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A Preliminary Study for a New Model of Sense of Community

Stefano Tartaglia

Department of Psychology, University of Turin

Correspondence concerning this article should be addressed to Stefano Tartaglia, Dipartimento di Psicologia, Università di Torino, Via Verdi, 10, 10124 Torino, Italy.

Phone: ++390116702055 Fax: ++390116702061 E-mail: stefano.tartaglia@unito.it

A Preliminary Study for a New Model of Sense of Community

Abstract

Although Sense of Community (SOC) has been regularly defined as a multidimensional construct, most SOC scales are unidimensional. To reduce the split between theory and empirical research, the present work identifies a multi-factor structure for the Italian Sense of Community Scale (ISCS) that has already been validated as a unitary index of SOC. Our study was carried out in two steps, i.e., a) a confirmatory factor analysis was conducted of a three-factor structure and b) we tested the predictive validity of the dimensions to confirm its structure. Our results validated the three-factor solution (i.e., Place attachment, Needs fulfilment and Influence, and Social bonds). We offer the ISCS as a valid measure of SOC and as base from which to develop a new model for this construct.

A Preliminary Study for a New Model of Sense of Community

Sense of Community (SOC) is at present one of the most investigated constructs of community psychology and represents one of its most original and meaningful contributions to scientific psychology. Work on this topic has increased substantially over the last thirty years. The initial theoretical and empirical development occurred mostly in the United States. Since the 1990s, however, a significant number of studies has been carried out by investigators from many countries and cultures. Their work provides evidence of the global diffusion of this construct. Consider, for example, work by Puddifoot (1994; 1996) in the United Kingdom, Prezza in Italy (Prezza & Costantini, 1998; Prezza, Costantini, Chiarolanza, & Di Marco, 1999; Prezza, Amici, Roberti, & Tedeschi, 2001), Wiesenfeld (1996) in Venezuela (Garcia, Giuliani, & Wiesenfeld, 1999) and Fisher and Sonn in Australia (1999; 2002).

The success of this construct surely originates from its implications for planning and evaluating social interventions. As predicted by Sarason (1974), SOC has been found to be related to various indexes of quality of daily life, such as life satisfaction (Prezza & Costantini, 1998); perception of safety and security (Perkins & Taylor, 1996); social and political participation (Florin & Wandersman, 1984; Davidson & Cotter, 1989; Chavis & Wandersman, 1990); and even individual ability to use problem-focused coping strategies (Bachrach & Zautra, 1985). One must, however, appreciate the important contribution to the diffusion of this construct by McMillan and Chavis (1986). They offered a clearer and more articulated theoretical model of SOC than Sarason. The work of other researchers must also be acknowledged. Davidson and Cotter (1986), for example, developed a simple measure of SOC that catalyzed research around the world on SOC and related topics.

After nearly twenty years, McMillan and Chavis's model remains the primary theoretical reference for most studies of SOC. Only recently, however, have the dimensions of their model been examined carefully (Chipuer & Pretty, 1999; Obst, Smith, & Zinkiewicz, 2002; Long & Perkins, 2003). Generally, such studies have not supported their four components (i.e., Membership, Influence, Integration and Fulfilment of Needs, and Shared Emotional Connection). Ironically, most of these studies used SOC measures that had been validated only as uni-dimensional instruments. In fact, the Sense of Community Index (SCI - Chavis, Hogge, McMillan, & Wandersman, 1986; Perkins, Florin, Rich, Wandersman, & Chavis, 1990) that was specifically Designed to investigate the four dimensions of McMillan and Chavis's model itself appears to be uni-dimensional (Chipuer & Pretty, 1999). Recently the SCI has been significantly modified into a three-dimensional scale but not one that corresponds to the dimensions of the original theoretical model (Long & Perkins, 2003).

Several authors agree that SOC at least with reference to a geographically defined community, should represent the complexity of the tie that links people and their community of residence. This need is supported not only by McMillan and Chavis (1986) but also by many others (Riger & Lavrakas, 1981; Puddifoot, 1994; Obst, Smith, & Zinkiewicz, 2002; Long & Perkins, 2003).

We propose therefore that measures of SOC should reflect the different components of community ties. We also assert that existing evidence supports the need to revise McMillan and Chavis' original model. In our opinion, a useful way to bring empirical research closer to theoretical elaboration is to try and develop a multidimensional structure for scales that have already shown to be valid as unitary indexes of sense of community, as done by Long and Perkins (2003) with the SCI. The research reported here proceeds along this path.

In Italy SOC has also been operationalized as a single-factor construct using the Italian Sense of Community Scale (ISCS - Prezza, Costantini, Chiarolanza, & Di Marco, 1999), an adaptation of

Davidson and Cotter's Sense of Community Scale (1986). During the validation of this scale, Prezza et al (1999) carried out an exploratory factor analysis that identified four factors. They did not, however, study this structure in depth but rather validated the scale as a unidimensional measure. We believe that doing so was the wrong choice. Their first two factors have been labelled consistent with McMillan and Chavis's model. The first one (*Membership and Shared Emotional Connection*) contains items describing attachment to the community. The second factor contains items from the *Needs Fulfilment and Influence* dimensions. The third factor, labelled *Social Climate*, contains items referring to the quality of interpersonal relationships inside community and therefore recalls the *social bonding* dimension proposed by Riger and Lavrakas (1981), as well as yet again *shared emotional connection*. This dimension represents the attachment to the relational community. The fourth factor does not seem to be as relevant for it includes only two similar items (I like the house in which I live/ I like the neighborhood in which I live).

We propose that the first three factors represent the main components of the relationship between people and community to which we can relate some of the dimensions proposed by different researchers of sense of community or environmental psychology. The first component refers to pragmatic ties, based on fulfilment of concrete needs inside the community. This component includes the dimensions from the classic model of SOC of *Needs Fulfilment and Influence* (McMillan & Chavis, 1986) and the dimension of *Use of Local Facilities* proposed by Riger, LeBailly and Gordon (1981) and partly Long and Perkins's dimension labelled *Community Concerns* (2003).

The second and third components of the ISCS represent the affective attachment to the community that Riger and Lavrakas (1981) divided into two dimensions, the first related to the link between people and their physical environment (*Physical Rootedness*), the second to their relational environment (*Social Bonding*). Environmental psychology has specifically investigated attachment to

physical place (Fried, 1963, 2000; Jorgensen & Stedman, 2001) whereas community psychology has focused more on the social bonds. McMillan and Chavis's *Shared Emotional Connection* represents the quantity and quality of interaction. Recently, Long and Perkins (2003) identified a dimension labelled *Social Connections* in their work on development of the SCI.

Based on the theoretical and empirical considerations cited, we assume that a multi-factor three-dimensional structure could be validated for the ISCS, specifically a three-factor structure. We examined this assumption through two studies. First, we sought to verify the ISCS' three-factor structure by conducting a confirmatory factor analysis. The second step involved examination of the measure's predictive validity. Three categories of criterion variables were used: socio-personal characteristics; indexes of concrete use of the community; styles of attachment. The personality variables were derived from Bowlby's attachment theory (Feeney, 1998; Simpson & Rholes, 1998). These variables have been shown to predict important forms of social behavior such as attitude toward authority (Hopf, 1993) and preference for democratic vs. authoritarian government (Marris, 1991; 1996).

Given evidence in support of the influence of relational styles on social behaviours, attachment style may be an important variable for SOC development. The strength of the bonds between individuals and community is presumably determined by variables related both to territorial and relational community features. To develop the social bonds on which the sense of belonging to a community is based, we assume that an important requirement is a secure attachment style, a psychological basis to establish trustful relationships that community psychology ascribes to the members of the same community.

Relationships between SOC and the first two groups of variables (socio-personal characteristics and indexes of concrete use of the community) have already been investigated, whereas the influence

of attachment styles on SOC has not. Personality variables have only recently been considered as possible predictors of SOC (Lounsbury, Loveland, & Gibson, 2003). We hypothesized that the socio-personal characteristic would influence affective attachment to the community (physical and relational), that indexes of concrete use of the community would influence pragmatic ties to the community, based on needs fulfilment, and finally that insecure attachment style would influence negatively all SOC dimensions.

METHOD

A questionnaire was developed ad hoc to gather the data. Our measure included two validated scales, some additional items, and a set of classic socio-personal items. Our study was carried out in the city of Turin¹. Two-hundred and fifty adult residents were recruited. Participants were sampled from two residential buildings in each of the city's districts. Admittedly, this sample of convenience is not a truly representative sample of Turin's total population but it was selected to include residents from throughout the city. The sample was composed of 44.8% males and 55.2% females; their average age was 33.7 (SD = 14.9); 15.4% of the participants were college graduates, 68.7% High-school graduates and 15.9% had a lower educational level; finally 71.8% of the participants had never been married, 22.6% were married, 3.1% were divorced and 2.6% widows or widowers.

As suggested by Prezza et al. (1999) the neighbourhood in big cities is the psychologically relevant community of residence. For this reason all references to the place of residence in items were made to the neighbourhood unit. Participants were contacted directly at home, completing the questionnaire took about 15 minutes and respondents were given a small token of appreciation.

The study's measure was composed of the following components::

¹ Turin is a big city of the North-west of Italy (approximately 1,000,000 inhabitants)

- *Italian Sense of Community Scale (ISCS)* including 18 items (Prezza, Costantini, Chiarolanza, & Di Marco, 1999).
- Italian version of *Measure of Attachment Quality (MAQ)* including 14 items belonging to four subscales concerning the secure, avoidant, worried-ambivalent and merger-ambivalent styles of attachment (Carver, 1997; Roccato & Tartaglia, 2003).
- 8 items describing various activities that people could do in the neighbourhood: going to mass in the local parish, regularly attending the parish, bar or other public places in the evening, walking around, shopping, working.
- 8 demographic items relating to sex, age, marital status, education, occupation, number of children, years of residence, home ownership.

To verify the multi-factor structure of the ISCS we conducted an exploratory factor analysis, an item analysis, and an internal consistency and reliability analysis by calculating Cronbach's alpha and Guttman's split-half reliability. The structure suggested by the exploratory factor analysis was then tested by means of a confirmatory factor analysis. Finally, we tested a structural equation model to verify the assumption of influence of different predictors on sense of community.

RESULTS

Confirmatory factor analysis

Our preliminary analysis showed that three items were not very consistent with the others; each loaded below .30 and had item-total correlations below .25. For those reasons, we eliminated them from further consideration. Without these three items, Cronbach's alpha as a measure of the ISCS's internal consistency increased from .76 to .79, a value close to that

obtained by the scale's authors (.83). Guttman's split-half reliability index at .80 also approached that of the original one (.81).

We repeated the exploratory factor analysis using an oblique rotation on the first three factors extracted. For statistical and theoretical reasons, we examined three rather than four factors. Statistically, the factors' scree-plot validated this decision. The first three factors explained nearly the same proportion of variance (45.5%) as the four-factor solution (48.8%). The factors explained respectively 26.9% of the variance (the first), 9.9% (the second) and 8.7% (the third). From the theoretical perspective, we determined that the fourth factor was not really relevant.

The factor structure after the rotation (see table 1) was, in fact, quite similar to the original one. Noted differences, however, suggested new interpretations of two factors. We labelled the first factor *Place Attachment* since the items loading on this factor refer to people living in the local community but only to the place itself. Since the items included in the third factor related to the quality and quantity of social relations rather than to satisfaction of practical needs, we labelled it *Social Bonds*. The composition of the second factor remains the same and thus the original label, *Needs Fulfilment and Influence*, was retained.

We then conducted a confirmatory factor analysis ($N = 250$) of this structure using a partial disaggregating approach (Bagozzi, 1993; Bagozzi & Edwards, 1998), by examining groups of aggregated rather than single items as factor indicators. The advantage of this approach is that it reduces the number of variables in the model and thereby the number of items likely to be eliminated in a confirmatory factor analysis. Specifically, we limited the number of indicators for each factor to three items and combined pairs of items loading on *Place Attachment* and *Social Bonds*. We decided to directly use as indicators of *Needs Fulfilment and Influence* the three items loading on this factor

We tested the model's fit with standard indexes including Chi-Square, CFI (Bentler, 1990), TLI (Tucker & Lewis, 1973) – also known as NNFI (Bentler & Bonett, 1980) – and RMSEA (Steiger, 1990). To attenuate the specific limitation of each of these methods, parallel use of different indexes is usually recommended (Bollen & Long, 1993). If the model is valid, the chi-square value should not be significant ($p < .05$) which means that parameters estimated by the model are not significantly different from parameters calculated on data. CFI and TLI values should be $> .90$ (Bentler, 1990). Browne (1990) suggests that RMSEA values $< .08$ are acceptable and those $< .05$ are good.

The three-factor model of ISCS met all three criteria: Chi-Square = 33.06 (24 df; $p = .10$); CFI = .98; TLI = .97; RMSEA = .043. All parameters are significant, factor loadings and error variances are reported in table 2. Factors intercorrelations ranged from $r = .50$ to $r = .69$; the strongest relationship is between *Place Attachment* and *Social Bonds*.

Results obtained led us to conclude that (a) the three-factor structure of ISCS is valid and fits the data gathered from the participants; (b) the ISCS's items are good indicators for their respective identified factors.

Predictors of Sense of Community

Consistent with the criteria explained above, we conducted a structural equation model that assumed the influence of individual characteristics on *Place Attachment* (i.e., length of residence) and on *Social Bonds* (i.e., sex and number of children), the influence of indexes of concrete use of the community on *Needs Fulfilment and Influence* and the influence of the two ambivalent attachment styles on all the scale's dimensions (i.e., Worried on *Place Attachment* and Merger on the other two). The other attachment styles have not been included in the model since preliminary analyses revealed low correlations between these variables and SOC. The respondent's age was not expected to be a direct predictor of sense of community. The model we tested proved acceptable according to all the fit

indexes: Chi-Square = 69.12 (61) $p = .22$; CFI = .98; TLI = .97; RMSEA = .026. All estimated parameters were significant. The validated model is represented in figure XX. The whole set of predictors explains 14% of the variance of *Place Attachment*, 15% of *Needs Fulfilment and Influence* and 20% of *Social Bonds*.

Concerning individual characteristics, number of children ($\beta = .35$) and being a woman ($\beta = .20$) relate to *Social bonds*, whereas length of residence relates to *Place Attachment* ($\beta = .18$). Age does not relate directly to any ISCS dimensions but does relate to other predictors. It correlates positively with number of children ($\beta = .74$) and length of residence ($\beta = .47$) and negatively on going to public places in the evening ($\beta = -.30$). Finally, owning one's own home also correlates with the length of residence ($\beta = .34$).

Indexes of concrete use of the local community primarily relate to *Needs Fulfilment and Influence*. This dimension also correlates with walking around the neighbourhood ($\beta = .19$), going to public places in the evening ($\beta = .18$) and working inside the neighbourhood ($\beta = .18$). Walking around also has a strong link to *Place attachment* ($\beta = .30$).

Attachment styles related only minimally to the ISCS dimensions. The two ambivalent styles correlated negatively with the three ISCS factors: worried-ambivalent with *Place Attachment* ($\beta = -.14$); and merger-ambivalent with *Needs Fulfilment and Influence* ($\beta = -.18$) and *Social Bonds* ($\beta = -.19$).

DISCUSSION

The present work achieved its two stated objectives. We have validated by means of confirmatory factor analysis a three-factor structure for ISCS that allow us to link theoretical elaboration and empirical research to SOC. Indeed, the ISCS structure could be generalized to SOC because the ISCS

proved to be a valid measure of this construct (Prezza, Amici, Roberti, & Tedeschi, 2001; Prezza, Pilloni, Morabito, Sersante, Alparone, & Giuliani 2001; Zani, Cicognani, & Albanesi 2001).

The validated structure is partly similar to the classic model of sense of community. The factor *Needs Fulfilment and Influence* represents the pragmatic relationship between people and community. This dimension incorporates two of the dimensions originally proposed by McMillan & Chavis, from which its name originated. The other two ISCS factors represent the affective ties with two aspects of the local community, the physical one (i.e., *Place Attachment*) according to the classical meaning used in environmental psychology, and the relational one (i.e., *Social bonds*) that is similar to the *Shared Emotional Connection* dimension of the classic model. The two factors referring to the affective ties with the local community are consistent with the model of community ties proposed by Riger and Lavrakas (1981) that distinguished ties with a place (physical rootedness) from ties with people (social bonding).

In their work on the SCI, Long and Perkins (2003) also identified a three-dimensional structure scale using confirmatory factor analysis. Their structure included a dimension relating to the tie with the relational community (Social Connections). They also identified a set of four items that related to place attachment but chose to exclude them from the scale because they did not consider this dimension relevant to SOC.

We do not agree with this decision. In our opinion, SOC should include the tie with physical territory for two reasons. First, there is empirical evidence that structural characteristics of communities relate to developing and maintaining SOC (Brodsky, O'Campo, & Aronson, 1999). The second reason is theoretical and more relevant. Current conceptions of community psychology recognize place not only as source of limits and resources but also of affective values (Amerio, Fedi, & Roccato, 2000). We also encourage community psychology to increase its integration with environmental psychology if it

seeks to elaborate more complex and explicative constructs. This integration of fields of inquiry, i.e., community and environmental psychology, would unite the field and ideally merge the study of person- environment fit from environmental psychology with the SOC research of community psychology and push both to further study of groups and relational organizations.

Validating the model in which different dimensions of sense of community have different predictors is an external validation of the goodness of the three-factor structure of SOC. The pragmatic tie between people and community of residence (*Needs Fulfilment and Influence*) really reflects the concrete benefit of using resources present in the community (walking around, going to public places, working). As suggested by McMillan and Chavis (1986), this link is likely to reinforce development of SOC. *Place Attachment* seems to be influenced by knowledge and familiarity of the physical environment, the length of residency and the habit of walking around and therefore exploring the neighbourhood. Together, these make people recognize the neighbourhood and get used to the physical territory in which they live.

Finally, *Social Bonds* is related to the number of children within a family. At least until the children reach late adolescence, much of family life occurs mainly within the local community, where they attend school, develop their social network and acquire their first freedom of movement. We can assume, as a consequence, that in order to take care and control their children, parents develop many relevant social bonds inside the community of residence, with school staff, parents of children's friends and other key-figures of the community (the parish priest, shop-keepers, janitors of their block of flats, and so on).

Moreover, attachment to relational community is higher among women probably because of their social role that, in the Italian culture, still assigns to the mother the majority of responsibility for

childcare and home management, binding them more to local interaction. Undoubtedly, this assumption requires further study.

Another necessary development for this work is to increase the number of predictors for SOC dimensions in order to explain more of its variance. Two promising avenues for this appears to concern further study of personality variables and community variables. Attachment style, for example, has been shown to have significant but limited explanatory capacity, therefore other personality variables could be more useful to predict sense of community, for example the big five dimensions, as suggested by Lounsbury, Loveland and Gibson (2003).

Characteristics of local community (i.e. town-planning structure, resources, demographic composition) were intentionally not considered in the present work because of its focus on the internal structure of SOC. Their influence on the SOC has, however, been recognized (Brodsky, O'Campo, & Aronson, 1999) and relationships between these variables and SOC dimensions need further investigation.

A limit of the present study is that the sample was not truly representative of the population of Turin. Our findings justify replication using large representative samples of Turin and other settings. The identified model should be validated on residents of large and small urban areas as well as of residents living in local communities of different sizes (small towns, villages), to verify the extent to which it can be generalised. Finally another interesting development of the present study should be the investigation of changes in model dimensions. SOC appears to change across time and conditions (Loomis, Docket, & Brodsky, 2004) so it would be important to identify which contingent conditions influence positively or negatively the dimensions of the present model of sense of community.

CONCLUSIONS

We think the SOC model we identified is relevant because it considers the practical relation between individual and community, based on needs satisfaction and on the use of concrete resources, and the affective relation with other community members, present in the classic model. But it also

includes place attachment that until now had been barely considered in community psychology (Chavis & Pretty, 1999). For these reasons, we believe that the model is consistent model with contemporary concepts of community psychology (Levine & Perkins, 1987; Amerio, 2000) that define SOC by means of three principal dimensions: the territorial one, the relational one and the one of the action (community as place for individual and social action).

In any case we do not think the model is yet complete. It lacks a component we thought could be the fourth dimension of sense of community that is related to identification of self with place. Several authors stressed that where people live can contribute to defining individual identity (Proshansky, Fabian, & Kaminoff, 1983; Puddifoot, 1994; Mankowski & Rappaport, 1995). Obst, Smith and Zinkiewicz (2002) reported empirical findings supporting this assumption. Therefore we think that a necessary development of the present work is to try to enlarge the sense of community model introducing this fourth dimension.

This research is just the first step towards the development of a new empirically based SOC that allows to clarify relationships between this construct and important psychosocial variables, such as individual wellbeing, feeling of security, and relevant social actions such as participation in its various forms. Determining stable relationships between SOC dimensions and psychosocial variables could allow the planning of precise intervention strategies on single dimensions predictors in order to obtain specific effects on variables related to these dimensions. Currently, many agree that a strong tie to the community is not necessarily a value to pursue indiscriminately (Wiesenfeld, 1996). Some communities, for example, are so close-knit that they discriminate against and penalize diverse groups including minorities and people with problems.

In-depth knowledge of the different components of SOC, their predictors and their social relapses could be, in our opinion, the basis on which useful actions can be undertaken to improve

coexistence and quality of life in local communities that, in the age of globalization, are still a fundamental context of life that cannot be set aside.

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Table 1. Explorative factor analysis of ISCS: Factor Loadings.

	Place Attachment	Needs fulfilment and Influence	Social bonds
I like the neighbourhood in which I live	.86		
This is a pretty neighbourhood	.82		
When I travel I am proud to tell others where I live	.62		
I feel like I belong here	.52		
I like the house in which I live	.52		
I feel safe here	.49		
This city gives me an opportunity to do a lot of different things		.72	
If people here get organised they can achieve their objectives		.70	
If I need help, this neighbourhood has many excellent services available to meet my needs		.64	
I do not like my neighbours			.66
The people in this neighbourhood are polite and well-mannered			-.64
Many people in this neighbourhood are available to give help if somebody needs it			-.62
In this neighbourhood there are customs and traditions that I usually respect			-.51
It is hard to have positive social relations in this neighbourhood			.37
It would take a lot for me to move away from this neighbourhood			-.33
eliminated ITEMS			
I feel I can contribute to neighbourhood politics if I want to			
In this neighbourhood there are holidays and anniversaries involving the majority of residents			
In this neighbourhood there are few opportunities to meet people.			

Loadings below .30 are omitted.

Table 2. Confirmatory factor analysis of ISCS: factor loadings and error variances.

Indicators	Place attachment	Needs fulfilment and Influence	Social bonds	Error variances
In1_1	.66			.57
In1_2	.72			.48
In1_3	.81			.35
Item 4		.42		.82
Item 11		.61		.63
Item 12		.77		.41
In3_1			.58	.67
In3_2			.51	.74
In3_3			.67	.56

Figure 1. Sense of Community Prediction Model: Standardized Regression Weights, Variances and Correlations.

