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Realistic regeneration : housing contexts and social outcomes of neighbourhood interventions in Western European cities

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Publication date
2009

[Link to publication](#)

Citation for published version (APA):

van Gent, W. P. C. (2009). *Realistic regeneration : housing contexts and social outcomes of neighbourhood interventions in Western European cities*. [Thesis, fully internal, Universiteit van Amsterdam].

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3. Estates of content: Regeneration and neighbourhood satisfaction

VAN GENT, W. P. C. (2009, forthcoming) Estates of Content; Regeneration and Neighbourhood Satisfaction. IN VAN KEMPEN, R., MUSTERD, S. & ROWLANDS, R. (Eds.) *Mass Housing in Europe: Multiple Faces of Development, Change & Response*. Hampshire, Palgrave. © Palgrave Macmillan Publishers.

3.1 Introduction

To tackle urban social problems, policy makers in several European countries are increasingly relying on so-called integrated, multi-sector, area-based initiatives (or policies) (Parkinson, 1998). Policies, like the Dutch Big Cities Policies and the British New Deal for Communities, focus on tackling urban social problems at the neighbourhood level and strive to regenerate a selection of 'worst' neighbourhoods. Often the objectives of neighbourhood regeneration efforts are to tackle social economic deprivation as well as to improve 'liveability' in the targeted areas. Liveability is a subjective notion among residents that refers to place-based elements which are related to the daily living environment. These elements may include the quality of the housing stock, urban design, physical appearances, cleanliness, quality of public space, safety, and perhaps some degree of social interaction among neighbours. Likewise, a great deal of interventions are aimed at improving the liveability of the environment by improving and renovating public space and apartment blocks, by improving access to services, preventing the senses from drowning in odours, and by dealing with crime. The expectation is that regeneration will have a positive influence on the residents' perception of their neighbourhood. This is reflected in the importance of the perception, or satisfaction, of residents in regeneration policy evaluations (e.g., Leidelmeijer and Van Kamp, 2003, Neighbourhood Renewal Unit, 2005). Thus, resident perceptions of the situation and direction of the neighbourhood is an important outcome of neighbourhood policies that aim to increase liveability.

Instinctively one may think that neighbourhood regeneration, in the end, will positively affect neighbourhood satisfaction. However, satisfaction as a key predictor of liveability and as a measure to judge the success of neighbourhood regeneration efforts in the public and private sector, is not as straightforward as it may seem. Feelings of satisfaction are very much related to the type of neighbourhood that residents are living in and to residents' own expectations and socio-economic status (Pan Ké Shon, 2007). In other words, it depends on the context of the estate.

The aim of this chapter is to explore the relation between neighbourhood regeneration and perception among residents concerning the neighbourhood. More specifically, the aim is to illuminate the causal relation of neighbourhood regeneration together with other possible determinants on satisfaction with the neighbourhood. To account for the other determinants, the research strategy includes a causal analysis based on logic. This relatively novel type of analyses makes it possible to use both quantitative and qualitative case study data. Furthermore, it allows the assessment of the effects of neighbourhood regeneration on neighbourhood satisfaction while controlling for other possible determinants. The analyses were conducted on 29 European post-war housing estates that have been subject to some form of neighbourhood regeneration. The main questions to be addressed are: first, what factors affect neighbourhood satisfaction and dissatisfaction in large-scale post-war housing estates, and second, how do these factors relate to neighbourhood regeneration policies?

3.2 Studying satisfaction

There have been a number of studies into residents' perceptions and satisfaction in recent years (e.g. Kearns and Parkes, 2003, Pan Ké Shon, 2007, Parkes et al., 2002, Shields and Wooden, 2003, Sirgy and Cornwell, 2002). But also in the past, many studies have sought out which residential perceptions are associated with satisfaction and dissatisfaction (e.g. Baldassare, 1982, Cook, 1988, Davis and Fine-Davis, 1981, Fried, 1984, Herting and Guest, 1985, Michelson, 1977, Miller et al., 1980). Despite these studies, a solid theoretical explanation of the causality of satisfaction and discontent is often lacking (Priemus in Leidelmeijer and Van Kamp, 2003). Studies usually employ indicators that relate to a set of residential and neighbourhood characteristics, such as demographic composition, ethnicity, income and employment, social cohesion, access to facilities and services, safety and the (built) environment.

Apart from neighbourhood characteristics, satisfaction is also dependent on personal dispositions. Demographic indicators reveal some regularity in feelings of satisfaction. Younger people are generally more dissatisfied with their neighbourhood than the elderly (Davis and Fine-Davis, 1981, Miller et al., 1980). Cook (1988) found a negative relationship between neighbourhood satisfaction and expected changes in standard of living, which might explain why certain young people are generally less satisfied, since they feel a large discrepancy between expectations and current situation (Davis and Fine-Davis, 1981, Parkes et al., 2002).

US evidence indicates that when residents in disadvantaged areas do not expect any change in their personal situation, they may reduce their aspirations and adapt their expectations of their living environment, which would limit dissatisfaction levels and may even produce a modicum of satisfaction (Galster, 1985). This phenomenon is referred to as cognitive dissonance reduction in social psychology. However, cognitive dissonance theory is only one of multiple theories in social psychology emphasising that people try to achieve consistency among conditions (see Shultz and Lepper, 1996). Consistency may also be achieved through free choice. So the amount of choice on the housing market affects the reliability of neighbourhood satisfaction.

Although choice of type of dwelling and neighbourhood will always be constrained by income and personal wealth (the 'iron law' of the housing market, Priemus, 1978), it is unclear what degree of 'residential entrapment' will impinge upon resident perceptions and opinions. Kearns and Parkes (2003) found that residents in 'distressed' areas in the UK are not more immune or accustomed to negative conditions; nor were they more sensitive to negative influences than the general population. However, the type of neighbourhood does seem to matter for the overall satisfaction levels. A French study shows that perception of the neighbourhood is the result of the interplay between various factors (Pan Ké Shon, 2007). These factors include both personal inclinations as well as characteristics of the neighbourhood. The importance of these characteristics differs per type of neighbourhood. Working class and poor neighbourhoods appear to have a negative effect on the expectations and perceptions of individuals in all socio-occupational classes. In other words, there seems to be one or more conditions in these neighbourhoods that affect the perception of all residents. The study points to age structure, ethnic composition and its meaning in French society, lack of access and segregation as possible explanations and to the need for place-based policy interventions in poor and working class neighbourhoods to improve liveability and satisfaction.

3.3 Three mechanisms that affect neighbourhood satisfaction

Drawing on Buck (2001), who has distinguished several causal pathways of neighbourhood effects on adult residents, I propose that residents' perceptions can originate through social, physical, and institutional mechanisms. These mechanisms will provide us with the variables for analysis.

Physical mechanism: quality and design

Some have argued a direct relation between design and criminal or anti-social behaviour as poor design give opportunities for criminal behaviour and obstructed lines of sight forestall social control (e.g., Newman, 1972). The assumption is that the impersonal and dreary architecture as well as unsafe design negatively affect the residents and their perception. However, there does not appear to be a singular causal relation between the built environment and neighbourhood satisfaction. The social functioning of a neighbourhood seems to depend largely on the residents, and thus on social mechanisms, and not on design and management (Van Kempen and Musterd, 1991). Van Kempen (1994) argues that the relation between residential attitudes and design is complex and is also determined by the housing market, building type and especially location. Other authors draw a link between the neighbourhood's physique and its reputation, which affects identity and perception (Dickens, 1994). Another argument is that residents experience distress and possibly dissatisfaction, when they lack social and environmental control (control over place to dwell and over who they meet and live next to), which is often the case in more densely populated areas (Baldassare, 1982).

To be clear, extremities such as severe dilapidation of buildings, neglect of public spaces, and unsafety, do reflect on people's perception of their neighbourhood and their satisfaction with it. Herting and Guest (1985) found that static appearances matter more than more mobile variables such as noise, air pollution and traffic. Parkes et al. (2002) state that satisfaction with housing and the general appearance of the area are most strongly related to neighbourhood satisfaction. Sirgy and Cornwell (2002) found that satisfaction with the neighbourhood physical features such as upkeep of buildings and yards, landscapes, etc. are important for life satisfaction and thus affect decisions to move. Furthermore, housing satisfaction plays a determining role for the perception of the neighbourhood (Lu, 1999). Davis and Fine-Davis (1981) also found a relation between the prevailing conditions of property in the vicinity and neighbourhood satisfaction. Furthermore, the perception of the environment's safety has a lasting impact on a neighbourhood's reputation and on the mindset of residents (Cook, 1988, Davis and Fine-Davis, 1981).

Social mechanism: social cohesion, and social mixing

There seems to be a consensus that social relations and community life positively affect life satisfaction (e.g. Baldassare, 1982, Prezza and Constantini, 1998, Sirgy and Cornwell, 2002). This also seems to be true on a neighbourhood scale. Various studies have found that residents appreciate social contacts and good relations with their neighbours (Davis and Fine-Davis, 1981, Herting and Guest, 1985, Sirgy and Cornwell, 2002). Social contacts with friends and family also positively affect residents' perception of the neighbourhood (Drukker and Van Os, 2003, Pan Ké Shon, 2007). The assumption is that social behaviour prevents isolation and encourages the acquisition of social capital in the neighbourhood (see e.g. Forrest and Kearns, 2001). Furthermore, it was found that dissatisfaction over a lack of social cohesion could be a reason for moving (Van Beckhoven and Van Kempen, 2006). In addition to social contacts, social cohesion is also shaped by factors such as the degree to which residents feel involved in decision-

making for the entire neighbourhood, membership of local associations, attachment to the neighbourhood. The assumption is that these factors positively affect the residents' perception of the neighbourhood. However, the residents may not necessarily constitute a single group, but may be divided along social or ethnic lines (see Dekker and Rowlands, 2005).

In light of our interest in neighbourhood regeneration, the social mix of a neighbourhood has to be mentioned here as well. Social mixing policies refer to the practice of attracting more affluent households with the (implicit) goal of improving liveability, alongside other objectives, such as reducing poverty, increasing manageability and stimulating economic growth. The assumption then is that the presence of middle class residents positively affects the lower classes (Ostendorf et al., 2001). The effects of social mixing would play out through various social mechanisms, such as the role model function, socialisation and political leadership of the middle class, quality of housing, self-government of homeowners, increased area reputation, increased social interactions and social capital networks (Kleinhans, 2004, Marcuse, 1994). Although the empirical evidence supporting these assumptions is ambivalent (Galster, 2007), social mixing strategies have been widely employed in the regeneration of post-war housing estates, especially in Western European estates.

There has been little research on the effect of social mixing on neighbourhood satisfaction. Views on the effects of social mixing range from the possibility of social harmony to potential powder keg. Parkes et al. (2002) found a weak relationship between social renters' satisfaction and a low share of social rental dwellings in the neighbourhood. However, the precise causality is unclear. In the literature social mix is generally related to socio economic differences between residents. However, there may also be a cultural component to the concept. Especially in Western European policy, social mixing relates to 'desegregating' migrant communities. A German study found that an ethnic presence matters for life satisfaction. Immigrants living in ethnic neighbourhoods are less satisfied with their standard of living and with their neighbourhood than immigrants in non-ethnic neighbourhoods. On the other hand, immigrants in neighbourhoods were no more likely to feel isolated from goods and services, to be concerned with crime, or to be living in buildings that are to be renovated than immigrants in non-ethnic neighbourhoods (Drever, 2004).

Institutional mechanism: access to services and amenities

The institutional model suggests that the importance of the availability of public services (Buck, 2001). A common institutional context may affect the perception of the neighbourhood either directly or indirectly. Good delivery of public service benefits the status and reputation of the neighbourhood, public health and equal opportunities. Basic public services usually include sufficient schools, welfare and health care. In addition, the availability of facilities such as shops, entertainment, financial and postal services are important as well. Besides their convenience, their mere presence signifies a thriving area, while absence could damage reputation like vacancies. Access to services also relates to wider access to financial (employment), cognitive (knowledge and information), political (to defend formal rights and fight discrimination) and social (social networks, leisure) resources. Access to public transport may prevent residents from feeling trapped in the neighbourhood (Murie et al., 2003), which could create dissatisfaction.

Davis and Fine-Davis (1981) found that perception of public transport attributes to neighbourhood satisfaction, especially in low density areas. Along with safety, the availability of education is an important condition for neighbourhood satisfaction for single-parent women (Cook, 1988). Other studies found that access to services, work and amenities only play a minor role in feelings of satisfaction (Herting and Guest, 1985).

Parkes et al. (2002) argue that the importance of access to facilities and amenities to satisfaction plays indirectly, through opportunities for social interaction.

3.4 Comparing neighbourhoods

To gauge the effect of neighbourhood regeneration on neighbourhood satisfaction, a relatively new method of analysis was chosen. This method is used to compare case studies of post-war housing estates. These case studies come from the RESTATE (2005) project, which focused on the situation in 29 large-scale post-war housing estates, and on actions to counteract negative trends and problems in these housing estates. These estates were subjected to neighbourhood regeneration efforts at the time of research.

To be clear, the aim of the analysis is to distil several key or decisive causal factors across the estates. The strategy and method irrevocably mean that much of the complexity, specificity and richness of the original case studies will be lost in favour of generalisation across Europe. The models should be seen as abstract-simple, allowing us to think about and reflect on regeneration.

While the selection of cases was quite diverse, there are some similarities. Most of the estates were built on the urban fringe with a similar lay-out: large multiple storey multi-family dwellings with large green public spaces. The dwellings are usually relatively spacious and bright. Common negative points include (Musterd and Van Kempen, 2005):

- Physical decay of dwellings
- Lack of access to essential services
- Architecture and urban design support anonymity
- High unemployment rates
- Separation of functions leads to multiple problematic effects, such as unsafe spots, conflicts over maintenance of public spaces and little employment opportunities.
- Traffic and parking problems
- Safety problems, vacancies, drug use, youngsters, and anti-social behaviour
- Stigmatisation

As noted above, these characteristics are not all true for all estates, especially for those in Central and Eastern Europe. However, it is clear that the large-scale post-war estates belong to a specific 'population' of European neighbourhoods.

This analysis incorporates qualitative data on neighbourhood regeneration in order to examine its direct effect on residents' perception of the neighbourhood. Neighbourhood regeneration efforts can either directly influence the opinion of residents or indirectly. Residents may not always be fully aware of the regeneration efforts, but their perception of the neighbourhood can still be influenced positively or negatively by the regeneration's effects. For instance, not all residents may be aware of youth programmes that aim to reduce anti-social behaviour, but a subsequent decrease in anti-social behaviour may positively influence the perception of the neighbourhood.

The decision to introduce qualitative data means that neighbourhood satisfaction levels are aggregated to the neighbourhood level as well. This is slightly problematic since this means that some of the richness of the individual data is lost. Furthermore, the composition of population in terms of demography and socio-occupational status is not equally distributed per case. However, I believe that the benefit of incorporating qualitative data outweighs the loss of information in aggregated data. Furthermore, to control for some compositional differences, the economic situation of the estate has been included in the analysis. As noted above, residents' perceptions depend on the overall socio-economic status of a neighbourhood (Pan Ké Shon, 2007). As for age, there are

differences between the age groups of the respondents per estate. However, primary analyses found no statistical or logical relationship between satisfaction and age category on an aggregate level.

3.4.1 Qualitative Comparative Analysis: explanation

This chapter employs the fuzzy-set qualitative comparative analysis (fs-QCA) method, developed by Charles Ragin (1987, 2000). Fs-QCA has three major advantages. First, it is very suitable to handle small-N research designs (5-50 cases) and thus it allows to compare the 29 estates. Second, the method is equipped to handle both quantitative and qualitative data. Third, it allows us to discern multiple causal combinations to reflect the diversity of the estates.

Unfortunately, the space available does not permit a full explanation of the method (see Ragin, 2003, Rihoux and Ragin, 2004, Shalev, 2006, Skaaning, 2005), but it is based on logic. Essential is that there are two types of causality in logic; necessary causality and sufficient causality.

Necessary causality can be explained by the following example: the ability to breathe is necessary for a human to survive. There can be no outcome without the cause, that is, there are no living humans that do not have the ability to breathe. In more technical terms: the necessity for breathing for surviving is colloquially equivalent to ‘whenever breathing occurs or is true, so is surviving’. However, to survive humans may need other things as well.

Sufficient causality can be explained as follows: a knock-out punch in a boxing match will automatically mean a win for the last man standing, regardless of any points scored in preceding rounds. So a knock-out is sufficient for a win, but a boxing match can also be won by points. The cause will always produce the outcome, but the outcome may be produced by other causes as well. So all knock-outs are wins but not all wins are knockouts.

To establish full causation, the requirements for both types have to be met. Only then can we assert that the outcome is true or present *if and only if* the causal conditions are true or present. The fs-QCA is a method for making inferences about both the necessary and sufficient conditions for a particular outcome to happen or a phenomenon to be present (Ragin, 2000). To give an example, to open a door, it is necessary that it is unlocked, because, obviously, a locked door cannot be opened. However, unlocking alone is not sufficient to open it. It will either have to be opened manually or, in other cases, mechanically. These statements would lead to a necessary and sufficient model for opening a door with two causal combinations, or scenarios:

- 1) Unlock *and* Manual
- 2) Unlock *and* Mechanical

The analytical strategy of the method requires two steps to be taken; first, the analysis of *necessity* and second, the analysis of *sufficiency*. To determine necessity of a single condition means establishing whether all instances of the outcome share an antecedent condition (e.g. doors were unlocked). Instances of the relevant outcome without the suspected cause undermine necessity (e.g. any instances of locked doors that were opened). The second step is establishing the *sufficiency* of the cause. The question here is: Is the suspected cause by *itself* capable of producing the outcome? The cause should always produce the outcome in question. Evidence of instances, where the cause is present but not followed by the outcome, undermines sufficiency (e.g. instances where a door was unlocked and it was operated either manually or mechanically, but did not open).

The result of these two steps is a model with one or more combinations of causal variables which predict the outcome (neighbourhood satisfaction). For the reader's convenience these causal combinations are termed scenarios below.

3.4.2 Data and variables

The two steps above are carried out by simple arithmetic operations on a dataset. However, the fs-QCA method acknowledges the ambiguities and diversity of social reality and hence the two tests to establish causality are probabilistic. The use of probabilistic criteria such as significance, allows the tests to be more flexible in case of small abnormalities in the data that are the result of inherent messiness of social processes. To further allow for this messiness, fuzzy-set logic is used instead of Boolean logic which handles concepts as either true or false, 1 or 0. Fuzzy-set logic allows for a degree of truth through membership scores between 0 and 1, and subsequent method to perform the two tests. To be clear, fuzzy-set logic is not any less precise than any other form of logic: it is an organized and mathematical method of handling *inherently* imprecise concepts, such as social cohesion and environmental quality.

Thus, the dataset features membership scores for all variables. Membership scores express the presence or absence of a variable. Different degrees of property are expressed in scores between 0 and 1, whereby the maximum membership score of 1 implies that a case is 'fully in' a category, while 0 means 'fully out'. The score 0.5 indicates a qualitative breakpoint and means 'neither in nor out'. The membership scores can be based on either qualitative or quantitative data.

The qualitative data consists of the assessments of the RESTATE researchers made in a series of standardised research reports written by researchers. These reports were mainly used to compose the membership scores for the 'appropriate neighbourhood regeneration' variable.⁹ The scores for this variable were assigned based on assessments made by the RESTATE researchers on physical restructuring and various socio-economic interventions. However, because restructuring is often more costly, the physical dimension has been weighed equally to the combined socio-economic interventions.

The quantitative data comes from a survey, which was conducted in all the estates in the first half of 2004. The questionnaire focused on aspects of liveability, which resulted in questions on various forms of satisfaction, social contacts, attachment, reputation and participation. Questions were also asked about the development and policies in the estate. The membership scores for the remaining variables are based on this survey, including neighbourhood satisfaction.

In most cases the variables are composed of multiple survey questions and/or qualitative data from the research reports. Thirty-eight arithmetic and logical operations were done to construct a dataset with membership scores between 0 and 1 per variable for each estate (dataset not shown). For instance, the outcome variable, neighbourhood satisfaction, is composed by using 2 survey questions. The first asked for a more general feeling of neighbourhood satisfaction, while the second question inquired whether the respondent felt positive or negative about the future of the neighbourhood. Data from these two questions were converted to membership scores between 0 and 1 and subsequently averaged to create one variable where full membership would mean completely satisfied with the neighbourhood and optimistic about future developments. Low membership, on the other hand, means completely dissatisfied and pessimistic.

⁹ The term 'appropriate' is used here instead of 'successful' because the RESTATE project was not set up to perform strict *ex post* evaluations. However, its setup did examine developments and problems in the estates and the way policies and practices connected with them. Thus, the term 'appropriate' is in this case more suitable.

The combination of these two questions means that the meaning of neighbourhood satisfaction relates to the perception of the neighbourhood and its direction.

Table 1 lists all the variables used and their empirical source. The causal variables used in the analyses are 'appropriate neighbourhood regeneration', which is based on the research reports, and seven other causal variables based on the literature above. The physical mechanism includes dwelling satisfaction and a variable which expresses environmental quality. The social mechanism includes one social cohesion variable and two variables on social mix. The institutional dimension is operationalised as access to services and public transport. Finally, the dataset includes a 'prosperity' variable to compensate for any differences in overall socio-economic status of the estates.

Table 1. Variables used

Causal Category	Fs-QCA Variable	Empirical Data
<i>Physical</i>	dwelling satisfaction	Survey question
	environmental quality	Written assessments by researchers on dilapidation, pollution or traffic problems and two survey questions on reasons to move and how future could look brighter
<i>Social</i>	social cohesion	4 survey questions: attachment to the neighbourhood, amount of social contacts within neighbourhood, quality of social contacts, participation in associations to improve neighbourhood
	perceived social mix	Survey question: degree of social mix in neighbourhood
	ethnic mix	Census data on demographic composition
<i>Institutional</i>	access	9 survey questions on access to health care, public, schools, employment, parks, transport and shops
<i>Other</i>	neighbourhood prosperity	Survey data on employment and income
	'appropriate' neighbourhood regeneration	The assessments in reports on 'appropriateness' of physical (housing, public space and infrastructure) and social economic regeneration (economic development, health, safety, education, social initiatives)
<i>Outcome</i>	neighbourhood satisfaction	2 survey questions: rating of neighbourhood satisfaction and feelings on future development

3.5 Results

Below are presented the two best models to explain neighbourhood satisfaction and dissatisfaction. The models have been calculated with the fs/ QCA 1.1 software (Ragin et al., 2003). The models are the result of the tests of necessity and sufficiency and consist of multiple scenarios that explain neighbourhood satisfaction.

3.5.1 Causes for neighbourhood satisfaction

The best model to explain neighbourhood satisfaction tested six conditions: perceived social mix, environmental quality, social cohesion, appropriate neighbourhood regeneration, dwelling satisfaction, and neighbourhood prosperity. The two probabilistic tests of necessity and sufficiency¹⁰ resulted in three possible 'scenarios' of neighbourhood satisfaction:¹¹

- 1) dwelling satisfaction *and* social cohesion
- 2) dwelling satisfaction *and* environmental quality
- 3) dwelling satisfaction *and* appropriate neighbourhood regeneration¹²

Dwelling satisfaction is mentioned in all three scenarios because it is the only variable that was found to be 'almost always' necessary for neighbourhood satisfaction¹³. In other words, without a degree of dwelling satisfaction there can be no neighbourhood satisfaction. However, to achieve neighbourhood satisfaction other variables come into play. It was found that three other factors together with dwelling satisfaction explain the degree of satisfaction: neighbourhood regeneration, environmental quality, and social cohesion. In some estates, the combination of social cohesion and dwelling satisfaction explains and causes neighbourhood satisfaction, while in other estates it is appropriate neighbourhood regeneration or environmental quality combined with dwelling satisfaction.

Table 2 displays the results of the fs-CQA for each estate as membership scores for the three scenarios. The most relevant scenario for each estate is determined by the highest membership scores (bold in the table). However, when the difference between the highest scenario score and satisfaction is too high, the model is not able to explain the degree of satisfaction in that estate. Thus, neighbourhood satisfaction in four estates remains unexplained.

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- 10 Benchmark proportion is 'almost always' (minimum 75% of cases display causal relation) and .05 significance level for all tests.
 - 11 Containment rules, or minimization, allow the elimination of expressions which are logically redundant. Because I strive for a degree of generalisation, containment was done by means of a Quine- McCluskey algorithm.
 - 12 The coverage, i.e., the percentage of the outcome explained by the causal condition (Ragin, 2003), of this model is .73. The coverage measure is comparable to the level of explained variances, such as R2 in statistics (Skaaning, 2005).
 - 13 Observed proportion of cases where cause \geq outcome is 0.9. Significance is .046

Table 2. Membership scores per scenario and neighbourhood satisfaction

Estate	Scenario 1	Scenario 2	Scenario 3	Satisfaction	Difference
The Bijlmermeer	0,21	0,43	0,69	0,80	0,11
West Garden Cities	0,17	0,12	0,58	0,61	0,04
Sant Roc	(0,81)	0,22	0,26	0,34	-0,47*
Trinitat Nova	0,73	0,37	0,42	0,87	0,14
Maerkische Viertel	0,04	0,49	0,50	0,41	-0,09
Marzahn/Hellersdorf	0,16	0,47	0,50	0,44	-0,06
The central estates	0,07	0,12	0,47	0,59	0,12
Hodge Hill	0,12	0,21	0,09	0,13	-0,08
Havanna	0,13	0,09	0,38	0,51	0,13
Oxnahaga	0,37	0,48	0,72	0,58	-0,14
Raslatt	0,21	0,36	0,72	0,76	0,04
Zusterna	0,17	(0,29)	0,19	0,50	0,21*
Nove Fuzine	0,20	0,63	0,19	0,63	0,00
Poplar HARCA	0,16	0,40	(0,63)	0,34	-0,29*
Tower Hamlets HAT	0,24	0,47	0,60	0,53	-0,07
Les Minguettes	0,27	0,13	0,35	0,40	0,06
Rillieux-la-Pape	0,46	0,40	0,35	0,46	0,00
Orcasitas in Usera	0,91	0,74	0,37	0,78	-0,13
San Blas	0,37	0,47	0,34	0,65	0,18
Comasina	0,13	0,87	0,38	0,67	-0,20
San Siro	0,30	0,28	0,44	0,54	0,11
Sant'Ambrogio	0,19	0,57	0,42	0,51	-0,06
Josavaros	0,00	(0,30)	0,16	0,60	0,29*
Kista	0,23	0,53	0,47	0,33	-0,20
Tensta	0,35	0,32	0,51	0,36	-0,14
Kanaleneiland	0,13	0,02	0,35	0,44	0,09
Nieuw-Hoograven	0,15	0,16	0,66	0,56	-0,10
Wrzeciono	0,28	0,26	0,36	0,52	0,17
Ursynow	0,29	0,74	0,50	0,71	-0,03

* Difference too great for model to explain the outcome

It is interesting to see that neighbourhood regeneration, in combination with dwelling satisfaction, explains the degree of satisfaction in about half of the estates and causes high neighbourhood satisfaction in six cases. It may very well be that in the third scenario estates where satisfaction is low, more or better-targeted investments will increase satisfaction and liveability. Of course, these investments would eventually also lead to better environmental quality and better housing. However, considering that regeneration was attempted in all cases, it should not be forgotten that in other estates good environmental quality or social cohesion proved to be more decisive. Furthermore, the table shows that some cases also have high membership scores for other scenarios. Maerkische Viertel in Berlin, for instance, belongs to scenario 3 but its membership

score for scenario 2 is almost as high. This means that environmental quality along with dwelling satisfaction and the effectiveness of regeneration seems to play a role in that estate.

Satisfaction with dwelling has already been identified in previous studies as important indicator or predictor for neighbourhood satisfaction. However, the fuzzy-set analysis of necessity indicates that satisfaction with dwelling is not a mere indicator but a necessary condition for satisfaction in the housing estates. This finding underlines that importance for individuals of private living space over neighbourhood characteristics. In other words, good housing seems to be a *sine qua non* for neighbourhood satisfaction. Efforts to increase liveability in a neighbourhood should pay attention to this.

The effect of social cohesion on satisfaction in a neighbourhood has been theorised and assumed before (Sirgy and Cornwell, 2002). However, social cohesion (in combination with dwelling satisfaction) is not the sole determinant of satisfaction. The scenario mainly explains neighbourhood satisfaction in estates in Southern Europe, where it seems the neighbours appreciate the social environment even when environmental quality is low and neighbourhood regeneration insufficient. Especially the Spanish estates stand out. This may be explained by the prevalent social ownership tenure structure. Because assets in social ownership housing are not released until after a certain period, families have been bound to the estates for longer periods and have had more opportunities for social contacts and more stakes in collective civic action (see Pareja Eastaway et al., 2004).

The second scenario indicates the importance of the physical environment in combination with dwelling satisfaction. These findings also correspond with previous findings, which point to the quality of the physical environment as a condition for satisfaction. This scenario includes cases that have not (yet) experienced the 'appropriate' regeneration, but still have a good environmental quality, keeping residents satisfied about their estate. It is noteworthy that the 'satisfied' estates are all in Southern and Eastern Europe.

The third scenario may include cases that also experience a high degree of social cohesion and environmental quality (see table 2). However, appropriate neighbourhood regeneration, in combination with dwelling satisfaction, was found to be the common denominator. The 'satisfied' estates are Swedish, British and Dutch. As mentioned above, this scenario explains satisfaction in half of the cases, which means appropriate neighbourhood regeneration together with dwelling satisfaction, is a convincing cause for neighbourhood satisfaction. In other words, success in addressing the issues at hand and making sure that individual housing is in good quality seem to go a long way in making people overall satisfied about their neighbourhood and its liveability.

In sum, we have seen that dwelling satisfaction is relevant in all cases and other variables in some situations. The different scenarios reflect the diversity of estates from different parts of Europe. However, the differences are also visible between estates within the same national or metropolitan context. The English estates are a clear example of this. Furthermore, it is striking that social mix and neighbourhood prosperity are not conditions for neighbourhood satisfaction. Social mix, in particular, is a policy and development strategy which is being pursued to increase the liveability and social economic conditions in several estates. However, the perceived social mix does not seem to affect neighbourhood satisfaction. Social mix will be discussed further below. Finally, the importance of dwelling satisfaction and neighbourhood regeneration suggests that satisfaction about the neighbourhood can be achieved with the 'appropriate' interventions. This implies that policy makers, who are successful in addressing the relevant issues and problems, will be successful in creating liveable neighbourhoods.

3.5.2 Causes for neighbourhood dissatisfaction

Despite being related, 'neighbourhood dissatisfaction' is considered a different phenomenon than 'neighbourhood satisfaction'. Hence, it was found that the best model for dissatisfaction has a different set of variables: social cohesion, access, environmental quality, dwelling satisfaction, neighbourhood prosperity, appropriate neighbourhood regeneration and ethnic mix. Ethnic mix was included to substitute perceived social mix, because it improved the model's coverage.

It is already noteworthy that 'appropriate neighbourhood regeneration' variable is absent in the found dissatisfaction model. So, while regeneration plays an important role in neighbourhood satisfaction, it does not do so for dissatisfaction. Nevertheless, the results below do have consequences for it. Besides the regeneration variables, the environmental quality variable is missing as well.

The two probabilistic tests of necessity and sufficiency¹⁴ resulted in three possible 'scenarios' of neighbourhood dissatisfaction:

- 1) *no* social cohesion *and* *no* dwelling satisfaction
- 2) *no* social cohesion *and* ethnic mix
- 3) *no* social cohesion *and* *no* access *and* neighbourhood prosperity¹⁵

All three scenarios share a necessary cause. The absence of social cohesion seems to 'almost always' be necessary for neighbourhood dissatisfaction¹⁶. In other words, a high degree of social cohesion will 'almost never' be found in 'unsatisfied neighbourhoods'. From the literature, this result seems logical, although we should be cautious since the fuzzy-set featured only a few estates with high social cohesion membership scores.

In addition to an absence of social cohesion, neighbourhood dissatisfaction is caused by a lack of dwelling satisfaction, or an ethnically mixed population, or prosperity in combination with a lack of access to services and amenities. Table 3 displays the results of the fs-CQA for each estate as membership scores for the three scenarios. Again, the most relevant scenario for each estate is determined by the highest membership scores (highlighted in the table). The difference between the highest scenario score and dissatisfaction was found too high for nine estates, which means that dissatisfaction in these estates remains unexplained.

14 Benchmark proportion is 'almost always' (minimum 75% of cases display causal relation) and .05 significance level for all tests.

15 The model's coverage measure is .69

16 Observed proportion of cases where cause \geq outcome is 0.93. Significance is .013

Table 3. Membership scores per scenario and neighbourhood dissatisfaction

<i>Estate</i>	<i>Scenario 1</i>	<i>Scenario 2</i>	<i>Scenario 3</i>	<i>Dissatisfaction</i>	<i>Difference</i>
The Bijlmermeer	0,12	(0,79)	0,45	0,20	-0,60 *
West Garden Cities	0,43	(0,64)	0,41	0,39	-0,25 *
Sant Roc	(0,18)	0,06	(0,18)	0,66	0,48 *
Trinitat Nova	0,15	0,07	0,27	0,13	-0,14
Maerkische Viertel	0,20	0,08	(0,24)	0,59	0,35 *
Marzahn/Hellersdorf	0,31	0,04	0,73	0,56	-0,17
The central estates	0,32	0,39	0,43	0,41	-0,03
Hodge Hill	0,73	0,13	0,00	0,87	0,14
Havana	0,37	0,01	0,48	0,49	0,01
Oxnahaga	0,00	0,27	0,30	0,42	0,12
Raslatt	0,12	(0,46)	0,10	0,24	-0,22 *
Zusterna	0,17	0,18	0,40	0,50	0,10
Nove Fuzine	0,01	0,24	0,26	0,37	0,11
Poplar HARCA	0,37	0,59	0,40	0,66	0,07
Tower Hamlets HAT	0,20	0,32	0,46	0,47	0,01
Les Minguettes	0,48	0,63	0,34	0,60	-0,03
Rillieux-la-Pape	0,16	(0,32)	0,25	0,54	0,22 *
Orcasitas in Usera	0,00	0,04	0,09	0,22	0,13
San Blas	0,26	0,14	0,00	0,35	0,09
Comasina	0,07	(0,10)	0,08	0,33	0,23 *
San Siro	0,17	0,09	(0,24)	0,46	0,22 *
Sant' Ambrogio	0,13	0,13	0,43	0,49	0,06
Josavaros	0,22	0,00	0,22	0,40	0,18
Kista	0,47	0,77	0,01	0,67	-0,10
Tensta	0,36	0,65	0,16	0,64	-0,02
Kanaleneiland	0,35	0,53	0,51	0,56	0,03
Nieuw-Hoograven	0,25	0,25	0,41	0,44	0,03
Wrzeciono	0,64	0,01	0,42	0,48	-0,17
Ursynow	0,24	0,01	0,23	0,29	0,05

* Difference too great for model to explain the outcome

It appears that most of the 'dissatisfied estates' belong to the second scenario. Most of the cases with low dissatisfaction, i.e. cases with relatively high satisfaction, belong to the third scenario. The model seems to have been successful in covering most of the high dissatisfaction estates, which are all located in Western European countries. In our dataset, dissatisfaction in Eastern European estates is low to moderate.

Thus, the analysis indicates three different scenarios where, in combination with lack of social cohesion, variables create dissatisfaction. The first is a low degree of satisfaction with the dwelling, which is in line with the satisfaction analysis and findings in other studies. Only one 'dissatisfied' estate fits this scenario. Apparently, the residents regard

the quality of housing in the other 'dissatisfied' Western European estates as acceptable, or other issues take precedence.

The second scenario includes the presence of non-native residents (non-native to the host country). This result is very interesting, but we should be careful in asserting that the behaviour of ethnic groups in those estates is the source of dissatisfaction. This explanation would be too narrow and negligent of wider social processes. It is important to remember that the absence of social cohesion is the co-determinant in this scenario. Low social cohesion implies a lack of social contact which can make a common understanding between groups difficult and may result in distrust. In addition to distrust between residents, there may be a second explanation for this model. The large-scale presence of non-native residents may translate into a negative neighbourhood reputation among outsiders, which in turn may breed dissatisfaction about the neighbourhood among residents who feel isolated, excluded or stigmatised. Unfortunately, it is beyond the scope of this analysis to test whether this is the case. However, the Bijlmermeer in Amsterdam has a large ethnic mix and low social cohesion, yet still has a high level of neighbourhood satisfaction (see table 4). This may be because the (long-term) dominance of ethnic groups and low amount of native residents result in less misunderstanding within the area between native and non-native residents, between newcomers and long-term residents. In other words, there are no conflicts about who 'belongs' in the neighbourhood. In addition, the neighbourhood regeneration efforts may have improved the neighbourhood's reputation (see Aalbers et al., 2004). Nevertheless, the result highlights the importance of social and ethnic mix in Western European housing estates.

As mentioned, the third scenario, which emphasizes the lack of access in combination with prosperity, mostly accounts for 'satisfied' estates (see table 3). However, one 'dissatisfied' estate, Marzahn/Hellersdorf in East Berlin, fits the expression. The high dissatisfaction score of this estate is mostly determined by a pessimistic view of the future. The important issues are lack of environmental quality, regional unemployment and the vastness of the urban design which impedes quick access to facilities and amenities (Knorr-Siedow and Droste, 2005). This last point is arguably the most relevant determinant for the Marzahn/ Hellersdorf case. As previous studies have shown, lack of access to amenities, transport and services is in some cases a determinant of dissatisfaction. A low degree of access to services and public transport may deprive the neighbourhood of vital and necessary amenities and may induce feelings of isolation and exclusion in the area. As the lack of access in Marzahn/ Hellersdorf is linked to the urban design, it is no surprise that residents link the lack of access to their perception of the neighbourhood.

In sum, while the dissatisfaction model was less powerful than the satisfaction model in terms of coverage, there are some very interesting findings. The necessity of low social cohesion for dissatisfaction underlines the importance of a degree of local social interaction, participation and attachment. In most cases, a high degree of social cohesion prevents neighbourhood dissatisfaction, unless there are problems with the housing units, a degree of ethnic mix, or a lack of access. Although neighbourhood regeneration is absent in the model, the results show that neighbourhood regeneration may be relevant as the answer to some of the causes of dissatisfaction. While social cohesion may be hard to stimulate and foster top-down, quality of housing and problems with access can be improved with regeneration interventions. When the causal relation between the presence of ethnic groups and dissatisfaction, points to problems with cultural integration and distrust between immigrants and natives, neighbourhood regeneration may be able to contribute to the solution. However, an area-based focus will ultimately fall short when the issues are societal. When the negative reputation is the issue, neighbourhood regeneration can help to improve the face and image of the neighbourhood.

3.6 Conclusion

This chapter focused on the causation of neighbourhood satisfaction in general; and in the role of neighbourhood regeneration in particular. It appears that social, institutional and physical mechanisms all appear to matter in various combinations. More importantly, it was found that the degree of neighbourhood regeneration positively affects the overall perceptions about the quality and direction of the neighbourhood in half of the cases. In the other half, in the absence of regeneration other factors such as social cohesion proved to be decisive. Nevertheless, the analyses underline the importance of the right neighbourhood regeneration in improving the residents' estimation of the liveability of their neighbourhood. In addition, we have seen that neighbourhood regeneration can play an important part in relation to some of the causes of neighbourhood dissatisfaction. Social economic and physical regeneration interventions can address place-based issues such as lack of access to amenities, housing quality and, to some degree, a lack of social cohesion. Some causes, however, seem to be connected to wider social processes such as cultural integration, stigmatisation, and perhaps social economic deprivation, which would be harder to tackle with neighbourhood regeneration interventions alone as their territorial focus tends to be limited.

Another important finding is the great amount of diversity among our 'population' of estates. Even though this chapter strived for generalisation, the diversity between the estates becomes immediately apparent in the different constellations of membership scores for each scenario (see tables 2 and 3 above). While some estates have high membership scores for only one scenario, others display high scores for other scenarios as well, indicating the presence of other social processes. Consequently, this means that any neighbourhood regeneration effort would have to pay attention to this diversity and adapt accordingly. In other words, a feeling for the diversity of estates, irrespective of whether this is in an international, national, or regional context, will help to make neighbourhood regeneration interventions more 'appropriate' and will ultimately yield better results in creating a liveable environments.

The right neighbourhood regeneration policies, however, will only positively influence neighbourhood satisfaction when residents are also satisfied with their dwellings. The analyses showed that to achieve neighbourhood satisfaction, dwelling satisfaction is 'almost always' necessary. Furthermore, we already know that households tend to prioritise internal conditions (homes) to external conditions (those in the neighbourhood) for improvement regardless of satisfaction rates with these features (Galster, 1985). This should be taken into account when using dissatisfaction as an indicator for policy. The quality of individual housing units is crucial for any regeneration to have a positive effect on the perceptions of the residents.

In relation to neighbourhood regeneration, the analyses reveal some interesting points that are relevant to the debate about social mixing. It appears that the perceived social mix is irrelevant for the causality of satisfaction. However, ethnic presence, a social mix indicator, in combination with a low degree of social cohesion seems to be a condition for dissatisfaction in some Western European estates. In these estates the presence of ethnic groups seems to have a negative influence on the residents' perceptions rather than a positive. However, the Bijlmermeer case shows that it is unclear where the balance lies and whether there is perhaps some sort of tipping point when an ethnic presence is of no consequence to satisfaction. The findings are interesting since social mixing policies which strive for, among other things, liveability, are often a part of the regeneration interventions, at least in Western Europe. The negative relation between social mixing and satisfaction helps to nuance the arguments surrounding the assumed positive effect of living in socially and ethnically diverse areas on people. However, it is clear that the effect of social mixing on neighbourhood satisfaction deserves more attention.

Acknowledgements

Thanks are due to Wim Ostendorf, Sako Musterd, Rob Rowlands, Ronald van Kempen, and to all who commented on earlier drafts of this chapter. This research was carried out within the framework of the Corpovenista/ Habiforum Research Programme.

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