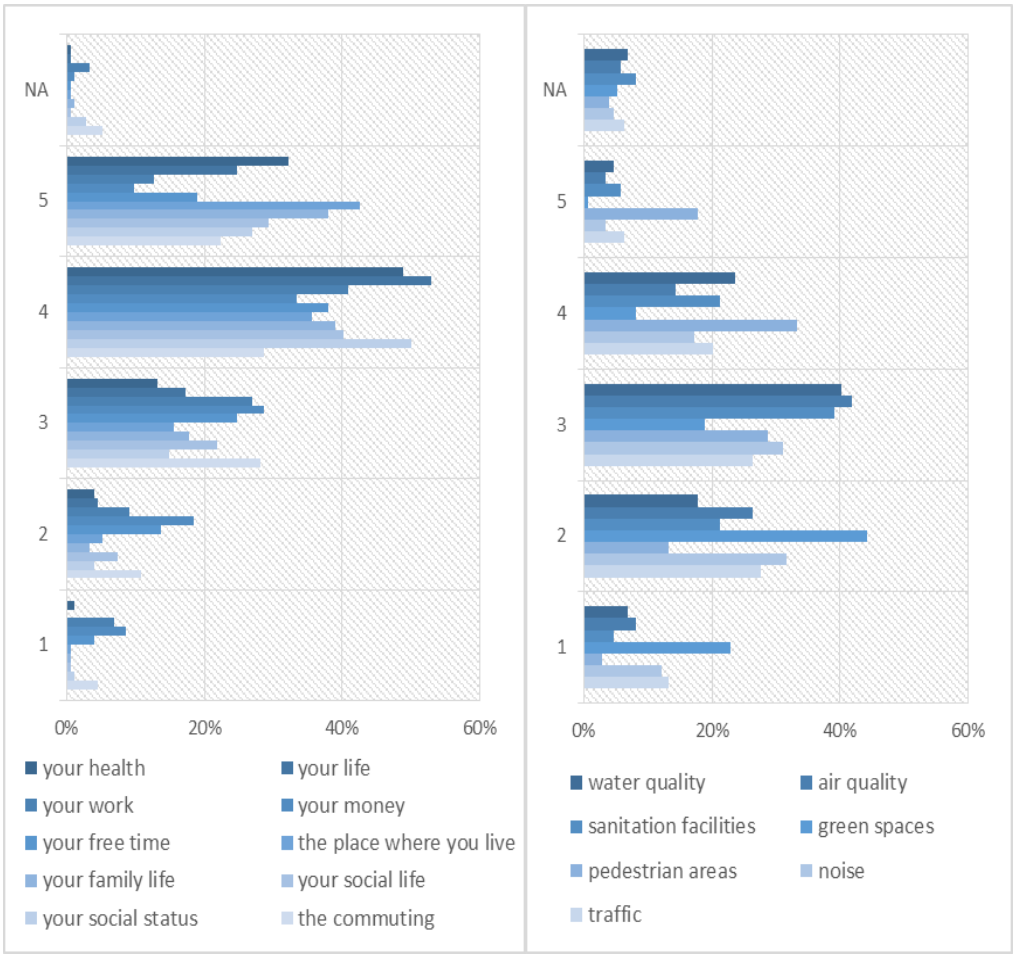


Figure 2 - Satisfaction with different aspects of life (a) and quality of life in Vila de Gràcia (b) rated from 1 (not satisfied) to 5 (completely satisfied).

As far as environmental practices is concerned, the questioned claimed that they do recycle, save energy and water (values ranging from 85% to 94%) but they tend not to share their homes and cars (65% and 60% respectively) and only 11% did prefer going on foot and even less (8%) by public transport, although 53% of them choose bicycle as a common mode of transport.

About the level of attachment to significant others, the sample seemed emotionally dependent on other people. In the scale from 1 to 5, 46% scored with 4 and 5 their emotional dependence on the family and 23% their dependence on their friends.

When it came to feelings, a majority stood for positive ones (Figure 3a), giving them a 4 at the scale of 5, while a greater dispersion was observed for the negative ones (Figure 3b). In this latter case, worry was often experienced by 41.4% of the sample, with a 55.2% feeling anger rarely. Stress seemed to be another concern for the responders, as 60.9% gave it a score of 3 or 4. When they were asked which of those feelings they thought may change in a different urban environment, stress and calmness lead the list, followed by solidarity, tolerance, fear and loneliness. At the bottom of the list appeared compassion, jealousy and forgiveness as feelings least affected by a change in urban environment.

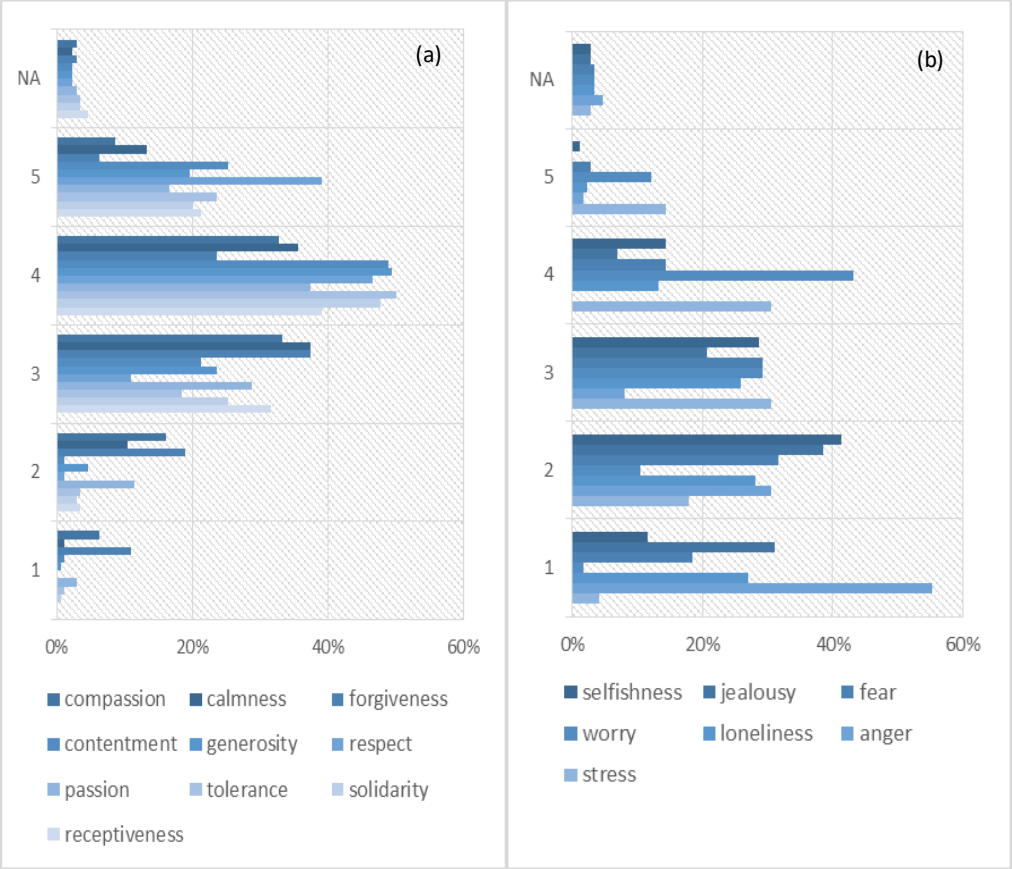


Figure 3 - Frequency of positive (a) and negative feelings (b) for Vila de Gràcia neighbourhood rated from 1 (rarely) to 5 (very often). For the majority of positive feelings (a) a frequency of 4 (often) is most commonly noted. Negative feelings' frequency (b) appears to be more disperse. Most responders seem to experience worry and stress often while other feelings such as anger appear the last in the list, as rarely experienced.

Classification of questions per needs

Table 2 shows an example of questions classified and weighted inside the correspondent needs. For question Q7, which is related to the satisfaction with one's health, we can see that 5 people of the expert group classified it inside Subsistence, resulting in a weighting score of 2.75% for that need. At the same time, 4 of the experts classified it in Freedom, resulting in a weighting score of 1.72% for that need. The threshold remains the same for both needs (or study domains) representing that if more than 50% percent of the responders are satisfied (5) or rather satisfied (4), then the weighting score will be added to the total of each need (last column). In this case and according to the "Answer" column the score reaches

the 81% and so the threshold is satisfied. The same happens with question Q41, which is only related to the Security need according to the experts' opinion. This is not the case, though, for question Q73 related to the frequency that one is experiencing stress, where the threshold is not satisfied and the question weight is not added to the total score of the need. The same process was followed for the rest of the questions of the survey in order to obtain a result for each need individually and for the SWB as a total.

Table 2 - Classification and weighting example.

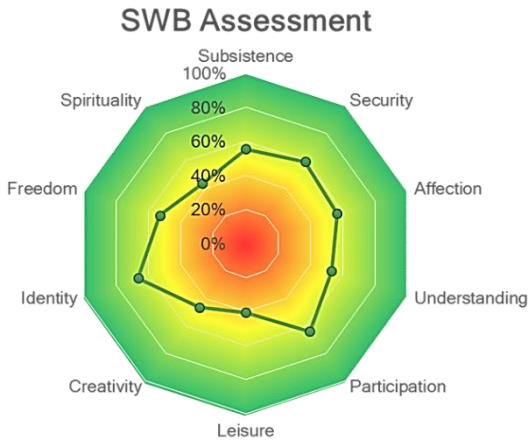
NEED	ID	QUESTION	# PEOPLE	QUESTION WEIGHT	THRESHOLD	ANSWER	THRESHOLD SATISFACTION	TOTAL SCORE
SUBSISTENCE	Q7	How satisfied are you with your health?	5	2,75%	4-5 > 50%	4-5: 81,03%	Yes	2,75%
FREEDOM	Q7	How satisfied are you with your health?	4	1,72%	4-5 > 50%	4-5: 81,03%	Yes	1,72%
SECURITY	Q41	How safe do you feel at the neighbourhood of Vila de Gràcia?	6	3,02%	4-5 > 50%	4-5: 79,31%	Yes	3,02%
CREATIVITY	Q73	How often do you experience stress?	4	3,05%	1-2 > 50%	1-2: 21,84%	No	0,00%

SWB Assessment

As stated in section 2, SWB is associated to people's perceptions related to their lives. For its quantification, the classification of questions per need was used as suggested in Section 3.4, following the process explained in Section 4.2. The final results per need were measured in percentages and are represented in Table 3 and Figure 4. The most satisfied needs for Vila de Gràcia neighbourhood are Participation and Identity with 64 and 66.4% correspondingly. At the meanwhile, Leisure (40.6%), Creativity (46.6%) and Spirituality (43.5%) seem to be the least satisfied needs. The rest of the needs related to Subsistence, Security, Affection, Understanding and Freedom are found in between with percentages varying from 53 to 59.3%. The total satisfaction corresponding to SWB appears to be rather low, arriving only nearly to 54%. Taking into consideration the standard deviation, a variation of ± 8% is possible. The level of fulfilment in this case could arrive at only 46%, suspending the median of 50%.

Table 3 and Figure 4 - SWB assessment for Vila de Gràcia Neighbourhood.

Human needs (Domains)	***Satisfaction (%)***
1. Subsistence	55.49
2. Security	59.30
3. Affection	56.54
4. Understanding	53.04
5. Participation	64.02
6. Leisure	40.58
7. Creativity	46.56
8. Identity	66.38
9. Freedom	53.02
10. Spirituality	43.52
Total (SWB):	**53.85**



DISCUSSION

In this globally connected era that we are living, it would seem that the neighbourhood is being progressively eroded with the emergence of a more fluid, individualised way of life (Forrest & Kearns 2001). Social networks are city-wide, national, international and increasingly virtual. In the wired neighbourhood of the informational age and with ever-expanding possibilities for 'indirect socialising' (Guest & Wierzbicki 1999), one might legitimately ask, "What connects people to one another in the same street?" On the other hand, globalising processes may have the opposite effects. As the forces which bear down upon us seem to be increasingly remote, local social interaction and the familiar landmarks of the neighbourhood may take on greater significance as sources of comfort and security. Moreover, contrary to prevalent ideas of increased spatial mobility and a weakening of place attachment, a lot depends on the nature of the temporal comparisons being made (Phillipson et al. 1999). The relationship between people and places is perhaps even more important at the end of the 20th century than it was at the beginning. How benevolent, unfriendly, creative or unproductive can we expect a city to be depends essentially on how its citizens behave, work and live and, complementary, on how the physical environment receives them and accommodates their daily demands. As it is shown in this paper, people truly believe that some of their feelings would change in different types of urban environment, with stress and calmness leading the list, followed by solidarity, tolerance, fear and loneliness. Although urban

planners and architects tend to evaluate city dwellers' demands in order to define the best possible urban context to apply their theories, they usually rely on objective measures, only partially addressing the polyedric urban dweller reality.

As a response to this truth, the methodology applied in this paper is concentrated on subjective measurements and processes and allows quantifying and evaluating current levels of SWB for a specific urban environment, the neighbourhood of Vila de Gràcia in Barcelona (Spain). It can be used to define more useful urban quality indexes in order to improve decision making processes, policies and plans. It is based on the accomplishment of the fundamental human needs according to the Human Scale Development framework (Max-Neef et al. 1991). SWB is interpreted and understood as something complex and multidimensional. It depends on the chosen spatial and temporal scales, methodology, the inclusion or exclusion of the different factors and indicators, the target group, etc. Therefore, it is mandatory to try to incorporate all the different options and aspects that may affect somebody's well-being, and the fulfilment of his or her needs. A good interpretation of the accumulated data may lead to the creation of a visual representative image of the sample and foresee in it what is missing, what goes wrong and what is affecting personal happiness. The division of the questions by needs aids in understanding the category in which a problem can be concentrated. As a consequence, the method here presented may also be of great help when having to decide the focus of a decision making process, concerning future policies, plans and measures of improvement. At the same time, the method can be considered a useful tool both to evaluate the current urban environment with the aim to achieve a better one, concentrating our efforts on the SWB of the dwellers.

Following this rationale of using the fundamental human needs as study domains, the results for Vila de Gràcia neighbourhood showed us that the lowest need satisfaction corresponds to Leisure (40.6%), followed by Spirituality (43.5%) and Creativity (46.6%). Looking further at the questions of the survey related to Spirituality we can come to the conclusion that the questioned do not seem to have a clear view of the meaning or the importance of Spirituality, tending to connect it only with religion and not with nature or well-being, as suggested by (Kamitsis & Francis 2013). The spheres of Leisure and Creativity are considered highly

interrelated by the modern societies and in order to understand this low percentage a further analysis should be also made related to the questions included in and defining these needs. It seems that our present-day extremely (pre)occupied and stressed way of life clearly affects the perceived satisfaction of these needs. Hours spent on television, on the internet, using smart phones, video games and the zero participation to productive processes might be one possible answer to the obtained low scores. Besides, it is a fact that in the actual economic model, applied and experimental human creativity (i.e., thinking of novel and procreative ways of doing things) is generally declining and being replaced by high-tech apparels and gadgets designed by a techno-scientific elite (Csikszentmihalyi 1996; Johnson 2010).

As suggested in (Papachristou & Rosas-Casals 2015), a next step in this research would be to compare the subjective perceptions and feelings that the dwellers obtained from their surroundings with related objective measures and indexes concerning the same urban environment, in this case the neighborhood. Actions should be also taken to ameliorate the satisfaction related to all needs starting from those least satisfied. The study offers a method that communities can use to set guidelines for future development. Researchers and planners can use the method to test the stability and applicability of the finding to different contexts. Through such tests, application and evaluation of the effects, we hope that this methodology could help scholars, decision makers, planners and citizens to create and modify neighbourhoods in order to improve resident satisfaction and to make better places for people, by maximising the degree of user choice and giving emphasis on the correlation between designed space, activities and use.

REFERENCES

Agència d´Ecologia Urbana de Barcelona, 2007. Propuesta de supermanzanas en Gràcia. BCN Ecologia. Available at: http://bcnecologia.net/index.php?option=com_content&task=view&id=47&Itemid=108&lang=SP [Accessed January 16, 2012].

Amérigo, M. & Aragonés, J.I., 1997. A theoretical and methodological approach to the study of residential satisfaction. Journal of Environmental Psychology, 17(1), pp.47–57. Available at: http://www.sciencedirect.com/science/article/pii/S0272494496900389 [Accessed October 3, 2015].

Andelman, R. et al., 1998. Quality of life definition and terminology: A discussion document from the International Society for Quality of Life Studies, Available at: http://www.isqols.org/resource/quality-of-life-definition-and-terminology/.

Andrews, F.M. & Withey, S.B., 1976. Social indicators of well-being: Americans' perceptions of life quality, New York: Plenum Press.

Bertrand, M. & Mullainathan, S., 2001. Do people mean what they say? Implications for subjective survey data. American Economic Review, 91(2), pp.67–72. Available at: http://www.jstor.org/stable/10.2307/2677735 [Accessed November 4, 2012].

Brenner, V., 2002. Generalizability Issues in Internet-Based Survey Research: Implications for the Internet Addiction Controversy. In B. Batinic et al., eds. Online social sciences. Ashland, OH, US: Hogrefe & Huber Publishers, pp. 117–139. Available at: http://psycnet.apa.org/psycinfo/2003-88135-000.

Costanza, R. et al., 2007. Quality of life: An approach integrating opportunities, human needs, and subjective well-being. Ecological Economics, 61(2-3), pp.267–276. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0921800906000966 [Accessed March 13, 2012].

Cruz, I., Stahel, A.W. & Max-Neef, M.A., 2009. Towards a systemic development approach : Building on the Human-Scale Development paradigm. Ecological Economics, 68(7), pp.2021–2030. Available at: http://dx.doi.org/10.1016/j.ecolecon.2009.02.004.

Csikszentmihalyi, M., 1996. Creativity Flow and the Psychology of Discovery and Invention, New York: HarperCollins.

Diener, E., 1994. Assessing subjective well-being: Progress and opportunities. Social Indicators Research, 31(2), pp.103–157. Available at: http://link.springer.com/10.1007/BF01207052 [Accessed December 3, 2013].

Diener, E. et al., 1999. Subjective Well-Being : Three Decades of Progress. Psychological Bulletin, 125(2), pp.276–302.

Diener, E., 2000. Subjective well-being: The science of happiness and a proposal for a national index. American Psychologist, 55(1), pp.34–43. Available at: http://doi.apa.org/getdoi.cfm?doi=10.1037/0003-066X.55.1.34 [Accessed October 25, 2012].

Diener, E. et al., 1985. The Satisfaction With Life Scale. Journal of personality assessment, 49(1), pp.71–5. Available at: http://www.ncbi.nlm.nih.gov/pubmed/16367493.

Van Dierendonck, D., 2011. Spirituality as an Essential Determinant for the Good Life, its Importance Relative to Self-Determinant Psychological Needs. Journal of Happiness Studies, 13(4), pp.685–700. Available at: http://www.springerlink.com/index/10.1007/s10902-011-9286-2 [Accessed November 3, 2012].

Dillman, D.A. & Bowker, D.K., 2002. The Web Questionnaire Challenge to Survey Methodologists. In B. Batinic et al., eds. Online social sciences. Ashland, OH, US: Hogrefe & Huber Publishers, pp. 53–71. Available at: http://psycnet.apa.org/psycinfo/2003-88135-000.

Dillman, D.A., Tortora, R.D. & Bowker, D., 1998. Principles for constructing web surveys, Pullman, Washington. Available at: http://survey.sesrc.wsu.edu/dillman/papers/1998/principlesforconstructingwebsurveys.pdf [Accessed November 5, 2012].

Forrest, R. & Kearns, A., 2001. Social Cohesion, Social Capital and the Neighbourhood. Urban Studies, 38(12), pp.2125–2143. Available at: http://usj.sagepub.com/content/38/12/2125.abstract [Accessed July 28, 2015].

Galster, G.C., 1986. What is neighbourhood? International Journal of Urban and Regional Research, 10(2), pp.243–263. Available at: http://doi.wiley.com/10.1111/j.1468-2427.1986.tb00014.x [Accessed October 2, 2015].

Guest, A.M. & Wierzbicki, S.K., 1999. Social Ties at the Neighborhood Level: Two Decades of GSS Evidence. Urban Affairs Review, 35(1), pp.92–111. Available at: http://uar.sagepub.com/content/35/1/92.short [Accessed September 1, 2015].

Hugenberg, K. & Sczesny, S., 2006. On Wonderful Women and Seeing Smiles: Social Categorization Moderates the Happy Face Response Latency Advantage. Social Cognition, 24(5), pp.516–539. Available at: http://guilfordjournals.com/doi/abs/10.1521/soco.2006.24.5.516 [Accessed November 28, 2012].

Hur, M. & Morrow-Jones, H., 2008. Factors That Influence Residents' Satisfaction With Neighborhoods. Environment and Behavior, 40(5), pp.619–635. Available at: http://eab.sagepub.com/content/40/5/619.abstract [Accessed October 3, 2015].

Hur, M., Nasar, J.L. & Chun, B., 2010. Neighborhood satisfaction, physical and perceived naturalness and openness. Journal of Environmental Psychology, 30(1), pp.52–59. Available at: http://www.sciencedirect.com/science/article/pii/S0272494409000437 [Accessed September 15, 2015].

Johnson, S., 2010. Where Good Ideas Come From: The Natural History of Innovation, New York: Riverhead Books.

Kamitsis, I. & Francis, A.J.P., 2013. Spirituality mediates the relationship between engagement with nature and psychological wellbeing. Journal of Environmental Psychology, 36, pp.136–143. Available at: http://www.sciencedirect.com/science/article/pii/S0272494413000558 [Accessed November 8, 2013].

Kearns, A. & Parkinson, M., 2001. The Significance of Neighbourhood. Urban Studies, 38(12), pp.2103–2110. Available at: http://usj.sagepub.com/content/38/12/2103.extract# [Accessed July 28, 2015].

Kennedy, D.P. & Adolphs, R., 2011. Social neuroscience: Stress and the city. Nature, 474(7352), pp.452–3. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21697937 [Accessed October 12, 2012].

Kirita, T. & Endo, M., 1995. Happy face advantage in recognizing facial expressions. Acta Psychologica, 89(2), pp.149–163. Available at: http://www.sciencedirect.com/science/article/pii/0001691894000218 [Accessed November 28, 2012].

Layard, R., 2005. La felicidad. Lecciones de una nueva ciencia, Madrid: Tauros.

Layard, R., 2010. Measuring subjective well-being. Science, 327(5965), pp.534–535. Available at: http://www.sciencemag.org/content/327/5965/534.short [Accessed February 10, 2012].

Lederbogen, F. et al., 2011. City living and urban upbringing affect neural social stress processing in humans. Nature, 474(7352), pp.498–501. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21697947 [Accessed October 7, 2012].

Leslie, E. & Cerin, E., 2008. Are perceptions of the local environment related to neighbourhood satisfaction and mental health in adults? Preventive medicine, 47(3), pp.273–8. Available at: http://www.sciencedirect.com/science/article/pii/S0091743508000510 [Accessed October 2, 2015].

MacKerron, G. & Mourato, S., 2009. Life satisfaction and air quality in London. Ecological Economics, 68(5), pp.1441–1453. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0921800908004643 [Accessed March 29, 2012].

Marans, R.W., 1976. Perceived Quality of Residential Environments. In K. H. Craik & E. H. Zube, eds. Perceiving Environmental Quality. Boston, MA: Springer US, pp. 123–147. Available at: http://link.springer.com/10.1007/978-1-4684-2865-0_7 [Accessed October 3, 2015].

Marans, R.W. & Rodgers, W.L., 1974. Toward an understanding of community satisfaction. In A. H. Hawley et al., eds. Metropolitan America: Papers in the State of Knowledge. Washington D.C.: National Acad Sciences, pp. 299–352.

Marans, R.W. & Stimson, R.J., 2011. An Overview of Quality of Urban Life. In R. W. Marans & R. J. Stimson, eds. Investigating Quality of Urban Life: Theory, Methods, and Empirical Research. Springer, pp. 1–29.

Max-Neef, M.A., Elizalde, A. & Hopenhayn, M., 1991. Human Scale Development. Conception, application and further reflections, New York & London: The Apex Press. Available at: http://www.max-neef.cl/download/Max-neef_Human_Scale_development.pdf.

Mesch, G.S. & Manor, O., 1998. Social Ties, Environmental Perception, And Local Attachment. Environment and Behavior, 30(4), pp.504–519. Available at: http://eab.sagepub.com/content/30/4/504.abstract [Accessed September 3, 2015].

Moro, M. et al., 2008. Ranking quality of life using subjective well-being data. Ecological Economics, 65(3), pp.448–460. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0921800908000281 [Accessed March 16, 2012].

O'Brien, C., 2005. Planning for Sustainable Happiness: Harmonizing Our Internal and External Landscapes. In Rethinking Development: 2nd International Conference on Gross National Happiness. Antigonish, Nova Scotia, Canada, pp. 1–22. Available at: http://www.gpiatlantic.org/conference/papers/obrien.pdf [Accessed February 10, 2012].

Orrell, D., 2010. Economyths: How the science of complex systems is transforming economic thought, London: Icon Books Ltd.

Papachristou, I.A. & Rosas-Casals, M., 2015. An integrative methodology for the quality of life measurement in urban places based on the accomplishment of human needs. In UN-Habitat Future of Places III Conference. Stockholm.

Pavot, W. & Diener, E., 1993. A review of the satisfaction with life scale. Psychological Assessment, 5(2), pp.164–172. Available at: http://doi.apa.org/getdoi.cfm?doi=10.1037/1040-3590.5.2.164 [Accessed April 30, 2012].

Pearce, D. & Ozdemiroglu, E., 2002. Economic Valuation with Stated Preference Techniques: Summary Guide, London: Edward Elgar Publishing Ltd. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191522/Economic_valuation_with_stated_preference_techniques.pdf.

Phillipson, C. et al., 1999. Older people's experiences of community life: patterns of neighbouring in three urban areas. Sociological Review, 47(4), pp.715–743. Available at: http://doi.wiley.com/10.1111/1467-954X.00193 [Accessed October 6, 2015].

Rhodes, G. et al., 2003. Fitting the mind to the world: face adaptation and attractiveness aftereffects. Psychological Science, 14(6), pp.558–566. Available at: http://pss.sagepub.com/lookup/doi/10.1046/j.0956-7976.2003.psci_1465.x [Accessed November 28, 2012].

Di Tella, R. & MacCulloch, R., 2006. Some uses of happiness data in economics. The Journal of Economic Perspectives, 20(1), pp.25–46. Available at: http://www.people.hbs.edu/rditella/papers/JEPHappyData.pdf [Accessed November 5, 2012].

United Nations, 2014. World Urbanization Prospects The 2014 Revision Highlights, New York. Available at: http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf.

Veenhoven, R., 2003. Happiness. The Psychologist, 16(3), pp.128–129. Available at: http://www2.eur.nl/fsw/research/veenhoven/Pub2000s/2003d-full.pdf.

Veenhoven, R., 2007. Subjective Measures of Well-being. In McGillivray, ed. Human Well-being, Concept and Measurement. Houndmills, New Hampshire, USA: Palgrave /McMillan, pp. 214–239.

Weidemann, S. & Anderson, J.R., 1985. A Conceptual Framework for Residential Satisfaction. In I. Altman & C. M. Werner, eds. Home Environments. Boston, MA: Springer US, pp. 153–182. Available at: http://link.springer.com/10.1007/978-1-4899-2266-3_7 [Accessed September 14, 2015].

Weiner, E., 2008. The geography of Bliss, London: Black Swan.

White, N.P., 2006. A brief history of happiness, Oxford: Blackwell Publishing.

Wolfgang, B., 2002. Web-Surveys - An Appropriate Mode of Data-Collection for the Social Sciences? In B. Batinic et al., eds. Online social sciences. Ashland, OH, US: Hogrefe & Huber Publishers, pp. 1–6.