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The Effects of Neighbourhood Disorder on Life Satisfaction of Ethnic Majority and Minority Group Members: Evidence From 12 Central-Eastern European Countries

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Abstract

While research has shown a negative relation between neighbourhood disorder and indicators of well-being, this evidence comes predominantly from Western European countries, relies on subjective measures of disorder, and is indifferent to ethnic specificities. In this paper, we examine the relationship between neighbourhood disorder and life satisfaction across neighbourhoods in 12 Central-Eastern European countries. We use an exogenous measure of disorder, and account for the presence of respondents' own ethnic group in the neighbourhood, as we propose that it may condition the effect of disorder on life satisfaction. Using survey data covering 18,743 residents of 897 local areas across 12 countries, we found that neighbourhood disorder was negatively related to life satisfaction for both ethnic majority and minority respondents, over and above individual and neighbourhood characteristics. This effect was, however, differently moderated by ethnic in-group share in the neighbourhood for ethnic majorities and minorities. Among ethnic majority members, disorder had a negative effect on their life satisfaction only when there were high levels of co-ethnics' presence in the neighbourhood, but not at low levels. By contrast, for minority members, the negative effect of neighbourhood disorder was significant at lower levels of co-ethnic concentration, but not at its higher levels. These results suggest that whereas for minority groups the presence of co-ethnics buffers the negative effects of the aversive environment on well-being, for ethnic majority members it plays an opposite role. We argue that members of the



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dominant, majority population find having to attribute disorder to their in-group problematic, which results in lower life satisfaction.

Keywords

neighbourhood disorder, in-group share, majority, minority, life satisfaction, Central-Eastern Europe

The characteristics of neighbourhoods affect a range of individual outcomes of their residents that relate to how people function both within and outside their local areas. These include, among others, employment opportunities, children's educational performance, civic engagement, the composition of social networks or physical health (Manley, Van Ham, Bailey, Simpson, & Maclennan, 2013). Several studies have shown that outcomes that are not directly observable are also affected by neighbourhood characteristics. For example, it was found that people living in neighbourhoods characterised by disorder tend to feel greater fear and mistrust (Ross, Mirowsky, & Pribesh, 2001), powerlessness, isolation and distress (Ross & Mirowsky, 2009), and less residential satisfaction (Parkes, Kearns, & Atkinson, 2002).

In this paper, we look at the relationship between neighbourhood disorder and life satisfaction – an important component of well-being, which can be defined as the evaluation of quality of life as a whole (de Vroome & Hooghe, 2014; Knies, Nandi, & Platt, 2016). In addition, we account for the presence of co-ethnics (persons of the same ethnic background) in the neighbourhood, and differentiate between majority and minority group members, which so far has rarely been done in previous studies on the effects of neighbourhood disorder. Building on research suggesting that both ethnic diversity and concentration of ethnic groups determine perceptions of disorder, we propose that the presence of one's co-ethnics in the neighbourhood conditions the relationship between disorder and individual life satisfaction. We also argue that analysing ethnic minorities separately from majorities should be of particular interest for the study of the effects of neighbourhood disorder, as minority members are often considered responsible for causing it (Vancluysen, van Craen, & Ackaert, 2011).

We use survey data from a face-to-face survey conducted in 12 Central-Eastern European countries, thereby providing a valuable contribution to the literature on neighbourhood effects, which so far has mainly been based on Western European societies. We believe that studying Central-Eastern European countries can add new insights into research on the consequences of neighbourhood disorder and ethnic composition on individual outcomes for two main reasons. First, the nature of ethnic diversity is different in Central-Eastern Europe than in Western Europe. In the latter, ethnic diversity is mostly driven by immigration, while in the former – minority groups are national minorities who have lived in the same territories for centuries (Waldenberg, 2000; see also Letki & Kukołowicz, 2019). Second, in Western Europe, ethnic minorities' position in society often corresponds to the average socio-economic status of the given immigrant group upon

their arrival in the host country (Vernby, 2013). This differentiating socio-economic condition is absent in Central-Eastern Europe, where under Communism social policies and access to public goods were stratified more by the urban/rural divide than ethnic status. The only group that has experienced consistent marginalisation and discrimination are the Roma (Barany, 1998), while other ethnic groups were to an extent adversely affected by the economic transition, but previously enjoyed similar socio-economic status to the majority (Ringold, 2005). Therefore, ethnic diversity in the neighbourhood is not accompanied by socio-economic disadvantage by default, as is often the case in Western European countries and the U.S.¹ Thus, our design overcomes some significant limitations of previous research that was unable to deal with the endogeneity of the socio-economic status of the neighbourhood in the context of ethnic diversity. This, in turn, makes our study particularly valuable for understanding ethnic composition effects on life satisfaction, as we argue below.

Neighbourhood Disorder and Life Satisfaction

While social disorder has no single definition, it can be broadly characterised by signs of erosion of commonly accepted norms and values, which are related to certain behaviours and their physical consequences, such as abandoned cars, broken windows, graffiti on buildings or litter in the streets (Jaśkiewicz & Wiwatowska, 2018; Sampson & Raudenbush, 1999; Vancluysen et al., 2011). Disorder is thus indicated by social and physical cues visible to the residents. While disordered neighbourhoods are noisy, dirty and run down, on the other side of the continuum we have clean, safe and peaceful neighbourhoods with well-maintained houses (Ross & Jang, 2000).

The concept of disorder has been the subject of interest in social studies for quite some time, with many scholars investigating its perceptions and effects on individual outcomes. The underlying theoretical assumption of these studies is that a disordered environment signals weak social control and order, which can induce a feeling of threat, mistrust, stress and isolation among residents (Ross & Mirowsky, 2009; Ross, Reynolds, & Geis, 2000). In line with this argumentation, neighbourhood disorder has been shown to be related to lower residential satisfaction (Parkes et al., 2002), higher fear and mistrust (Sampson & Raudenbush, 2004) and perceived powerlessness (Ross et al., 2000), all of which have an effect on personal well-being.

Nevertheless, the association between neighbourhood disorder and life satisfaction has not been subject to systematic research. There are clear theoretical reasons as to why neighbourhood disorder might have a negative effect on life satisfaction, over and above individual characteristics (Sampson, Morenoff, & Earls, 1999; Sampson & Raudenbush, 2004; Sampson, Raudenbush, & Earls, 1997). Daily experience of a social control break-

1) This is further confirmed empirically by the data used in this paper, as there is no statistically significant correlation between neighbourhood disorder and ethnic diversity in any of the studied countries.

down, vandalism, garbage and other signs of erosion in the living environment is stressful and thus likely to affect the general well-being of inhabitants (Ross et al., 2000). A relation between perceived neighbourhood disorder and depressive symptoms was shown by Ross and Jang (2000) and Latkin and Curry (2003) with U.S. data. More recently, Jaśkiewicz and Wiwatowska (2018) found in a study in Poland that perceptions of neighbourhood disorder weakened general well-being, through a reduced neighbourhood identity. That is, residents who noticed neglect and disorder were less likely to identify with their neighbourhood, and thus were less satisfied with their lives.

Most previous studies on the effects of neighbourhood disorder on individual outcomes, including the ones cited above, have relied on self-reported measures of disorder. These have advantages (e.g., are up to date, relate to an area that is meaningful to the respondent), but they may be affected by the individual's well-being, thus bringing concerns about the direction of causality between neighbourhood disorder and subjective outcomes. Specifically, individuals who are more satisfied with their lives may also perceive their neighbourhoods more positively (Shields & Wooden, 2003). Therefore, relying on an external measure of neighbourhood disorder is desired to deal with the endogeneity of evaluations. In the current paper, we rely on observations made by interviewers at the moment of the interview, which are independent of the respondents' subjective perceptions. Our approach approximates the systematic social observation approach, which has proven to be a reliable measure of neighbourhood disorder (Sampson & Raudenbush, 1999). Building on the above cited literature, we expect that physical disorder in the neighbourhood, defined on the basis of visual clues, will be negatively related to life satisfaction across the 897 neighbourhoods in the 12 countries in our study.

Neighbourhood Disorder, Ethnic In-Group Share and Minority/Majority Status

From the perspective of in-group favouritism, well-being should be dependent on the presence of in-group members in the neighbourhood. Group identity and sense of belonging have been identified as relevant correlates of well-being (for a review, see Smith & Silva, 2011), and they are more likely to develop in the context of the socialising influences of in-group members. Moreover, in-group members are an important source of social and psychological support, especially among minority groups (Almeida, Molnar, Kawachi, & Subramanian, 2009), and thus an individual surrounded by mostly ethnic out-group members is likely to feel worse than when surrounded by in-group members (see also Koopmans & Schaeffer, 2015). Research on the determinants of social interaction and social identity shows strong evidence for the principle of *homophily*, i.e., the preference for affiliation and contact with people who are similar in terms of key characteristics, such as ethnicity. Homophily has been used to explain lower instances of contact, weaker community ties, weaker identity and solidarity with out-group members, as well as lower honesty, reciprocity and life satisfaction in ethnically diverse settings (Costa & Kahn,

2003; Glaeser, Laibson, Scheinkman, & Soutter, 2000; McPherson, Smith-Lovin, & Cook, 2001). The principle of homophily has also been used to explain the effect of out-group share in the neighbourhood on indicators of social cohesion. For example, studies of different political participation rates among members of ethnic minorities and the majority population demonstrate that as the concentration of a given ethnic group in a local area increases, its members are more likely to become politically involved (Fieldhouse & Cutts, 2008a, 2008b). Similarly, Koopmans and Schaeffer (2015) showed that the neighbourhood in-group share was positively associated with higher levels of trust, efficacy and overall neighbourhood cohesion. In relation to well-being, however, research has been scarce and with mixed findings. Mexican-Americans living in areas with a high concentration of their co-ethnics had better mental health (Ostir, Eschbach, Markides, & Goodwin, 2003), but the opposite was found for African-Americans (Henderson et al., 2005). Knies et al. (2016) also did not provide a clear conclusion: greater own-group concentration was related to higher levels of well-being among Black Africans and among UK born Indians and Pakistanis, while for first generation Indians and Pakistanis the pattern was the opposite. The explanation given by the authors was that second generation immigrants gain more support from more ethnically dense areas, which could stem from the institutional group specific resources as well as positive identity derived from having in-group members nearby (Knies et al., 2016).

Given the above review, we propose that the presence of in-group members may moderate the effect of neighbourhood disorder on life satisfaction. Specifically, we reason that neighbourhood disorder may be less aversive to people living among a high proportion of co-ethnics, since the presence of in-group members provides them with a sense of embeddedness and collective efficacy in the context of social problems, such as disorder in the living environment. Such a hypothesis is partially supported by Fong and colleagues, who found that stronger neighbourhood identification attenuated the negative effects of low neighbourhood socioeconomic status on perceived neighbourhood quality, which in turn positively affected mental health (Fong, Cruwys, Haslam, & Haslam, 2019). Similarly, Ross and Jang (2000) argued that connections with neighbours buffered the harmful effects of living in a neighbourhood characterized by disorder on fear and mistrust. We propose that the presence of co-ethnics may work similarly, in that it may provide a sense of belonging and social support that buffers against aversive environments.

Disorder and the Presence of Ethnic Minorities

While the above reasoning explains the rationale for expectations about the moderating effect of ethnic in-group share on neighbourhood disorder for individual life satisfaction, we need to acknowledge that disorder and low-status are stereotypically linked to the presence of ethnic and racial minorities (Sampson & Raudenbush, 2004). Research has shown that the presence of ethnic minorities in the neighbourhood increases perceived crime and disorder (Quillian & Pager, 2001, 2010), while majority dominated neighbour-

hoods are seen as less crime and disorder affected. These stereotypes are further reinforced by policing patterns and racial profiling (Weitzer & Tuch, 2005). As a result, we can expect that visual cues of physical disorder will be perceived as more troubling in majority-dominated than minority-dominated neighbourhoods, because they stereotypically “belong” to the latter (Wickes, Hipp, Zahnow, & Mazerolle, 2013). Therefore, while we expect that neighbourhood disorder will be less strongly related to life satisfaction in areas in which minorities are concentrated, we do not expect to find the same mechanism for members of majority groups. In other words, the life satisfaction of the majorities would be negatively affected by the visual cues of social disorder irrespective of the presence of people from their ethnic background in the neighbourhood. All the above propositions have been formulated based on research originating from the U.S. and Western Europe, which has dealt with (visible) immigrant minority groups and their relations with the native majority. Investigating whether the same mechanisms are found in Central-Eastern Europe, where most minority groups are native-born and they are neither ‘visible’ nor significantly different in terms of physical appearance, is another important contribution to our study.

Research Hypotheses

Based on the literature presented above, we hypothesize that neighbourhood disorder is negatively associated with life satisfaction (H1). We also propose that the concentration of one’s ethnic group in the neighbourhood is related to higher life satisfaction (H2). Regarding both hypotheses, we investigate the differences between ethnic majority and minority members. Finally, we propose that the negative relationship between neighbourhood disorder and life satisfaction is buffered by the presence of co-ethnics in the neighbourhood among ethnic minorities (H3), but not among majorities.

Method

Participants and Procedure

To test the above hypotheses, we used data from a face-to-face public opinion survey carried out in 2014 in Central-Eastern Europe, funded by ERC Starting Grant 240830 as part of the project “Public Goods through Private Eyes. Exploring Citizens’ Attitudes towards Public Goods and the State in Central-Eastern Europe”. The survey covered 14 post-communist countries with an average sample size of 1,500 respondents in each country, and was designed to enable us to capture the effect of local context on attitudes and behaviour. For this purpose, the sample was clustered at a low level – village, small town (the lowest administrative units) or in the case of large cities – a city district.² This was the lowest level of clustering possible for which census data could be obtained. Even though in some cases, such as large cities, the city district could be considered too large to be

called a 'local area', addresses were in fact drawn on the basis of the random walk procedure (for addresses prelisting); thus they were clustered spatially. We subsequently call this low level of data aggregation 'neighbourhood'. Survey data was merged with census information at the neighbourhood level. We supplemented the survey dataset with census data on the ethnic composition of particular local areas for the nearest year available, and to each respondent ascribed a figure representing the share of their co-ethnics in the neighbourhood. We also matched the main dataset at the neighbourhood level with information about the level of disorder observed by the interviewers in the neighbourhood, which they noted in their reporting forms. Due to missing data, Poland and Ukraine were excluded from the analyses. Therefore, the dataset includes 19,087 respondents nested in 900 local areas (neighbourhoods) across 12 countries. For details on sample sizes and fieldwork dates, see [Table A2](#) in the [Appendix](#).

Since our dataset was clustered at the neighbourhood level – several respondents from the same neighbourhood were sampled – we applied a multilevel regression model that accounted for individual, neighbourhood and country level variance. We fitted separate models for ethnic majority and minority members. We conducted all statistical analyses in Stata version 15.0, applying the `xtmixed` command with observations clustered at the neighbourhood and country level.

Measures

Dependent Variable

While life satisfaction is a multidimensional concept, it is customary to rely on a simple one-item measure that asks people to rate their level of satisfaction with their life as a whole (Shields, Price, & Wooden, 2009). The advantage of such a simple measure is that it allows for a subjective evaluation and focus on those dimensions of respondents' life that they themselves consider relevant. Respondents were asked "All things considered, how satisfied are you with your life as a whole nowadays?" and offered an 11-point answer scale, from 'Completely dissatisfied' (0) to 'Completely satisfied' (10). [Table 1](#) presents averages for the 12 countries covered by our study. It is clear that life satisfaction is significantly cross-nationally differentiated, with Bulgaria (the country with the lowest average in the sample) scoring 17.5% lower than the Czech Republic (the country with the highest average).

2) Different sampling approaches were used in different countries; in EU member countries LAU2 were used as the lowest level of aggregation, while in non-EU countries municipalities were used as an equivalent. In large cities, city districts were used as a lower level of aggregation.

Table 1

Life Satisfaction Across the Studied Countries

Country	<i>M</i> (0-10)	<i>SE</i>
Czech Republic	7.19	0.05
Slovakia	6.93	0.06
Croatia	6.80	0.05
Slovenia	6.77	0.05
Lithuania	6.76	0.06
Estonia	6.49	0.06
Serbia	6.44	0.06
Latvia	6.37	0.06
Romania	6.36	0.06
Moldova	5.85	0.06
Hungary	5.75	0.06
Bulgaria	5.27	0.06

Independent Variables

The main independent variables of interest refer to the neighbourhood level.

In-group share — was created as a combination of information about the respondent's ethnic group (based on the survey question "Which ethnic or national group do you belong to?") and census-based information about the share of a given ethnic group in the local area. The ethnic groups included in our analysis are listed in Table 2. Their presence in our sample is determined by the availability of census information about their share in the particular neighbourhoods. They collectively constitute 13.8% of our sample, but this figure varies between countries, from as little as 3.6% in Slovakia to as much as 34.3% in Latvia. Ethnic majorities live in the neighbourhoods where their share is, on average, 0.83 ($SD = 0.01$) and a maximum of 100%, while ethnic minorities live in the neighbourhoods where their share is, on average, 0.15 ($SD = 0.01$) and a maximum of 99.1%. Table 2 displays the average concentration of minorities and national titular groups (majorities) across countries in the sample.

Table 2

Ethnic Groups Included in the Analysis in Particular Countries and Their Concentration in Neighbourhoods

Country	Ethnic group	Average share in the neighbourhoods (SD)	
		Minorities	Majority
Bulgaria	Roma, Turkish	0.13 (0.03)	0.85 (0.03)
Croatia	Bosniak, Czech, Hungarian, Italian, Macedonian, Montenegrin, Roma, Russian, Serb, Slovak, Slovene, Turkish	0.06 (0.02)	0.92 (0.01)
Czech Republic	Czech, Moravia, Polish, Roma, Silesian, Slovak, Ukrainian	0.09 (0.02)	0.89 (0.01)
Estonia	Belarusian, Finn, Jewish, Latvian, Russian, Tatar, Ukrainian	0.31 (0.04)	0.58 (0.04)
Hungary	German, Roma, Romanian	0.04 (0.01)	0.94 (0.00)
Latvia	Belarusian, Jewish, Lithuanian, Polish, Russian, Roma, Ukrainian	0.23 (0.01)	0.60 (0.02)
Lithuania	Armenian, Belarusian, Jewish, Karaite, Polish, Roma, Russian, Tatar, Ukrainian	0.13 (0.02)	0.85 (0.02)
Moldova	Bulgarian, Gaugaz, Roma, Romanian, Russian, Ukrainian	0.20 (0.04)	0.78 (0.03)
Romania	German, Hungarian, Roma	0.10 (0.03)	0.93 (0.01)
Serbia	Albanian, Bosniak, Bulgarian, Bujevci, Croat, Hungarian, Montenegrin, Roma, Romanian, Slovak, Vlah	0.14 (0.04)	0.86 (0.02)
Slovenia	Bosniak, Croat, Macedonian, Montenegrin, Muslim, Rusin, Serb, Ukrainian	0.00 (0.00)	0.96 (0.02)
Slovakia	Czech, Hungarian, Roma, Russian	0.38 (0.07)	0.83 (0.03)

Neighbourhood disorder — The creation of our second main independent variable of interest was inspired by the methodology of measuring disorder in urban areas through systematic observation (Raudenbush & Sampson, 1999; Sampson & Raudenbush, 1999). The original methodology was based on videotape recordings and observation, while ours is limited to observation by the interviewers working in the respective areas. As part of the standard procedure of reporting the contact attempt at the drawn address, all interviewers had to fill in a contact form for the given address. The form had a format consistent with previous work done by the interviewers, as well as with the contact forms used in other major cross-national surveys, such as the European Social Survey. It

included three questions regarding the quality and order of the contact address's surroundings. These read: 'What is the general technical state of buildings/flats in this area?' (response scale 1 = *very good* to 5 = *very bad*); 'Is there any garbage or litter around the building, in which the drawn person resides?' (1 = *yes, a lot*, 5 = *none*); 'To what extent are the effects of deliberate destruction of buildings noticeable: writings on the walls (graffiti), broken or destroyed lighting in the building, lamps, intercoms, lifts, etc.?' (1 = *very noticeable*, 5 = *they do not occur*). The three questions included in the contact form were recoded in the same direction so that a higher number indicated higher disorder, were summed up and then averaged at the neighbourhood-level, creating an additive neighbourhood-level index of neighbourhood disorder. The reliability of the three disorder items was $\alpha = .78$ in Bulgaria, $.82$ in Croatia, $.64$ in the Czech Republic, $.78$ in Estonia, $.73$ in Hungary, $.62$ in Latvia, $.74$ in Lithuania, $.66$ in Moldova, $.75$ in Romania, $.68$ in Serbia, $.77$ in Slovakia, and $.75$ in Slovenia.

The contact forms were recorded for all issued addresses, resulting in a total of 36,381 forms for the 897 neighbourhoods in the 12 countries in the study. The majority of interviewers had respondents in more than one area and thus provided ratings for multiple addresses in various neighbourhoods. The average number of neighbourhoods rated by one interviewer was 1.70 ($SD = 1.65$).³ The average number of contact forms filled in by interviewers differed between countries, with the overall mean of 45.56 contact forms per interviewer ($SD = 41.03$).⁴ The disorder score for each neighbourhood therefore reflects the average of 40.56 contact forms filled in for a given locality.⁵ The resultant neighbourhood-level dataset was merged with the main, individual-level dataset based on the neighbourhood identifiers. Thus, each respondent in the dataset has the same score of neighbourhood disorder.

Control Variables

Individual-level — To account for the possible confounding effect of the amount of time that the respondent had spent in the given area on life satisfaction, we controlled for the number of years lived in a given neighbourhood (based on the question *Since when have you lived in this neighbourhood?*). We also accounted for several other characteristics that have been identified as determinants of life satisfaction, such as gender, age, education level, employment status (including retirement and disability), and religiosity (based on the question *How often do you go to your church other than, for example, for weddings or funerals?*, with the word 'church' adjusted depending on which denomination the re-

3) This varied from 1.71 ($SD = .58$) in Slovenia to 3.63 ($SD = 4.34$) in Moldova. There were generally fewer interviewers in smaller countries, with the same - constant - number of neighbourhoods.

4) The lowest average number of contact forms per interviewer was recorded in Hungary (24.33, $SD = 13.05$) and the highest in Estonia (80.09, $SD = 47.06$).

5) The number of addresses drawn differed between types of neighbourhoods (with the lowest number in rural areas and the highest in densely populated urban areas), as well as between countries.

spondent indicated, and an answer scale from 1 (= *never*) to 8 (= *several times a week*). We also controlled for the size and type of settlement (village/town/city/large city).

Neighbourhood level – Previous research has identified a significant negative effect of ethnic diversity on life satisfaction. In order to ensure that the ethnic in-group share is not confounded by the overall level of heterogeneity, we controlled for ethnic diversity measured with the Herfindahl index, where 0 means perfect homogeneity and 1 means perfect heterogeneity. Given the strong correlation between the presence of ethnic minorities, and the socio-economic status of a neighbourhood (Abascal & Baldassarri, 2015; Bécares, Stafford, Laurence, & Nazroo, 2011; Letki, 2008), we controlled for the level of unemployment in the area.⁶

The descriptive statistics of all variables are presented in Table A1 in the Appendix.

Results

Table 3 presents variance components and the deviance for the empty models, separately for respondents from majority and minority groups. In the case of the model for majorities, 14.3% of the variance in life satisfaction was located at the country level, and 21.4% at the neighbourhood level. In the case of minorities, variance in life satisfaction was more evenly distributed among neighbourhood and country levels, with 15% located at the country level, and 17.7% at the neighbourhood level. In both cases, the proportion of variance attributable to higher levels of observation is substantial, thus warranting the use of a hierarchical model.

Table 3

Variance Components (Standard Errors in Parentheses)

Random-effects parameters	Majority	Minority
Country	.48 (.09)	.51 (.13)
Neighbourhood	.71 (.09)	.60 (.30)
Individuals	2.14 (.07)	2.28 (.21)
N3 (Country)	12	12
N2 (Neighbourhood)	890	497
N1 (Individual)	16198	2454
Deviance	13203.39	1637.07

6) It should be noted that neighbourhood-level analysis of the relationships between neighbourhood disorder, ethnic diversity and unemployment indicated that neither unemployment rate nor diversity were statistically significant predictors of neighbourhood disorder.

Table 4 displays the results of a multilevel regression model predicting life satisfaction, separately for ethnic majority and minority respondents. Models 1 and 3 included measures of neighbourhood disorder and share of own ethnic group, as well as the control variables, for the ethnic majority and minority respondents respectively. As expected in H1, the coefficients of neighbourhood disorder were negative and significant for both majority and minority groups, meaning that people living in disordered neighbourhoods reported significantly lower life satisfaction. The share of one's own ethnic group was not significantly related to life satisfaction either among majority or ethnic minority groups. This means that among the inhabitants of the studied countries, living in neighbourhoods with a higher presence of in-group members on average did not increase their life satisfaction, contrary to our predictions made in H2.

Table 4

Hierarchical Regression of Life Satisfaction on Ethnic In-group Share and Neighbourhood Disorder (Including Control Variables)

Variables	Majority		Minority	
	Model 1	Model 2	Model 3	Model 4
Neighbourhood disorder	-0.61*** (0.15)	0.79 (0.46)	-0.94*** (0.24)	-1.15*** (0.36)
Share of own ethnic group	0.36 (0.43)	3.38*** (0.81)	-0.095 (0.21)	-1.61 (1.56)
Share of own ethnic group*Neighbourhood disorder		-1.60*** (0.44)		0.83 (0.90)
Constant	7.48*** (0.53)	4.82*** (0.83)	7.14*** (0.59)	7.53*** (0.64)
N3 (Country)	12	12	12	12
N2 (Neighbourhood)	877	877	481	481
N1 (Individuals)	15,157	15,157	2,407	2,407
Deviance	12199.11	12196.22	1514.92	1514.51

Note. Unstandardised coefficients (standard errors in parentheses). All models contain controls at the individual (gender, age, level of education, employment/education/pension/disability/housework, type of settlement, religiosity, length of residence in the neighbourhood) and neighbourhood (ethnic diversity, unemployment rate) level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

In Models 2 and 4, we added the interaction term between share of own ethnic group in the neighbourhood and neighbourhood disorder. Its coefficient was significant and negative for majority group respondents, meaning that as the proportion of other majority group members in their neighbourhood increased, the negative effect of neighbourhood disorder became even stronger. The share of own group in this model had a positive and statistically significant effect on life satisfaction, which indicates that in areas with no disorder, the presence of co-ethnics had a positive effect on life satisfaction. Given that interaction terms are difficult to interpret solely on the basis of model coefficients, we

calculated marginal effects and presented them as Figure 1 panel A. The figure shows that at lower levels of in-group share in the neighbourhood (up to around 71%) majority members' life satisfaction was not significantly related to neighbourhood disorder. Above 71% a further increase of share of co-ethnics in the area magnified the negative effect of disorder on life satisfaction, contrary to our expectation from H3, where we posited that the presence of co-ethnics in the neighbourhood would have no moderating effect on disorder among majority respondents.

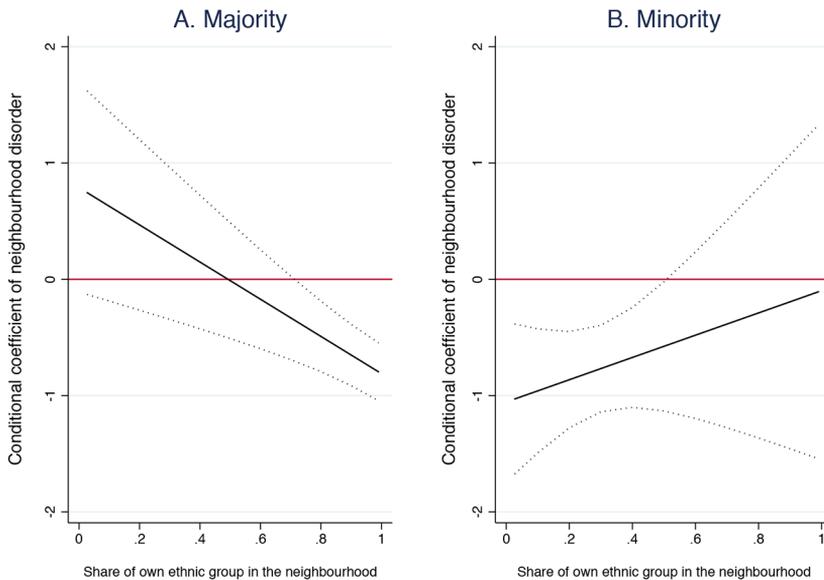


Figure 1. The conditioning effect of ethnic in-group presence in the neighbourhood.

Note. The solid lines represent the conditional coefficient of neighbourhood disorder on life satisfaction at different levels of share of own ethnic group in the neighbourhood. Dashed lines represent 95% confidence intervals.

The same model estimated for minorities yielded different results. The results of Model 4 show that, unlike among the respondents from majority groups, neighbourhood disorder at low levels of co-ethnic presence in the area had a strong negative effect on life satisfaction. The interaction term was not statistically significant, as despite a high coefficient in the right (positive) direction, the standard error is very large. The share of one's own group has a strong and negative coefficient, indicating that in areas with no disorder, the presence of co-ethnics tends to be related with decreased satisfaction. However, as in the case of the interaction term, the standard error is substantial which makes the effect miss the conventional statistical significance level. To examine the effects of the interaction between neighbourhood disorder and in-group share more carefully, we tested marginal

effects, presented in Figure 1 panel B. Our analyses indicated that among minorities, the negative effect of neighbourhood disorder on life satisfaction was significant for inhabitants of areas with a share of co-ethnics of around 59% or less, at which the effect of disorder would lose statistical significance. This implies that minorities' life satisfaction is indeed, as posited in H3, increasingly less affected by disorder as they gradually become the majority in the neighbourhood.

Alternative Analyses

To check the robustness of the results we re-estimated all the models with a different specification, namely using linear regression with robust standard errors clustered at the neighbourhood level and country fixed effects. Neither the results for majority nor minority members were affected by a different model specification. Second, to ensure that our findings for the minorities are not an artifact due to the presence of various ethnic groups with different status and relations with the ethnic majority, we re-estimated the models with fixed effects for all ethnic groups. The results remain substantively unchanged (i.e., the marginal effects are highly similar to the results presented in panel B of Figure 1), even though the standard errors of most effects increased. Finally, to ensure that the results are not driven by the presence of a specific ethnic group, such as Roma, in our sample, we re-estimated Models 3 and 4 without Roma respondents in the analysis. While the standard errors were affected by the decreasing sample size, the analysis of the marginal effects confirmed our earlier findings. That is, ethnic minorities' life satisfaction at low levels of co-ethnics' presence in the neighbourhood was strongly and negatively related to disorder, with this effect gradually becoming weaker as the proportion of co-ethnics increased and losing significance at around 59%.⁷ We believe that these tests confirm that our results are robust and reliable.

In order to ensure that the relative position of ethnic groups did not drive the moderating effect of presence of one's group in the neighbourhood on the relationship between neighbourhood disorder and life satisfaction, we re-estimated Model 4 controlling for the group-level sense of discrimination of one's group. This is an external measure, derived from the ESS, and reflects the proportion of ESS respondents of a given ethnic status who see their group as discriminated against on the basis of cultural, ethnic or religious distinctiveness (for more details on the measure, see Letki & Kukołowicz, 2019). This indicator is only available for 9 countries in our sample and only for some groups in these countries, which reduces our sample by almost 50% (to 1,268 respondents). Nevertheless, the results are very similar to those presented in Model 4: among minorities, there was a moderating effect of the presence of one's own group in the neighbourhood on the negative relationship between disorder and life satisfaction, such that the negative relation-

7) All results are available from the authors on request.

ship between disorder and life satisfaction was not statistically significant at high levels of in-group spatial concentration.

Discussion

In this study, we investigated the associations between neighbourhood disorder, ethnic in-group share, and life satisfaction in 12 Central-Eastern European countries. Following previous research on attitudes and behaviour in the local context, we carried out the analysis separately for ethnic minorities and majorities living in the studied areas. We analysed survey data matched with neighbourhood characteristics, and accounted for both individual and contextual variables.

As expected, neighbourhood disorder, as observed by interviewers, was negatively related to life satisfaction for both majority and minority respondents, over and above individual and neighbourhood characteristics. This is consistent with earlier studies reporting that aversive neighbourhoods function as stressors and have negative consequences for well-being (Parkes et al., 2002; Ross et al., 2000). We contribute to this research by providing data from a large representative sample derived from 897 neighbourhoods across 12 Central-Eastern European countries, a region that has not been studied within this domain of literature. We also contribute by relying on an external measure of neighbourhood disorder inspired by the systematic social observation approach (Sampson & Raudenbush, 1999) instead of customary self-reported measures, which allows the problem of endogeneity of the links between life satisfaction and perceptions of disorder to be overcome. It is important to note that our analyses consider individual and contextual characteristics, which helps to rule out some alternative explanations of our findings. Therefore, although we deal with cross-sectional data, we are able to provide suggestive evidence for the negative effect of neighbourhood disorder on life satisfaction among both majority and minority group members. This relationship is statistically significantly controlling for the length of residence in the neighbourhood and numerous socioeconomic status indicators, thereby partially addressing the problem of selective sorting into neighbourhoods. Nevertheless, longitudinal data that would include measures of life satisfaction over time could offer a more robust test of the direction of the relations that we studied.

Contrary to our predictions, the share of ethnic in-group members in the neighbourhood was on average not significantly associated with life satisfaction, for both majority and minority members. Higher presence of co-ethnics in the neighbourhood thus does not seem to be positively or negatively related to well-being. This finding is difficult to interpret in the context of established theories of group identity formation and social support. However, an investigation of the interaction between the share of ethnic in-group members and neighbourhood disorder revealed that, at least among the majorities, the presence of one's own group in the neighbourhood had a strong positive effect on life

satisfaction in areas with no disorder. This was not the case for minorities, for whom the presence of ethnic in-group members had no significant effect on life satisfaction regardless of the level of neighbourhood disorder.

Therefore, as expected, the pattern of the interaction between disorder and in-group share was different for ethnic majorities and minorities. Among minority members, the negative effect of neighbourhood disorder was significant at lower levels of co-ethnic concentration, but not at its higher levels. This provides suggestive evidence that for ethnic minority members present in the studied neighbourhoods, a higher presence of co-ethnics attenuates the negative effect of disorder on life satisfaction. This result, obtained for inhabitants of different areas in twelve countries, is consistent with the recent work of [Fong and colleagues \(2019\)](#), who showed that social identification buffered the negative relationship between neighbourhood socioeconomic disadvantage and mental health, and that of [Ross and Jang \(2000\)](#), who demonstrated a similar moderating role of social ties with neighbours. Our study suggests that for ethnic minority groups, the mere presence of co-ethnics in the neighbourhood may provide a sense of belonging and social support that serves as a buffer against aversive environments. Nevertheless, this explanation should be tested in future studies, since our dataset did not allow for an examination of the exact psychological mechanism underlying the moderating effect of in-group presence.

By contrast, for ethnic majority members, disorder did not have a negative effect on their life satisfaction at low levels of co-ethnics's presence in the neighbourhood. As the proportion of majority people from the same ethnic background reached around 71%, thus re-emphasising its dominant majority status, the negative effect of disorder became significant and intensified as the share of co-ethnics increased. In other words, at high levels of co-ethnic concentration, a higher presence of ethnic majority members increased the harmful effect of disorder on life satisfaction. Therefore, while for minority members, neighbourhood disorder was less 'problematic' when it was more likely caused by in-group members, for majority members it was the opposite: the higher the share of ethnic in-group members in the neighbourhood, the more disturbing the cues of social disorder.

Although they were unexpected, our findings for the majority group respondents are consistent with the literature on ethnic stereotypes and disorder ([Sampson & Raudenbush, 2004](#); [Vancluysen et al., 2011](#)). As research has shown, disorder is typically associated with the presence of immigrants and ethnic minorities ([Quillian & Pager, 2001, 2010](#)). Therefore, when ethnic majority members experience disorder in their living environment, they may have trouble accepting that it is their in-group members that are causing this disorder, as this can pose a threat to their positive social identity. This finding corresponds with the results of [Jaśkiewicz and Wiwatowska \(2018\)](#), who showed that when residents believed that their neighbours were not responsible for signs of disorder in their neighbourhood, their sense of community was not related to disorder. In a simi-

lar way, and in line with social identity theory (Tajfel & Turner, 1979), people may tend to blame out-group members for negative behaviours, in order to maintain a positive image of their in-group. In a situation when this is not possible because the out-group forms a minority in the neighbourhood, responsibility for disorder among dominant ethnic group members cannot be denied, which can be harmful for psychological well-being. However, this explanation needs to be verified in future studies, for example, by including a measure of collective self-esteem, which may be lowered in reaction to a disordered environment inhabited by dominant status in-group members.

It is also important to emphasise that by dealing with national rather than immigrant minorities we contributed to addressing the problem of causality between ethnicity and socio-economic status. The finding that the presence of ethnic in-group members buffered the effect of disorder on life satisfaction among minority group members but amplified it among the majority group members, indirectly suggests that even when a correlation between ethnicity and socio-economic status is not present, a higher presence of ethnic minority groups may be stereotyped in terms of low status and disorder. All minority groups included in our analysis have preserved distinct identities for centuries, and in a number of countries the relations between them and the majority group have been hostile and discriminating. One possible explanation for this is the long-term state policy being the exogenous determinant of majority-minority relations (Singh & vom Hau, 2016; Wimmer, 2016). Accordingly, we would then expect that the hostility and discriminating attitudes towards the minorities are based on pure cultural distinctiveness, which nevertheless leads to prejudice that is coded in terms of social status. Thus, despite marked historical differences between the inter-ethnic relations in Western Europe and the USA and in post-Communist Eastern Europe, the issues of ethnic identity and socio-economic status are intertwined in a remarkably similar way.

While our analyses present averaged patterns obtained for twelve Central-Eastern European countries, at the same time by definition we do not address potential differences between these studied contexts. This can be seen as a limitation of our study, since the existing mechanisms underlying the relations of our interest may be specific to a given neighbourhood or country. For example, the minority groups across the studied countries differ in some important ways, such as their size and power status within the given country. While some of the performed robustness tests accounted for the potential differences in status and relative position of ethnic groups in our study, we were unable to take into account the discrimination and animosity patterns present among national groups that have coexisted in the same territory for centuries. This is an important caveat, as recent research points to the importance of horizontal inequality and discrimination as the determinants of social cohesion and minorities' life satisfaction (Ray, 2018; van Staveren & Pervaiz, 2017; Verkuyten, 2008). The survey we used did not include boost samples for ethnic minorities, which makes statistical analysis of detailed patterns country-by-country impossible. Future work would benefit from a more focused, context

specific approach to the status of investigated ethnic groups, as well as their relations with their respective majorities.

Despite the above limitations, our study demonstrates that whereas the well-being of residents is reduced by neighbourhood disorder, this effect is conditioned by another contextual feature, namely ethnic in-group presence. The meaning of in-group presence differs, however, depending on whether the in-group constitutes the minority or majority population. While for residents from the minority groups having more co-ethnics in the neighbourhood helps them to cope with an aversive environment, for majority group members, living among more co-ethnics does not provide this support and may even yield opposite outcomes. A protective role of in-group concentration thus cannot simply be assumed. Our analyses show one of many possible indirect ways in which the position and presence of in-group members may influence life satisfaction. We believe that our results may inspire a new line of research focusing on how the effect of context on attitudes and behavior is conditioned by the presence of in-group members.

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Appendix

Table A1

Descriptive Statistics

Variable	Majority respondents					Minority respondents				
	Obs	<i>M</i>	<i>SD</i>	Min	Max	Obs	<i>M</i>	<i>SD</i>	Min	Max
Individual level variables										
female	16,363	0.42	0.49	0	1	2,610	0.42	0.49	0	1
age	16,363	51.87	18.00	15.06	101.60	2,610	51.54	17.54	15.06	95.80
length of residence	16,052	32.66	20.67	0	93.96	2,549	31.40	20.14	0	92.19
education: primary	16,363	0.05	0.22	0	1	2,610	0.07	0.25	0	1
education: secondary	16,363	0.45	0.50	0	1	2,610	0.36	0.48	0	1
education: post-secondary	16,363	0.12	0.32	0	1	2,610	0.17	0.37	0	1
education: degree	16,363	0.17	0.37	0	1	2,610	0.16	0.37	0	1
employed	16,169	0.42	0.49	0	1	2,592	0.38	0.49	0	1
student	16,169	0.05	0.22	0	1	2,592	0.04	0.21	0	1
unemployed	16,169	0.08	0.28	0	1	2,592	0.13	0.33	0	1
permanently ill or disabled	16,169	0.02	0.13	0	1	2,592	0.03	0.17	0	1
retired	16,169	0.34	0.48	0	1	2,592	0.32	0.47	0	1
doing housework	16,169	0.08	0.26	0	1	2,592	0.08	0.28	0	1
religious	15,968	3.43	1.95	1	8	2,544	3.18	1.90	1	8
large city	16,363	0.17	0.37	0	1	2,610	0.23	0.42	0	1
city	16,363	0.20	0.40	0	1	2,610	0.20	0.40	0	1
town	16,363	0.23	0.42	0	1	2,610	0.25	0.43	0	1
rural area	16,363	0.41	0.49	0	1	2,610	0.32	0.47	0	1
Neighbourhood level variables										
disorder	893	1.78	0.36	1	3.18	504	1.78	0.37	1	3.18
ethnic diversity	881	0.19	0.19	0	0.73	500	0.27	0.21	0	.72
unemployment rate	893	11.11	7.16	0	48.64	504	10.81	6.72	0	48.64

Table A2

Sample Sizes and Fieldwork Dates

Bulgaria		Lithuania	
RR:	0.49	RR:	0.51
N1:	1732	N1:	1596
N2:	75	N2:	75
Fieldwork:	Nov 2013 – Feb 2014	Fieldwork:	Nov 2013 – March 2014
Croatia		Moldova	
RR:	0.59	RR:	0.51
N1:	1615	N1:	1879
N2:	75	N2:	75
Fieldwork:	Nov 2013 – March 2014	Fieldwork:	Nov 2013 – Aug 2014
Czech Republic		Romania	
RR:	0.44	RR:	0.47
N1:	1502	N1:	1608
N2:	75	N2:	75
Fieldwork:	Nov 2013 – Feb 2014	Fieldwork:	Nov 2013 – March 2014
Estonia		Serbia	
RR:	0.42	RR:	0.52
N1:	1501	N1:	1596
N2:	75	N2:	75
Fieldwork:	Dec 2013 – July 2014	Fieldwork:	Nov 2013 – Feb 2014
Hungary		Slovakia	
RR:	0.66	RR:	0.41
N1:	1500	N1:	1505
N2:	75	N2:	75
Fieldwork:	Nov 2013 – March 2014	Fieldwork:	Feb 2014 – April 2014
Latvia		Slovenia	
RR:	0.44	RR:	0.52
N1:	1521	N1:	1532
N2:	75	N2:	75
Fieldwork:	Jan 2014 – March 2014	Fieldwork:	Dec 2013 – Feb 2014

Note. Survey sample and fieldwork information for the 12 countries covered in the survey “Public Goods through Private Eyes (PGPE)”. RR = response rate; N1 = individuals; N2 = PSUs.



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