Perceived insecurity in the public space: personal, social and environmental variables

D. Carro · S. Valera · T. Vidal

Abstract   Perceived insecurity in the public space: Personal, social and environmental variables. This paper explores perception of insecurity among the users of Barcelona's public space. It describes the results of a research aimed to determine the key variables for the understanding of subjective insecurity. Structural equation models have been applied for this purpose. Results show low relative indices of causality for environmental variables, whereas those related to space representation, residential satisfaction and urban identity, social support and personal competences offer high predictive potential. It is concluded that insecurity perceptions in the public space are therefore strongly linked to social interaction processes and to the social construction of insecurity. Other results, like the influence of gender or age, are consistent with previous findings.

Keywords   Subjective insecurity · Public Space · Representations of dangerous places · Social construction of insecurity · Risk perception · Fear of crime

1 Introduction

The public's perceptions of insecurity have become one of the main problems in our cities (Amerio 1999), with important psychological and psycho-social consequences (Ute and Greve 2003; Amerio and Roccato 2005). Frequently, these perceptions tend to relate to the

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presence of communities of immigrants, especially from Latin America and the Islamic countries (Gutiérrez et al. 2004). This poses the danger of 'legitimising' an 'ideology of security' with racist threats (Jeudy 1986).

In this paper, the importance of psychological, social and environmental variables will be analysed in relation to the perception of insecurity in the public space, by means of structural equation models. The effectiveness of this methodology when dealing with complex social phenomena has already been verified (Barrón and Sánchez 2001).

1.1 Fear of crime, dangerous places and perceived risk

In psycho-social literature the analysis of public insecurity is normally linked to the study of fear of crime, the characterisation of dangerous places and the processes of risk perception.

In relation to the fear of crime, one recent revision (Miceli et al. 2004) offers some key elements for its understanding and analysis: (1) level of objective crime (especially misde-meanours), although it is well known that not all crimes have the same influence in the fear sensation, as well as that fear, while subjective, is frequently not directly related to the objec-tive data from crime experience; (2) physical or social uncivil behaviour (vandalism, graffiti, wandering, damage to urban furniture, etc.), insofar as it reflects social degradation or poses a potential threat (Roché 1993); (3) urban life (Skogan and Maxfiekd 1981), including issues like density, difficulty of social integration, size of the buildings, aggressiveness of street life or level of vegetation (Kuo and Sullivan 2001); (4) socio-demographic variables, especially gender and age since, despite some criticism (Reid and Konrad 2004), numerous studies agree that fear of crime is usually higher in women, elderly people or the youngest (Warr 1984; Gardner 1990; Saldívar et al. 1998; Mesch 2000; García Cueto et al. 2003; Amerio and Roccato 2005); and (5) psycho-social variables, which relate the fear of crime to the per-ception of vulnerability and one's reduced capacity to confront the situation (Moser 1985). In this sense, Van der Wurff et al. (1989) describe four variables associated to the fear of crime: the perception of being an attractive objective for the delinquent, the demonisation of the intentions of other people or groups, the power to control the situation (or confidence feelings) and the criminalisable space, as a source of insecurity and threats.

This last element leads us to consider another approach to the subject of insecurity in urban scenarios: the characterisation of dangerous places (Fernández 1995; Fernández and Corraliza 1996, 1997, 1998). A dangerous place 'is a place or scene that the person associates with possible criminal or marginal activities, in the absence of possible social supports' (Fernandez 1998, p. 271). These authors have distinguished between two perspectives of study: one being related to the psycho-social processes of information and opinion diffusion at neighbourhood level and another one focusing on the contextual and environmental aspects of the moment when the person intuits danger and reacts with fear. The neighbourhood perspective emphasises the psycho-social dynamics of information dissemination on criminal subjects, be it as a consequence of direct experiences or indirect information; additionally, the people's confidence in their support network or informal social control is also important. On the other hand, the contextual perspective stresses the socio-physical characteristics of dangerous places (Wilcox et al. 2002), therefore considering highly relevant a set of variables that include issues like environmental deterioration, uncivil behavioural traces (Robinson et al. 2003), the presence of apparently dangerous people, one's competences to cope with the dangerous situation, the availability of escape routes or perceived social support (Lawton 1982; cited in Fernandez 1998), etc.

On the other hand, lately, risk perception is not being considered an antecedent variable of fear of crime anymore; instead, more and more, both tend to be thought of as interrelated constructs. Thus, Rader (2004) proposes speaking of a wider concept—'victimisation threat'—, with three components: an affective component (fear of crime), a cognitive one (perceived risk) and another one of behavioural nature (restricted behaviours), with complex and reciprocal relations among them.

Also, recently, some authors have called for the inclusion of issues like residential satisfaction and place attachment (particularly at neighbourhood level) in the set of insecurity perception explanatory variables. In this direction, Fernández and Corraliza (1998) describe a factor linked to the neighbourhood valuation, which includes residential satisfaction; something similar to this is also found in other studies (Martínez et al. 2002). On the other hand, the attachment to the neighbourhood (Brown et al. 2003) or the sense of community (Wilson-Doenges 2000) can be important shapers of fear of crime and the perception of 'victimisation' risk.

1.2 Insecurity perception

From existing literature on the subject, a proposal of theoretical model explaining personal insecurity was elaborated, inspired by the works of Fernández and Corraliza. Thus, three latent factors or variables, hypothetically related to insecurity perceptions, were defined.

The first factor corresponds with what we have denominated 'Personal Competences to Cope' and includes variables associated to personal vulnerability (age, gender), as well as those related to coping strategies: social support and cognitive (belief in one's capacity), emotional (fear of crime) and behavioural control (active or passive self-protection).

A second block, called 'Representation of the space', has to do with what Fernández and Corraliza (1997) denominate the neighbourhood perspective, that is to say: variables related to direct or indirect previous experiences in the place and its surroundings, as well as the processes of social influence that determine the representation of a dangerous place.

Finally, the third factor relates to what has been labelled as the contextual perspective. This factor is denominated in the paper as 'Dangerous environment'. It refers to the characteristics of the space, including both physical (such as visual control, illumination, vandalism or time of the day) and social aspects (such as presence of potential aggressors, available opportunities of social support or patterns of space occupation).

Other important variables, like residential satisfaction and urban identity, are complexly related to many of the previous ones. For this reason, and although it could initially be assigned to the 'Space Representations' factor (on the basis of the research by Fernández 1998), its final behaviour is, a priori, uncertain. The resulting theoretical model can be observed in Fig. 1.

1.3 Research goals

The main goal of this research is to explore the perception of insecurity among the users of the public space in a neighbourhood of the city of Barcelona, analysing and describing the key environmental, social and personal variables in order to understand subjective insecurity.

The research has been undertaken in one of the most traditional districts of the city of Barcelona—the 'Poble Sec' neighbourhood—located between the mountain of Montjuïc and the old city. The study of this socio-physical space is particularly interesting for an investigation of this type, given its environmental (narrow streets with lofty buildings, old
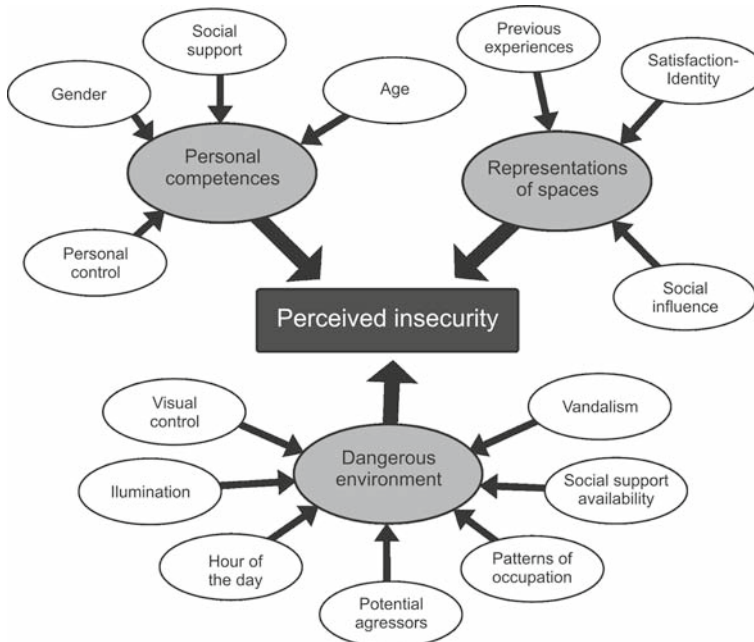
Fig. 1 Graphical representation of the general theoretical model of insecurity perception

houses, proximity to the mountain of Montjuïc) and socio-demographic characteristics (aged population, massive recent arrival of Latin American, African and Asian immigrants). In addition, and according to diverse sources, Poble Sec is one of the districts of Barcelona in which the question of insecurity has generated broader debate during the last years.

2 Method

2.1 Sample

The sample includes 358 people, selected by accidental sampling, from the population of users of the public space of Barcelona's Poble Sec district. Only persons older than 15 years of age were considered. In order to improve the design and gain control, the subjects were interviewed in different days of the week and at different moments of the day: mornings (29.1%), afternoons (33.5%) and evenings (37.4%).

The sample is constituted by 183 men and 175 women (51.1 and 48.9%, respectively). The average age is 38.71, with a standard deviation of 18.17. An 86% of the people interviewed declared to reside habitually in the district studied. In addition, an 18.4% of the total interviewees are immigrants who now reside in this district of Barcelona.

2.2 Instrument

The data was gathered by means of a questionnaire which adapted the instruments used by Fernández and Corraliza (1997) in their studies on fear of crime and dangerous places. It

consists of 31 closed items that score in a Likert-type scale of 4 points. The dimensions covered by the items are: (a) perception of insecurity—both as normal experience and as an estimation of risk, (b) previous experience of significant incidents, (c) processes of social influence in relation to insecurity, (d) personal control to confront risk situations, (e) presence of potential aggressors and (f) residential satisfaction and urban identity. Furthermore, eight items propose judging, in a scale from 1 to 10, different aspects of the environmental quality of the public space; ten other items, with a dichotomic answering possibility (yes/no), explore the repertoire of normal behaviours in the space (conceived as regular uses). In addition, the questionnaire includes open questions so that the subjects can answer questions such as the kind of incidents they remembered suffering, being present at or hearing of (and which could be insecurity source) or the kind of problems that could happen to them when in the public space. Finally, the questionnaire ends with the basic demographic variables, such as gender, age and the place of residence.

3 Results

3.1 Scales of subjective insecurity perception and residential satisfaction and identity

From the set of results obtained, and in order to contextualise the later analyses properly, it is necessary to describe two scales that emerge from the analysis of the items.

In the first place, the three first items of the questionnaire refer explicitly to the perception of insecurity: 'Immediately before the interview you felt in this place…', 'Normally, when you are in this place you feel…', 'Compared to other zones of the city that you frequent, you would say that this place is…'. The joint analysis of these three items has allowed considering a 'Scale of Perception of Subjective Insecurity', with the parameters and scores as given in Tables 1 and 2.

Recent studies have revealed a significant difference between the general public and experts in laws regarding the perception of the degree of relevance of crimes that frequently happen in the public space, such as verbal threats, harassment or violation (García Cueto et al. 2003). Additionally, in this work, as in similar others (Warr 1984; Gardner 1990), the gender variable shows statistically significant differences on this issue, since women tend to feel more

Table 1 Description of the insecurity scale

Name of the scale	Development	Scores range	Meaning of extremes	Cronbach's Alpha	Number of items
Subjective insecurity (insecurity)	Insecurity = It1 + It2 + It3 − 2	1–10	1 = Perceived insecurity maximum 10 = Perceived security maximum	0.817	3

Table 2 Total average scores and gender differences

Gender	Average scores	n	Standard deviation
Men	7.92	179	2.059
Women	7.32	168	2.134
Total	7.63	347	2.115

Table 3 Description of the scale of residential satisfaction and social cohesion

Name of the scale	Development	Scores range	Meaning of extremes	Cronbach's Alpha	Number of items
Residential satisfaction and urban identity (Satisf)	Satisf = It25 + It26 + It27 + It28 + It29 + It30 − 5	1–19	1 = Dissatisfaction maximum	0.750	6
			19 = Satisfaction maximum		

Table 4 Average scores for the total scale, as well as for men and women

Gender	Average scores	n	Standard deviation
Men	12,0758	132	3,70397
Women	11,1504	133	3,59186
Total	11,6113	265	3,67061

insecure than men do ($t = 2.693$; $p < 0.05$); in average scores, though, both men and women tend to feel generally secure. Also, the immigrants tend to show higher levels of personal security ($M = 8.43$, $SD = 1.784$) than the native respondents ($M = 7.45$, $SD = 2.144$), this difference being statistically significant ($t = 3.370$; $p < 0.05$).

The second scale elaborated from the data has to do with residential satisfaction and urban identity, one of the variables that have more clearly been related to the multitude of phenomena around the concept of neighbourhood. From Milgram's studies (1984) on social representation of the urban space, to the elaborations of Amérigo (1995) on residential satisfaction or the works on urban social identity (Valera and Pol 1994; Valera 2002) and the CIS-paradigm (CIS: City-Identity-Sustainability) (Pol 2002; Valera and Guàrdia 2002), the factors of 'satisfaction with the neighbourhood', 'social cohesion' and 'social identity' have shown their relevance in the explanation of many different urban social phenomena. The scale that is derived from this study, denominated 'Scale of Residential satisfaction and urban identity', consists of six items and includes residential satisfaction, identification with the neighbourhood, social cohesion and perceived social homogeneity (Tables 3, 4).

The scores indicate, in general terms, a high degree of satisfaction and identification with the neighbourhood, significantly more accentuated in men than in women ($t = 2.065$; $p < 0.05$), whereas statistically significant differences between immigrant and native respondents are not observed.

Confirming the expectations, these two scales described previously show a positive correlation ($r = 0.285$; $p < 0.05$), which means that the perception of security and the level of satisfaction and identification with the neighbourhood are closely related (Table 5).

The age variable, on the other hand, shows different relations to these scales: it correlates inversely with the scale of security perception (which confirms, also in this study, that insecurity perception tends to increase as people get older), but does not significantly correlate with the satisfaction-identity scale.

3.2 Structural Equation Model Analysis

The data collected with the questionnaire have been analysed with AMOS 5.0 in order to evaluate the adjustment of the general theoretical model, which has been elaborated by

Table 5 Pearson's correlation indices between the age and the scales of perceived insecurity (insecurity) and residential satisfaction and urban identity ('satisfaction')

	Satisfaction	Insecurity	Age
Satisfaction			
Correlation	1		
n	265		
Insecurity			
Correlation	0.285*	1	
n	262	347	
Age			
Correlation	0.070	− 0.174*	1
n	265	347	358

* Significant correlations with $\alpha = 0.05$

integrating relevant previous works. This model has already been mentioned previously (Fig. 1).

Developing the general model, a structural model of relations between observed and latent variables has been constructed. In this model, the perception of subjective insecurity behaves like the dependent or endogenous variable. Essentially, it is assumed that the perception of insecurity in the public space can be predicted from three constructs:

- The environmental quality of the place, described similarly to what Fernández and Corraliza (1997) denominate situational perspective. This refers to environmental variables that characterise the place from the point of view of potential insecurity (illumination, level of transit, traces of uncivil behaviour, degree of deterioration, presence of potential aggressors, etc.).
- The representation of the space like a 'safe' place. This construct relates to the neighbourhood perspective of Fernández and Corraliza (1997) and is predicted from the previous experience of the person with the place (particularly, to the knowledge or direct experience of risk situations) and from the social influence processes, by which the opinions of other significant people can affect one's representation of the space.
- The profile of personal competences to cope with dangerous situations; therefore regarding variables such as age, sex, availability of social support in dangerous situations or degree of control (affective, cognitive and behavioural control) when faced with those situations.

In addition, the model also describes some effects of the construct 'Satisfaction and Urban identity': on the one hand, a bidirectional influence with the availability of perceived social support in the public space is described; on the other, it is assumed that residential satisfaction is a significant antecedent of the representation of the space regarding the issue of insecurity (Fernández 1998).

In order to reduce the complexity of the model, as well as the number of parameters to estimate, 'Satisfaction and cohesion' has been considered an observed variable, using the score of the 'Satisfaction and urban identity' scale and fixing its error variance to 3.4. This calculation is based on the reliability of the scale and the variance of the additive score (VAR = 13.5).

In addition, the model analysed reflects some other more specific relations between variables, which, in general, improve its adjustment. These relations are, in all cases, consistent with the theoretical assumptions. Thus:

- Recent personal experiences of fear of crime are considered a predictor of subjective insecurity.

Table 6 Cut-off criteria that have been followed to test the fit of the structural model

Indicator	Cut-off criteria
Chi-square	$<2 \times df$ (degrees of freedom)
AGFI	>0.9
CFI	>0.95
SRMR	<0.08

- Residential satisfaction and urban identity behave like an independent variable with respect to the environmental quality perception.
- The relation between the perceived support and the profile of personal competences (understood as capability to cope) is bidirectional, since the more a person feels defenceless before the aggressions, the more they tend to diminish their perception of social support.
- The degree of emotional control, as expressed in the item 'In general I am easily scared', is directly influenced by gender.

The estimation of the model adjustment to the data has been calculated from a matrix of variances–covariances, using the Maximum Likelihood estimation method. This method assumes multi-normal distribution in all the variables of the model; in this case, the sample size ($n = 358$) is considered high enough to compensate the problems derived from some cases of not-normality in the variables included in the analysis (Hayduk 1996).

When estimating the model adjustment, the recommendations of Hu and Bentler (1999) have been followed, thus adopting an approach based on the estimation and contrast of several indicators, including standardised root mean square residual (SRMR). In this case, Chi-square, adjusted goodness of fit index (AGFI) and comparative fit index (CFI) have also been included in the analysis. Thus, the contrast of the model from different perspectives is guaranteed. The criteria followed in order to test whether the adjustment is good enough gather together Hu and Bentler's suggestions (1999), as well as other common and conventional recommendations (Table 6).

After all this, Fig. 2 shows the resulting model, with the standardised coefficients and the indices of adjustment.

According to the initial statistical criteria (Table 6), the model adjustment is good enough in all the different indicators as to conclude that, given these data, it is not possible to reject the model. Provisionally, therefore, it can be considered a suitable model of subjective insecurity perception in the public space.

As shown in Fig. 2, the model explains an average of 30% of the variance of the items taken as indicators of subjective insecurity. In additional analyses with this same model, it has been found that the highest total standardised effects for the latent variable denominated 'subjective insecurity' correspond to 'social influence' (0.567), 'perceived support' (0.462), the profile of personal competences (-0.601) and the representation of the space (0.553).

4 Discussion

Insecurity perception is one of the questions that most dramatically conditions interventions in the public space, as well as other general urban policies. Since it is normally associated to very complex and diverse phenomena (from demographic and migratory dynamics to the quality of the illumination and the conservation of the space, for instance), it seems
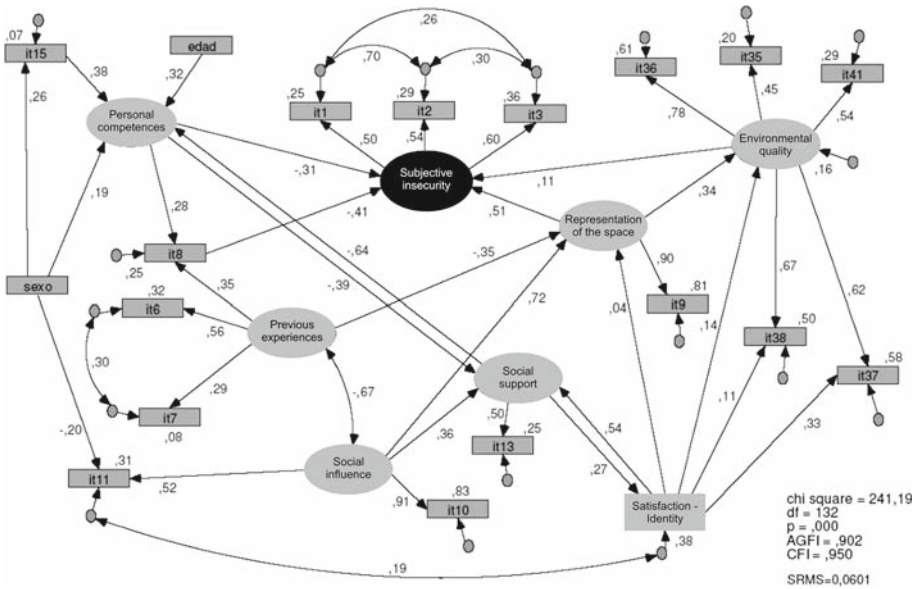
Fig. 2 Structural equation model of perceived insecurity. Standardised coefficients and fitting indices resulting from the analysis

evident that trying to group the diverse variables that can affect the emergence of insecurity perceptions in a certain context into a simple and reduced model should not be an easy task. In fact, the studies aimed to describe insecurity perception systematically conclude the need to consider several complexly-interrelated variables.

In line with this, this paper describes the complexity of the psycho-social-environmental processes associated to insecurity perception but, at the same time, it shows that a rigorous and theory-oriented approach is indeed useful in order to understand some of the interactions that precede the insecurity judgements. In this sense, it is relevant to emphasise, as a first contribution, the validation of the models that—with exploratory methodologies—summarise the sources of insecurity into two great categories of variables (the situational and the neighbourhood perspective—as denominated by Fernández and Corraliza 1997). To this set, it is necessary to add some personal variables related to the personal profile of competences to cope with the risk situation and/or to shape the victimisation potential.

The apparently-low explained percentage of variance of the insecurity perception items should not be considered a critical factor, since it is evident that the issue of insecurity, due to its high and current social relevance, includes some other dimensions that have not been included here—like the broader issue of immigration and insecurity, the general trust in public administrations (largely in charge of promoting policies that enhance security) or the more general ideological arguments regarding the management of public spaces, the policies of behavioural control and restriction and the crime prevention and repression.

Regarding the information contained in the model, it is important to emphasise the low relative indices of causality of the environmental variables in subjective insecurity, in contrast with the more elevated ones of space representation, residential satisfaction and urban identity, perceived availability of support and—in general—the personal profile of competences to cope with risk situations. In short, this finding shows that the apparent relevance of public insecurity in the studied space is linked to issues of social interaction and reality construction through social discourses and not to the environmental characteristics of the space. According

to the expositions of Fernández and Corraliza (1996, 1997, 1998), this study shows that the so-called neighbourhood perspective is much more relevant for the understanding of the insecurity levels (generally low, in any case), than the situational variables (which were here summarised, especially, around the 'environmental quality' factor). A number of evident implications for political management derive from this affirmation.

It is also interesting to emphasise the importance of the issues associated to residential satisfaction, social cohesion and identity: not only does this construct perform as a good predictor of the space representation and the perceived availability of support, but also the elevated indices of residential satisfaction largely condition people's judgements on environmental quality, here understood as the presence or absence of risk factors in the surroundings.

Other results of the investigation confirm some hypotheses based on previous studies on insecurity perception, such as that, generally, women tend to show a somewhat higher perception of insecurity than men or that there normally exists an inverse correlation between the perception of security and the age (the higher the age, the greater the perceived insecurity). The coherence of these results increases the general reliability of the study and confers a greater solidity to the proposed structural model.

In any case, and as it corresponds to an investigation on the environmental psychology field, it is necessary to stress the importance of considering this data in relation to the socio-physical space where it has been gathered (Barcelona's Poble Sec district). The complexity of the relations between social, demographic and environmental variables makes it advisable to extend the application of the model to other urban contexts, in order to generalise its validity.

Appendix

Content of the items included in the analysis of structural equations

Observed variable	Content of the item
It1	Before talking to me, you felt in this place…(safe–unsafe)
It2	When you're in this place you normally feel…(safe–unsafe)
It3	Compared to other places in Barcelona where you go regularly, this place is rather…(safe–unsafe)
It6	During the last few weeks, how often have you heard people close to you say they have experienced any trouble in this place?
It7	During the last few weeks, how often have you experienced or seen any trouble in this place?
It8	During the last few weeks, how often have you been afraid that anything might happen to you in this place?
It9	You would say that this neighbourhood is rather…(safe–unsafe)
It10	People close to me generally consider that this neighbourhood is rather…(safe–unsafe)
It11	Most people in Barcelona think that this neighbourhood is rather…(safe–unsafe)
It13	Should someone try to rob or assault me, there are people here who could help me (agree–disagree)
It15	In general, I get easily scared (agree–disagree)
Residential satisfaction and social cohesion	I like living in this neighbourhood (agree–disagree)
	If I could, I would like to live in another neighbourhood of the city (agree–disagree)

Appendix continued

Observed variable	Content of the item
	Most people in this neighbourhood are really linked to each other (agree–disagree)
	Most people living in this neighbourhood have similar tastes and customs (agree–disagree)
	In this neighbourhood we all know each other (agree–disagree)
	I feel strongly identified with this neighbourhood (agree–disagree)
It35	Night lighting of this place is adequate (0–10)
It36	The general upkeep of this place is adequate (0–10)
It37	This place is pleasant (0–10)
It38	This place is clean (0–10)
It41	This place is broad (0–10)

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