The Development of a Comprehensive Social Cohesion Indicator for Belgian Communities. Data Reduction Techniques for Community Level Data

Marc Hooghe

University of Leuven, Belgium, e-mail: Marc.Hooghe@soc.kuleuven.be

Abstract

Recently, various attempts have been undertaken to develop a comprehensive social cohesion index to monitor the social progress of society. However, classical sociological theories predict that contemporary modern communities function according to a different type of social cohesion than traditional communities. From both a theoretical and a methodological perspective, it can be questioned whether social cohesion can be summarized in one single index. In this article, we analyze an extensive data set of social cohesion indicators, including indicators of religious involvement, social exclusion, crime and voter turnout, for 308 local communities in the Flemish region of Belgium. Based on first and second order factor analyses, we arrive at the conclusion that it is impossible to construct one single indicator for social cohesion when taking the multidimensionality of the concept into account. While the traditional form prevails in rural areas, it does not coincide with a distinct modern form that prevails in the urban areas of the region.

Keywords: social cohesion indicators, Belgium, data reduction

1. Introduction

In recent years, various authors and international organizations have tried to develop comprehensive social cohesion indicators, in order to be able to monitor the effects of policy efforts on social cohesion and to monitor the outcomes of cohesive communities (see e.g. Putnam, 2000; Chan et al., 2006; OECD, 2009). From a theoretical perspective, however, social cohesion should be seen as a multidimensional concept (Jenson, 1998; Berger-Schmitt, 2002; Stanley, 2003; Harell and Stolle, 2010). Indeed, social exclusion (Easterly et al., 2006), social order and safety (Sampson et al., 1997), upholding a common identity and a sense of belonging (Reitz and Banerjee, 2007) have all been listed as essential dimensions of social cohesion in contemporary neighbourhoods, communities and societies.

The basic question for this study is to determine whether these various theoretical dimensions of social cohesion can empirically be summarized into one comprehensive policy index. In this article, we approach this question both from a theoretical as from a methodological perspective. From a theoretical perspective, a traditional assumption within sociology is that modern communities will develop another interpretation of social cohesion than more traditional communities and therefore social cohesion in modern communities will be conceptualized differently compared to social cohesion in traditional communities (Durkheim, 1893; Tönnies, 1887). From a methodological perspective the
basic rule is that various indicators that have been put forward as elements of social cohesion can only be summarized if they empirically refer to one underlying latent dimension (MacRae, 1985). Bringing together both perspectives, the main question underlying this article, therefore, is whether the various elements of social cohesion can be reduced to a single social cohesion index that is applicable to all types of communities, or whether multiple indices need to be composed that represent different types of social cohesion.

In this article, we first review the current literature on the multidimensional interpretation of social cohesion. Subsequently, we operationalise these various dimensions, looking at a case study of 308 local communities in Belgium, introducing an extensive dataset covering indicators on, e.g., religious involvement, criminality and socioeconomic development. We will further discuss the methodology to analyze the dimensional structure of social cohesion and present the results. We conclude with some observations on the social cohesion scores of Belgian communities and we discuss how these results might be used in both the scientific as public policy field.

2. Social Cohesion as a Multidimensional Concept

Social cohesion basically refers to the presence of structural and attitudinal mechanisms of solidarity, cooperation and exchange between citizens in a society. These constituting networks can be either material or structural (e.g. exchange of goods, economic interactions) or immaterial (e.g. informal relations, shared identities). While social cohesion is usually considered as a positive community characteristic, it has to be noted that the existence of these mechanisms and networks by itself does not imply any normative claim, as it is possible that closely knit and highly cohesive societies are based on forms of inequality that are not compatible with contemporary conceptions of human rights regimes.

With regard to the structural networks and exchange mechanisms, reference is made to the distribution of material goods between individuals with regard to work, education, economic interaction and the like. Typically, the expectation is that distribution extends toward all members of a community, thus avoiding structural holes within society (Burt, 1982). From a policy perspective, these structural holes can be equated with social exclusion mechanisms as these would imply that some individuals or groups of individuals will be excluded from participating in these exchange networks (Atkinson et al., 2002).

Concerning the attitudinal component of social cohesion, especially the research tradition on social capital (Putnam, 1993, 2000) has provided insights into the importance of formal and informal networks and the accompanying attitudes among citizens. While some scholars focus on the benefits social capital entails for the actor itself (Lin, 2002; Granovetter, 1973), Putnam (2007, 138) has focused quite strongly on the positive externalities of social capital for society as a whole. It is assumed that communities where social capital is abundantly present will thrive more strongly than communities without these resources. Social order in this regard might be considered as an example of a pure public good: if I have neighbours that keep an eye on what goes wrong in the neighbourhood, I profit from their networks, even if I do not contribute myself to their social vigilance (Sampson et al., 1997).
As was already noted, this form of social cohesion is not necessarily associated with a specific moral order. Indeed, the amoral familism described by Banfield (1958) might be considered as a form of an extremely cohesive family community. Authoritarian regimes too can be characterized by a high degree of internal social cohesion (Murphy, 1957). Indeed, coercion can serve as a powerful instrument to establish social cohesion. In contemporary democracies, however, the normative dimension is repeatedly stressed in definitions of social cohesion. It is assumed that social order and social cohesion will only be stable if they rely on a normative consensus among the population. In the current literature, social cohesion does not just refer to the ability of members of a community to co-operate in order to reach collective goals, but also to their ability to do so in a voluntary manner (Janowitz, 1975). Coerced co-operation is no longer considered as an indicator for social cohesion. The density of interactions between members of a community should therefore be based on a set of values and norms that are conducive to interaction and co-operation, including attitudes such as generalized trust and a sense of common belonging (Chan and Chan, 2006).

Going beyond the structural-cultural nexus and the ambiguity of the normative interpretation of social cohesion, a number of authors have tried to introduce a number of more tangible empirical distinctions within the social cohesion concept. Berger-Schmitt (2002), e.g., introduces a distinction between the dimension of equality and inclusion, on the one hand, and various elements of social capital on the other hand. Furthermore, various empirical studies (Pichler and Wallace, 2007; Bekkers and Veldhuizen, 2008) have shown different dimensions and forms of social cohesion that are not necessarily present within the same communities. Arguably, the most elaborate and tangible multidimensional conceptualization of social cohesion has been provided by Kearns and Forrest (2000). Taking different spatial scales (the national, city-region and neighbourhood scale) into account, they have introduced five distinct dimensions, which will be reviewed briefly.

The first dimension involves a civic culture with a common set of shared values and norms. There is a considerable interest from policy actors in this dimension of social cohesion since the trend towards individualisation is often perceived as a threat for a shared set of values (Inglehart, 1997). Communautarian authors and policy makers are inclined to perceive this rise of individualism as a possible threat for social cohesion, and therefore also for the functioning of society as a whole (Bellah et al., 1985; Etzioni, 1984). The current scholarly interest lies mainly in the question whether the alleged fragmentation of these common values inhibits social life and the establishment of connectedness between citizens (Cantle, 2005).

The second dimension refers to social order and social control. Cohesive communities will be characterised by a willingness to uphold norms and to apply sanctions if these norms are violated (Janowitz, 1975). In this view, social order is not the result of external policing, but is enhanced by social mechanisms that effectively sanction deviant behavior, leading to a safer environment for all members of a community (Sampson, 1986; Sampson et al., 1997, 2002; Bursik and Grasmick, 1993). Theoretically, it is also possible that this form of cohesion is based on deviant or even criminal norms, as is for
instance exemplified by Banfield’s (1958) classical study on amoral familism in Montegrano, or more recently in studies of the Chicago underground economy (Venkatesh, 2006). For the current study, that is based on contemporary Western European societies, however, this kind of criminal or deviant communities simply do not exist on a large geographical scale, so we can assume that this form of ‘negative social cohesion’ will not play a major role in the current study.

Third, Kearns and Forrest (2000) include the absence of social exclusion and structural inequalities as a dimension of social cohesion. It is argued that strong and persistent inequalities will augment social tensions between citizens (Wilkinson, 1996; Uslaner, 2002). Poor and excluded groups have no incentive to believe in the fairness of the system while on the other hand the privileged groups are likely to perceive other members of society as potentially threatening, leading to a low sense of togetherness as well as a lack of optimism (Uslaner and Brown, 2005), which are central elements for the structural and normative elements of social cohesion.

The fourth dimension involves the social capital perspective that is seen as an important resource allowing communities to function (Putnam, 1993; 2000; Berger-Schmitt, 2002). Communities that have dense social networks and a high level of social capital are considered as more cohesive than communities in which these elements are missing. The implied causal mechanism is that social capital allows for the solving of collective action problems, for reducing transaction costs and for facilitating the distribution of information (Putnam, 2000). In the literature, it has been argued that both strong and weak networks can have strong external and internal benefits (Granovetter, 1973).

Finally, Kearns and Forrest identify a common identification with a specific geographical unit as a fifth dimension of social cohesion. Cohesive communities are characterised by a feeling of belonging to a certain locus. Individuals are socialised in these loci, that direct in a certain way their attitudes and behaviours. When members adhere to a strong sense of community, they are expected to develop a sense of solidarity toward their fellow members as well as develop feelings of trust that enables horizontal redistribution between those that are well off and the disadvantaged (Miller, 2000). A strong identification thus causes involvement towards the geographical entity and other positive externalities encompassing all members of the community (Johnston, 1991).

Although Kearns and Forrest described these five dimensions separately, one can notice that the potential connections between the different dimensions are strong. For example, it can be expected that individuals that identify with a community will be socialised into adopting a shared set of basic values of this community. Identification is further seen as a prerequisite for contributing to social control within a community. The five dimensions manifest themselves as Weberian ideal types and one can expect that these five dimensions would be present simultaneously to contribute to one latent social cohesion complex.

It is questionable, however, whether social cohesion can be represented as one single latent concept that covers all these various mechanisms in every single community. Although some studies have tried to develop such an indicator (e.g., Rupasingha et al.,
2006), it is striking to observe that they usually include just a limited number of variables that do not fully represent the theoretical concept of social cohesion. Already in classic 19th century sociological theory, authors argued that different types of communities represent different types of social cohesion (Durkheim, 1893; Tönnies, 1887). Based on Durkheimian terminology, social cohesion in traditional communities was conceived as *mechanical* as it depends on a collective conscience which emphasized the resemblance between citizens (Alpert, 1961 [1938]). Yet, Durkheim argued that modern societies rely on different mechanisms to maintain an *organic* type of social cohesion, which can only be maintained on the basis of “mutual and complementary differences” (Alpert, 1961 [1938], p. 181). Based on insights regarding the division of labour, Durkheim argued that differences between people and the interdependence that are developed as a consequence of the social division of labor are important to maintain cohesion in contemporary complex societies. Tönnies’ terminology (1887) of community (*Gemeinschaft*) and society (*Gesellschaft*) also reflects these distinctions. However, while Durkheim was rather optimistic about social cohesion in modern societies, Tönnies was pessimistic, fearing that in modern *Gemeinschaft*, atomistic individuals would let their self interest prevail above community interests.

Also in contemporary sociological research, this distinction between modern and traditional forms of social cohesion is present. Portes (2000) has argued that traditional social capital ties become increasingly irrelevant as means to achieve successful cooperation, as they are being replaced by economic and material incentives. Pichler and Wallace (2007) argue that traditional forms of informal interaction are being replaced by formal networks that serve as a functional equivalent for these traditional ties. The general assumption therefore seems to be that in contemporary societies other social cohesion mechanisms will be at work than in traditional societies.

### 3. Operationalization of the Dimensions of Social Cohesion

Since the typology developed by Kearns and Forrest (2000; Forrest and Kearns, 2001) offers the most elaborate conceptualization, we will start from their theoretical framework to ascertain how social cohesion dimensions can be operationalized and included in empirical research. It is to be noted however, that they expect different forms of social cohesion to operate on different levels of geographical aggregations, like the nation state, the city or the neighbourhood level (Kearns and Forrest, 2000, p. 1003). E.g., social order and social capital dimensions are less likely to play an important role at the national scale while economic redistribution schemes most likely will not be implemented at the neighborhood level. Nevertheless, Kearns and Forrest (2000) argue that all five dimensions can be addressed at the city or metropolitan area level. Therefore, it is warranted to investigate whether the proposed five social cohesion dimensions can be reduced to one or more underlying latent constructs at the city or community level of aggregation.

Typically social cohesion indicators refer to characteristics of a specific cultural or geographical unit (Diener and Shuh, 1997; Sirgy et al., 2006). These indicators can be collected either directly on the community level, or as an aggregation of measurements collected among inhabitants of a community. In this article, we operationalize the social
cohesion dimensions by using structural statistical data on local communities in Belgium. As we do not have access to data that were collected on the individual level, e.g. by means of a population survey, for all the communities involved, this kind of information cannot be included in our analysis. More specifically, we restrict ourselves to the Flemish autonomous region in the northern part of Belgium that includes about 6,162,000 inhabitants, or 58 per cent of the total Belgian population. The region is composed of 308 local communities, with on average 20,000 inhabitants. These communities serve as the lowest level of political administration, with extensive authorities with regard to housing, urban planning, local police, social affairs and culture. We limit this study to the Flemish region because of the federal structure of the country: most of the authorities that are associated with social cohesion are exercised at the regional level, with as a result that we do not have access to data covering the entire country. Flanders is the region with the most extensive data available on several life domains. Given the goal of constructing comprehensive social cohesion indicators, we limit ourselves to data that are available for all 308 Flemish communities.

The first social cohesion dimension, namely the presence of shared common values, ideally would require a population survey, although here too, researchers would be confronted with the challenge that there is no consensus on what kind of values could or should be shared within a community. In this study, we rely on a behavioural indicator that can be interpreted as a reflection of a certain normative consensus. In traditional sociology, religious practice typically was portrayed as a fundamental element of social cohesion, and it was often described as an important source of “social cement” in a community (Durkheim, 1912; Turner, 1991). Although it can be questioned whether religion still plays this role in contemporary secularized societies, empirical research has shown strong spill-over effects of religious practice (Bekkers and Bowman 2009). Believers who are religiously participating members of their community, also participate more actively in voluntary associations, even including secular ones (Wilson and Janoski, 1995; Bekkers and Veldhuizen, 2008). Despite the process of secularization, the Catholic Church in Belgium still can be considered as the dominant religious institution, and the presence of Jewish, Protestant and Islamic communities in Belgium is very limited (Dobbeelaere, 2003). Although weekly practice rates have eroded substantially during recent decades, a majority of the Flemish population still relies on Catholic rituals such as the rites of passage. In 2007, for instance, 68 per cent of all deceased in Flanders received a Catholic funeral. For all the main rituals in life, the Roman Catholic Church of Belgium has collected extensive statistics at the community level and compared to population figures, population rates have been calculated. More specifically, for every community in Flanders we obtained data on the percentage of baptisms, the percentage of church marriages, the percentage of church funerals and furthermore the percentage of the population that takes places in the Christmas celebrations. These data on religious involvement were obtained for 2006 and 2007, and for every community the average of these two years was taken.

The second dimension of social cohesion, social order and social control, can be operationalized by means of crime figures, since the absence of crime can be considered as an indicator for the presence of social order and social control (Sampson et al., 1997). Research has demonstrated that social networks play a substantial role in reducing crime
at the neighbourhood level (Sampson et al., 2002). These data were derived from official police records. We use seven criminal acts, weighted per 1000 inhabitants for the year 2005. These seven criminal acts are intentional assault and battery, vandalism aimed at cars, vandalism aimed at other material goods, destruction and damaging, theft from motor vehicles, stealing motor vehicles, and burglary. These forms of delinquency were selected because: a) they happen relatively frequently; b) they can be considered as a serious infraction on social order and; c) the registration willingness of these facts among local police is quite high. We assume that the dark number of unreported or unregistered acts of burglary is much lower than e.g. with regard to stealing bicycles, an offence that is often not reported to the police.

The third dimension of social cohesion, namely the reduction of wealth disparities, will be measured via a number of proxy variables, measuring socioeconomic inclusion and equality within a community. Based on fiscal returns we can assess the mean income of a community and related measures of income inequality. Next to that, there are as well indicators such as the number of births in underprivileged families related to the total number of births, the share of welfare benefit users, the share of long term unemployed, the unemployment rate and the percentage of highly educated citizens.

The fourth social cohesion dimension of social capital offers more of a challenge to operationalize at the community level. Referring to social capital as those structural (i.e. networks) and cultural (i.e. norms of reciprocity and trust) features of social organization that facilitate social cooperation, it is obvious that it is not straightforward to obtain aggregate level data for all 308 communities. The most commonly used indicator for community social capital is the density of voluntary (in this case socio-cultural) associations within a community (Lauwerysen & Colpaert, 2004). This number reflects the possibilities for citizens to create social networks and to participate in their community. This indicator is routinely used in social capital research (such as Putnam, 1993; 2000; Halpern, 2006; Paldam & Svendsen, 2000).

Currently, the fifth dimension of social cohesion, namely the territorial identity, cannot be operationalized. We know from previous research that the Belgian population is quite strongly focused on the local level of the community, and in survey research it is routinely mentioned as the most important level of identification, surmounting the level of the country (Hooghe and Vanhoutte, 2009).

To analyze the dimensional structure of social cohesion, we proceed in two steps. First of all, after all data are standardized, the dimension specific indicators will be tested on their unidimensionality using an exploratory factor analysis with Varimax rotation. Of the retained dimensions, mean scales are calculated. Based on this methodology, we hope to provide an answer to the question whether it is possible to identify one single latent concept of social cohesion in its several dimensions, as the policy makers would like to see, or do we find two latent concepts of social cohesion as the classic sociologists assume?
4. Reduction of the Dimensions

The first factor analysis investigates the social cohesion dimension of shared values and norms. This is operationalized by combining the various religious participation rates. The factor analysis demonstrates that the four indicators are highly related and refer to one single latent concept of religious involvement. The factor is internally reliable with a high Cronbach’s $\alpha$ of 0.788. The strongest item of this religious factor is the baptism ratio (number of baptisms/total number of births*100). In this way, the religious involvement dimension is a strong and one-dimensional factor.

For social order, the factor analysis produced two distinct and internally valid factors. A first factor refers to violent crimes, a second one to property crime. Apparently, both forms of criminality are quite distinct phenomena, looking at the factor loadings. Only the vandalism directed toward vehicles shows strong cross and this form of crime therefore is left out of further analyses. Vandalism and intentional assault clearly load on the first factor, while burglary and theft from vehicles load on the second factor. The retained scales are reversed in order to make the interpretation meaningful, namely the absence of respectively violent and property crime.

The third set of social cohesion indicators that we examine relate to the presence and distribution of material resources and likewise the absence of inequality and social exclusion. The analysis shows that the indicators cannot be reduced to one single concept, as two factors emerge. Both factors are internal very consistent, as is shown by their Cronbach’s $\alpha$ scores. The first factor comprises the variables mean income, Gini and interquartile inequality coefficients, the average prices of houses being sold in the community and the percentage of high educated inhabitants, and can be labelled ‘economic development’. The second factor is labelled ‘deprivation’, comprising indicators such as unemployment rate, the share of long-term unemployed, the share of inhabitants that enjoy welfare benefits, and the share of births in underprivileged families. The latter factor has been reversed in order to facilitate the interpretation, namely the absence of deprivation.

The fourth social cohesion dimension comprises two variables that indicate social capital within a community, namely associational life density and voter turnout. Since both factor analyses and Cronbach’s alpha coefficients on only two items are not informative, the regular pearson correlation between the two items is .496. While this coefficient between two structural municipality indicators may be not overwhelming, it may not be forgotten that from a theoretical perspective, both variables have been associated with social capital, as for instance is represented by Putnam’s (2000) Social Capital Index. But also from a methodological point of view, collapsing the two indicators to one scale is legitimate, since it can be argued that an abstract concept, like social capital at the community level, is better represented by several indicators than by only one (Churchill, 1979; Spector, 1992).

To summarize: these first order exploratory factor analyses leave us with six intermediary variables: religious involvement, absence of violent crime, absence of property crime, economic development and absence of deprivation, and voluntary engagement. Interestingly, it is already apparent that two of the proposed Kearns and Forrest dimensions, namely social order and reductions in wealth disparities, are already
multidimensional by themselves itself. For our second order data reduction, we thus start with six instead of four different dimensions of social cohesion.

5. The Dimensional Structure of Social Cohesion

In this next phase, the six variables are entered in a second order factor analysis. The Eigenvalues greater than 1 criterion demonstrates that there are two distinct dimensions of social cohesion. The first dimension of the second order factor analysis refers to a traditional form of social cohesion. It is composed out of social capital, the absence of property crimes, and religious involvement. We can observe a strong negative factor loading of economic development, indicating that this form of social cohesion will be found most often in economically less developed areas of the region. It has to be noted, however, that economic development also has a cross loading on the second factor, and therefore economic development as such cannot be included in this second-order factor analysis. While the second factor is less clear to label, it clearly refers to a more structural or modern form of cohesion that not defined by cultural components but instead by the absence of deprivation and the absence of violent crimes. Here we observe a positive factor loading of economic development.

6. Discussion

Based on an analysis of an extended set of structural community characteristics we have demonstrated that it is empirically impossible to combine all these variables into a single comprehensive and one-size-fits-all index of social cohesion. Instead, two factors of social cohesion emerged as a result of the second order factor analysis. A first form we called modern social cohesion. This form of social cohesion depends on the absence of socioeconomic deprivation and the absence of violent crimes. A second form of social cohesion points at a more traditional form of community that depends on social capital, the absence of property crimes, and religious involvement. In these communities, there is a predominant value pattern and a strong interdependence shown by a thriving associational live and other elements of social connectedness. To a large extent, this empirical analysis confirms the basic notion, that was already developed by Durkheim that different societies or communities rely on different mechanisms to maintain their social cohesion. The two mechanisms we have identified in the current analysis certainly are not incommensurable, and they are even positively correlated, but they are clearly too distinct to be able to be summarized in one latent variable.

Despite these shortcomings and caveats, we hoped to have demonstrated that there is not a single social cohesion concept that can be applied to each and every society. That is important because, especially since the publication and the success of the Putnam (2000) volume on the demise of traditional forms of social capital and social cohesion, policy attention has been focused in a rather narrow manner on these traditional forms of social cohesion. In a review article, Stolle and Hooghe (2005) already posed the question whether this form of social capital has not become rather obsolete in modern societies, or
whether the intensive focus on it, is not one-sided. The current analysis allows us to develop some sort of an answer to this question. Traditional mechanisms of social cohesion, like voluntary associations or religious practice clearly are not obsolete, since they still seem to function in some more rural areas of Belgium. In these communities, the traditional networks apparently are still functioning and we can assume that they play a major social role. The fact that we are even able to identify this traditional form of social cohesion in a highly industrialized and densely populated country like Belgium, even strengthens the case that this form of social cohesion certainly is not obsolete, as we can assume that it will play an even more important role in less urbanized societies.

But the focus on traditional forms of social cohesion can be labelled as one-sided, as it is clear that other mechanisms for maintaining social cohesion are available. The urban regions of Belgium tend to score lower on religious involvement and participation in voluntary associations, but at the same time they are remarkably successful in fighting forms of social exclusion. We do not wish to claim here that policy makers and advocates should not express concerns about the decline of some traditional forms of social networks, but it should be kept in mind that this decline apparently can be offset by the rise of other more structural and modern forms of social solidarity. As Portes already noted: while informal forms of social cohesion might be replaced by formal arrangements, this does not yet mean that social cohesion as such would be weakened. Whether or not the traditional form of social cohesion is gradually being replaced by a modern form of cohesion remains to be investigated as this requires longitudinal data that are not available for the moment. Both forms can appear simultaneously and be complementary or informal social capital can be substituted by formal social capital. While it is always easy to equate the demise of traditional forms of solidarity, with a loss of solidarity in general, this one-sided focus obscures the fact that more modern and structural forms of social cohesion seem to be present just as well, and might even become more important in the future.