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Tonković, Željka; Cepić, Dražen; Puzek, Ivan

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## Loneliness and Social Networks in Europe: ISSP Data from 13 European Countries

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Željka TONKOVIĆ  <https://orcid.org/0000-0002-5972-9491>

*Department of Sociology, University of Zadar, Croatia*  
*zeljka.tonkovic@unizd.hr*

Dražen CEPIĆ  <https://orcid.org/0000-0003-4544-5778>

*Department of Sociology, University of Zadar, Croatia*  
*dcepic@unizd.hr*

Ivan PUZEK  <https://orcid.org/0000-0001-7545-9578>

*Department of Sociology, University of Zadar, Croatia*  
*ivan.puzek@unizd.hr*

### ABSTRACT

The paper analyses social causes of loneliness in Europe using cross-national data from the 2017 International Social Survey Programme (ISSP) module “Social Networks and Social Resources” from 13 countries categorised as Northern Europe, Continental Europe, and Central and Eastern Europe. The paper aims to examine loneliness with regard to three specific groups of predictors, related to network, sociocultural and sociostructural aspects. The results suggest that sociability patterns and personal networks are the most important predictors of loneliness. While the frequency of contacts with family members and close friends and the overall number of contacts showed significance, loneliness was primarily related to the quality of personal relationships. Considering sociocultural factors, the obtained findings showed that social trust is consistently associated with lower levels of loneliness. Furthermore, people from Continental Europe were, in general, less lonely than North and East Europeans. Age was an important factor here as respondents from younger age groups were lonelier in Nordic countries than in the other two blocs of countries, while older respondents were lonelier in Central and East European countries. Finally, sociostructural indicators in general showed less predictive value compared to sociability patterns and sociocultural variables. However, when it came to socioeconomic exclusion, this aspect showed a stronger connection with loneliness for the individuals from the Nordic group of countries. The findings of this paper contribute to the vibrant field of contemporary scholarship on loneliness with a fresh perspective based on comparing three large blocs of European countries and an integrated approach to various predictors of loneliness.

Key words: loneliness, social networks, cross-national study, interpersonal trust, socioeconomic factors

## INTRODUCTION

Loneliness and social isolation are some of the most salient sociological issues related to the COVID-19 pandemic (Kovacs et al., 2021; Seifert and Hassler, 2020). Efforts undertaken to try to minimise the spread of the virus, which included physical distancing measures and the introduction of quarantines, have unsurprisingly raised a lot of interest among researchers in the consequences of such measures for sociability patterns. However, the new trends related to the current pandemic should not conceal the fact that loneliness has been identified as one of the burning issues of our time, to the extent that it had become common to speak of the “epidemic of loneliness” (Killeen, 1998) long before the actual pandemic brought dramatic changes.

The topic of loneliness has been studied in various areas of research, most extensively with regard to social risks entwined with certain phases in the life course. This concerned primarily old age (Toepoel, 2013; Havens et al., 2004; Savikko et al., 2005; De Koning, Stathi and Richards, 2017; Smith and Victor, 2019) and, to a lesser extent, adolescence (Rokach and Neto, 2000; Yang and Victor, 2011). Furthermore, loneliness has been studied as pertaining to certain social groups, such as migrant ethnic groups (Koehn, Ferrer and Brotman, 2020; Hurtado-de-Mendoza et al., 2014), as a consequence of social exclusion and precarious living conditions. In so doing, the topic has often been studied with regard to its consequences; e.g., the effects of loneliness on health (Bellucci, 2020; Valtorta et al., 2016), and specifically mental health (Schnittker, 2019); addictions (Ok, 2021; Yoder, Virden III and Amin, 2005); or voting behaviour (Rydgren, 2009). However, this research looks into its predictors; loneliness as a dependent, rather than an independent variable.

In an attempt to explore loneliness, we are focused on its causes, and looking at the general population. Furthermore, we are specifically interested in social causes of loneliness, rather than psychological and neurological aspects (Solmi et al., 2020; Silman and Dogan, 2013). Drawing from a typology by de Jong Gierveld, van Tilburg and Dykstra (2006), we examine social and cultural factors of loneliness by grouping them into three distinct types: network factors (number of contacts, composition of contacts, living arrangements, quality of relations), socio-cultural factors (religious affiliation, interpersonal trust, and country of residence), and sociostructural factors (size of community, socioeconomic indicators). This allowed us to measure the impact of various micro- and macro-level causes, rather than simply assuming that micro-level risks are subordinate to the societal factors, or vice versa.

Finally, findings from the literature show considerable between-country heterogeneity. Previous studies (Rapoliené and Aartsen, 2021; Hansen and Slagsvold,

2016) compared elderly men and women in Eastern Europe with their peers in Western and Northern Europe, establishing a higher level of loneliness among the former. While this was found to be mediated primarily by health, partnership status, and socioeconomic disparities, welfare provision and cultural norms were also named among possible causes. The sociocultural aspect across societies was further explored by several studies (Taniguchi and Kaufman, 2021; Barreto et al., 2020; Lykes and Kemmelmeier, 2014; Heu, van Zomeren and Hansen, 2019) which looked into the differences between individualistic cultures as opposed to collectivist cultures. The latter, marked by tighter social networks and higher degrees of interdependence between family and in-group members, were less associated with loneliness than the former, which placed a high value on self-reliance and were associated with loose social networks and chosen relationships.

This paper contributes to the growing (and understudied) field of cross-national research of loneliness by analysing data from the 2017 module of the International Social Survey Programme (ISSP) titled “Social Networks and Social Resources” (Joye, Sapin and Wolf, 2019). We used data from 13 European countries, which we divided into three blocs: Northern Europe (Finland, Iceland, Sweden, Denmark), Continental Europe (Germany, Switzerland, Austria, France) and Central and Eastern Europe (Croatia, Slovenia, Czech Republic, Hungary, Slovak Republic). The blocs are chosen to reflect cross-national sociocultural differences, and are founded upon a diverse set of criteria: shared history, similar level of economic development, religious tradition, which all together translate to common institutional contours of welfare provision.

The argument proceeds as follows. In the next section, we define the main concepts and position our research within the broader theoretical area of research. We explain that our theoretical model is built on three types of loneliness factors: sociability, sociocultural aspect, and sociostructural factors. This is followed by the section on data, variables and methods, where we explain how these separate blocks were sequentially included in the linear regression model. This argument is followed by the analysis, in which we present the results for 13 countries, overall and specifically for each bloc. Finally, in the discussion, we are looking at our results through the prism of existing cross-national attempts to explain loneliness, and we conclude the paper with contributions and limitations.

## THEORETICAL FRAMEWORK

Loneliness has been a frequent topic of sociological analysis. From the early beginnings of the discipline, when it was seen as a distinctive feature of modern life – for instance, in Simmel’s study of the metropolitan crowd (Simmel, 2012)

and post-war classics – such as *The Lonely Crowd* (Riesman, Glazer and Denney, 1961), to prominent contemporary studies of social capital—sociologists have often addressed what appears to be one of the great sources of social anxiety. However, while the key puzzle in many of these works has revolved around the question of whether we are becoming lonelier—the answers ranging from pessimistic visions of “bowling alone” (Putnam, 2000) to C. Fischer’s reminder that we are “still connected” (Fischer, 2011)—this paper explores the social and cultural predictors of loneliness.

De Jong Gierveld et al. divided research on loneliness into three main conceptual approaches (2006). First, some authors stress cognitive factors contributing to loneliness, including descriptive characteristics of social networks (marital and partner status, kin and non-kin relations, size and network composition), character traits (shyness, anxiety, introversion), demographics (gender, health) etc. The second approach refers to sociocultural factors that contribute to loneliness, i.e., social standards. The idea here is that the normative climate and cultural representations shape the expectations and the referencing system which determine whether we feel lonely. Finally, the third approach pertains to sociostructural factors which modulate the risks of loneliness, particularly the socioeconomic characteristics.

The exact boundaries and terminology of the typology, naturally, may be discussed—for instance, even though the authors equate the first category with individual-level research, it is somewhat confusing that some of the listed category properties, such as network properties, transcend individual-level analysis by definition. However, we found the suggested division useful for our research and used it to formulate our model by grouping our research questions into three blocks.

In the first block of questions, we analysed the connection between loneliness and patterns of sociability and social networks. First, this included the question of whether the risk of loneliness is negatively correlated with the number of people with whom the respondent has contact on a typical weekday. If loneliness is defined as “subjective and negative experience, and the outcome of a cognitive evaluation of the match between the quantity and quality of existing relationships and relationship standards” (de Jong Gierveld et al., 2006: 486), it is clear that this question addresses the quantitative dimension of loneliness. While loneliness and social isolation are not synonyms—as the latter concerns primarily the “objective characteristics of a situation”, referring to “the absence of relationships with other people” (de Jong Gierveld et al., 2006: 486)—this question pertains to the connection between the two. Hence the question: to what extent the subjective experience can be explained by the mere absence of social contact?

What if loneliness can be explained by the frequency of contact with close social ties, not general contact with people? We tested that for typical sources of strong

ties: parents, siblings, adult children, other adult family members and close friends. Perhaps quality time with one or two people who are close to us means more than contact with a general group of people? Another form of sociability which we analysed relates to social participation in social, voluntary and political organisations. Feld and Carter coined the concept of “foci of activity”, denoting social, psychological, legal or physical entities around which joint activities are organised (Feld and Carter, 1999: 136). As “foci of activity” have a common effect of bringing a relatively limited “set” of individuals together in repeated interactions in and around focused activities (in our case, charity activities, political campaigning etc.), the idea behind this was to test whether embeddedness in structured social contexts has additional value in reducing the risks of loneliness.

Two more aspects of sociability were examined: living alone and conflict with close ties, such as family, relatives and friends. The connection between living alone and loneliness is well documented (Pinquart and Sörensen, 2003; Hawkey et al., 2020; Beutel et al., 2017), pointing to the fact that relationships with other members of the household, considering their sheer volume and frequency, sometimes cannot be compensated with other sources of sociability. Even though living arrangements are not a network feature in the same way as network density or size, the fact that one lives alone or with someone represents an important feature of sociability—that is why this variable is grouped within this block of loneliness factors. Besides, conflict with close ties also brings a more plausible analysis to the study of loneliness by adding the information on the quality of relationships to the otherwise quantitative metric (number of contacts, frequency of contact etc.). Having in mind that loneliness essentially pertains to subjective experience, this allows us to analyse whether people stuck in bad relationships with their strong ties are in fact lonelier than people with no ties.

The second block of questions concerns the sociocultural factors of loneliness. This was analysed with respect to three elements. First, we analysed the connection between religious affiliation and loneliness. The link between religion and loneliness is well known and can be traced back to classic E. Durkheim’s study of suicide (2002), and the explanation of higher rates of suicide among Protestants due to lower levels of social cohesion in the community. Our analysis differentiates between Catholics, Protestants, atheists and people of other religions. The second sociocultural aspect refers to interpersonal trust and the question of whether there is a connection between the lack thereof and loneliness (for instance, because the expectation that other people cannot be trusted may prevent people from establishing or maintaining social ties?). We have placed this question to the sociocultural block as it pertains to political culture (e.g., in Putnam’s research of civic and political culture). The third question addressed here is whether loneliness is more

widespread in some countries, and less in others. We have tested this by grouping countries into three blocs: Northern Europe, Continental Europe, and Central and Eastern Europe.

The group of Nordic countries, which includes Finland, Iceland, Sweden, and Denmark, is broadly used in cross-national studies. Nordic countries share a common history, similar level of economic development, Lutheran Christianity as the main religion and, for the most part, constitute Esping-Anderson's social-democratic group of the welfare state model (1990).<sup>1</sup> This translates to a strong market economy and culture of individualism combined with strong labour unions and a universalist welfare state. The group of Continental countries, including Germany, Switzerland, Austria, and France, is culturally somewhat more diverse than the first group, with the division into the Protestant North and the Catholic South, as well as the German-speaking and Francophone parts. In Esping-Andersen's tradition, this group of countries for the most part constitutes the conservative or conservative-corporatist welfare state regime. Finally, the third group of countries includes Croatia, Slovenia, the Czech Republic, Hungary, and the Slovak Republic, or what has been colloquially called, the "New Europe" (Cepić, 2019). While this group can be divided into smaller blocs, for instance, the Visegrad countries and the former Yugoslav republics, all of them share the state-socialist past, are predominantly Catholic, and have been for the most part culturally marked by earlier historical epochs (most importantly, being part of the Habsburg Empire).

While the first two sociocultural aspects belong to individual-level explanations, the cross-national aspect aggregates data on the nation-state level, assuming that cultural context may have a higher reach than individual-level properties through social osmosis (e.g., a person's values can be shaped by the religious standards of their community even if they are not religious).

Finally, the third block questions the impact of the sociostructural aspect on loneliness, and in particular the socioeconomic characteristics. The impact of income inequalities on sociability has been established in various aspects; for instance, with regard to the tendency of haves to socialize with haves, and have-nots with have-nots—that is, with regard to class homophily (Cepić and Tonković, 2020). However, here we address the question of whether the have-nots are lonelier in absolute terms, as informal sociability is often embedded in common leisure activities (Allan, 1989). As many social activities require a certain level of income (even the most mundane things, such as going for drinks or sports activities), this

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<sup>1</sup> While the features of the institutionalist welfare state to a large extent pertain to the socio-economic explanatory frame, recent scholarship in political economy has stressed the roots of respective welfare state regimes in religion and culture (Hien, 2017). This is why we used features of the respective social models as criteria for country bloc memberships.

can be an obstacle for maintaining social ties, and therefore can lead to loneliness. Another structural aspect which we analyse is the size of settlement. In the history of sociology, ever since classical authors, such as F. Tönnies (2002), smaller settlements have been associated with cohesive, tight-knit communities, as opposed to alienating metropolitan cities. At the same time, however, larger settlements, in general, offer better social infrastructure for coping with social isolation. It seems that the link to loneliness can go both ways.

While empirical studies of loneliness, according to de Jong Gierveld et al., have been mostly focused on the first type of factors, much less attention has been paid to the latter two streams of research (2006). However, even though this has changed since 2006, as in the past 15 years a number of studies have explored the sociocultural and sociostructural aspects of loneliness (Taniguchi and Kaufman, 2021; Barreto et al., 2020; Lykes and Kemmelmeier, 2014; Heu et al., 2019), the comparison between them has remained understudied. This represents a knowledge gap which we address with our paper. Given that social isolation and loneliness cannot be regarded in isolation from a broader cultural and structural context, it is necessary to observe dyadic and individual-level features from a macro perspective. At the same time, sociability patterns are in many ways a baseline for studying loneliness. In this paper, we are therefore comparing the predictive value of all three analytical domains of loneliness.

## DATA, VARIABLES AND METHODS

### Data

Data used in this analysis are from the ISSP module “Social Networks and Social Resources” (2019). For this analysis, we selected respondents from 13 European countries, which were divided into three groups: Northern Europe (Finland, Iceland, Sweden, Denmark), Central and Eastern Europe (Croatia, Slovenia, Czech Republic, Hungary, Slovak Republic) and Continental Europe (Germany, Switzerland, Austria, France). We also removed all respondents below the age of 25 from the data, as most of them proved to have no valid score on several independent variables. In total, 14,588 respondents were included in the analysis.



Table 1: Characteristics of the sample (% or mean)

	13 European countries	Continental Europe	Northern Europe	Central and Eastern Europe
Gender				
Male	46.6	50.9	55.6	53.6
Female	53.4	49.1	44.4	46.4
Age				
	52.65 (SD = 15.53)	54.27 (SD = 16.14)	52.91 (SD = 15.05)	50.85 (SD = 15.11)
Education				
Primary or less	3.3	3.9	5.2	1.3
Secondary	64.3	62.4	47.6	79
Tertiary	32.4	33.6	47.2	19.7
Size of settlement				
Village	33.8	39	22.6	36.8
Small or middle-sized town	30.0	31.4	30.4	30.1
Big city	36.2	29.7	47	33.1
Working status				
Paid work	59.9	56.8	61.6	61.6
Unemployed and looking for a job	3.5	2.9	2.7	4.8
Retired	28.3	32.1	25.6	26.7
Other	8.3	8.3	10.1	6.9

## Instruments and scales

### Dependent variable

We used three items related to personal loneliness, based on the Short Loneliness Scale (Hughes et al., 2004). Respondents were asked how often they “felt that they lacked companionship”, “felt isolated” and “felt left out” on a five-point scale (from “never” to “very often”). An exploratory factor analysis with varimax rotation was

used, which resulted in one latent dimension, explaining 77.9% of the variance. We constructed the loneliness index (range 3–15,  $M = 4.94$ ,  $SD = 2.50$ , Cronbach alpha = 0.852). A higher score on this index indicates a higher level of loneliness.

### Independent variables

According to our research questions, the independent variables are divided into three blocks.

The first block of variables includes an indicator of social networks and sociability patterns. As an indicator of *personal network size*, we used the item asking about the number of people with whom the respondent has contact on a typical weekday. *Social participation* was measured with three items reflecting participation in various social, voluntary and political domains. Respondents were asked how often in the past 12 months they had taken part in the activities of groups or associations for leisure, sports or culture, of political parties, groups or associations and of charitable or religious organisations that do voluntary work. Respondents were provided with a scale ranging from 1 (“once a week or more”) to 5 (“never”). For the purpose of analysis, all three items were dichotomised into “participation” and “no participation”. To measure the *frequency of contact* with members of respondents’ personal networks, we used five items focusing on the frequency of contact with parents, siblings, adult children, other adult family members and close friends. From these five items, we used two measures: the index of daily contacts with family members (range 0–4,  $M = 0.60$ ,  $SD = 0.80$ ) and daily contact with a best friend as a dummy variable. In order to measure *sociability with friends*, we used the item which asked respondents how often they went out with friends or acquaintances. Respondents were provided with a scale ranging from 1 (“daily”) to 8 (“never”). As an indicator of *conflicts and poor quality of important personal relationships*, an additive index was used, indicating the frequency of strain and conflict with important members of the social network, such as family, relatives and friends. For each of the three items, respondents could answer on a scale from 1 (“never”) to 5 (“very often”). The index was calculated as a sum score, with a range from 3 to 15 ( $M=5.50$ ,  $SD=2.36$ ) and Cronbach’s Alpha was 0.735. As the last indicator in this group of variables, we used a dummy variable indicating *living alone*. This variable was created from the question on the number of people in the household.

The second block of variables, related to the sociocultural factors of loneliness, included three indicators: interpersonal trust, religious affiliation and cross-national comparison. Considering interpersonal trust, two items were included. The first item asked respondents how often they thought that people would try to take advantage of them if they had the chance, and how often they would try to be fair,

while the second one asked whether they thought that people could be trusted or that one could not be too careful in dealing with people. Respondents could choose between four answers, from 1 – “almost all of the time try to take advantage” / “almost all of the time can be trusted” to 4 – “almost all of the time try to be fair” / “cannot be too careful”. Due to the low reliability of the two-item scale (Cronbach’s Alpha = 0.487), we decided to include both items separately. The original measurement of *religious affiliation* or denomination contained a broad range of categories. Therefore, we decided to group less frequent categories together, differentiating between Catholics, Protestants, other religions and no religion. Finally, dummy variables were created for three *blocs of countries*: Nordic Europe, Central and Eastern Europe and Continental Europe.

Our third block of variables, which concerns the sociostructural factors, included the size of community and socioeconomic indicators. According to the ISSP questionnaire, *size of community* was divided into three groups: village, small or middle-sized town and big city. As an indicator of economic capital, a subjective question about the household’s *ability to satisfy needs* (to “make ends meet”) was included in the analysis. Respondents could answer on a scale from 1 (“very difficult”) to 5 (“very easy”). The answers were recoded into three categories. We also included three dummy variables related to the socioeconomic status of respondents: unemployed, retired and other.

Finally, we included the *sociodemographic indicators* of gender, age and education. Gender was coded as 1 – male and 0 – female. In order to capture differences among age groups, respondents were divided into five age groups. A respondent’s educational attainment was measured as the highest completed degree of education, ranging from 1 – “no formal education” to 6 – “upper-level tertiary” (Master, Doctor).

## Analytical strategy

We employed sequential OLS regression analysis, consisting of four separate blocks of independent variables. The first block included sociodemographic variables (age, gender, education level). The second one considered the effects of sociability patterns. The third one looked at the impact of sociocultural variables, including indicators of interpersonal trust, religious affiliation and blocs of countries (for the full model). Finally, the fourth block included indicators of sociostructural variables, namely size of community and socioeconomic indicators. These blocks were then tested in relation to the dependent variable: the loneliness index. Those models have been fitted to the whole sample, and additionally to the three subsamples defined by the cultural blocs of the countries, to disentangle possible interac-

tions and gain insights by comparing the coefficients across the blocs of countries. Data analysis was conducted in R (R Core Team, 2021).

## RESULTS

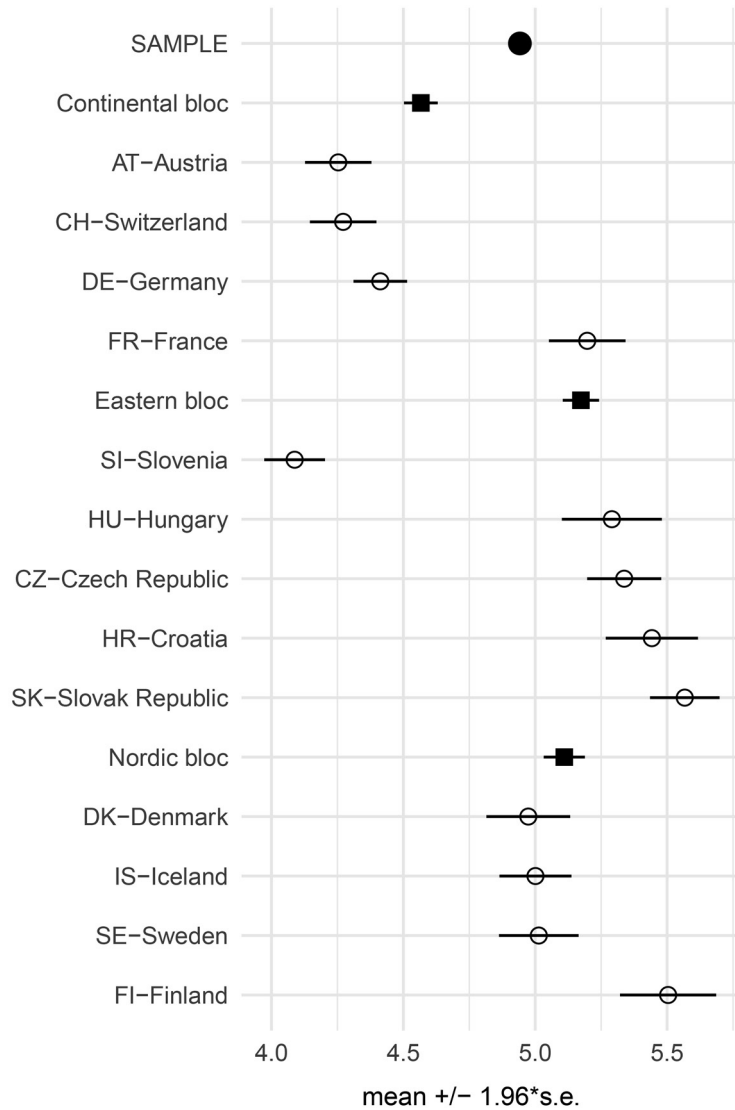
To obtain an overall picture of the distribution of loneliness, we compared mean values across three blocs of European countries and at the country level. As visible in Figure 1, the continental bloc shows a lower value of loneliness ( $M = 4.57$ ) in comparison to the Nordic ( $M = 5.11$ ) and Central and Eastern European group of countries ( $M = 5.17$ ). To ascertain whether these differences are statistically significant, we conducted one-way ANOVA. The obtained results demonstrate that loneliness is not equally distributed across three blocs of countries ( $F = 89.286$ ,  $p < 0.001$ ), while the post-hoc comparisons demonstrate that the continental group of countries show statistically significant lower rates of loneliness in comparison to other two blocs, and there is no difference between the Nordic group of countries and Central and Eastern Europe. Cross-national differences in the prevalence of loneliness are also visible in Figure 1. In particular, among the five countries with the highest rates of loneliness are four countries from Central and Eastern Europe (Slovak Republic, Croatia, Czech Republic and Hungary).

Table 2 presents standardised regression coefficients for each of the predictors. Model 1 demonstrates a weak but significant negative correlation with being male, which remains stable even after adding other predictors. This finding is in line with previous studies which confirmed that women report higher levels of loneliness than men (Pinquart and Sörensen, 2003; Beutel et al., 2017). Younger age groups are at a higher risk of loneliness ( $0.051^{***}$  in the final model). Previous studies have also reported that loneliness decreases with age (Beutel et al., 2017; Barreto et al., 2020) and that young adults (<30 years) report higher loneliness levels (Hawkey et al., 2020). However, according to Rapoliene and Aartsen (2021), older respondents in East European countries report higher levels of loneliness. Considering education level, we found a weak and negative correlation, indicating that more educated individuals tend to feel less lonely. Yet, this predictor loses its significance after adding sociocultural and sociostructural predictors.

While the first block of sociodemographic variables is of low predictive value, after the second block is introduced, the percentage of total variance explained increases from 1.1% to 21.6%. Among this group of indicators, the strongest predictor is the index of conflict in important social relations ( $\beta = .317^{***}$ ). This is in line with previous research which found that loneliness may depend more on the quality of relationships rather than the sheer number of contacts (Akdoğan, 2017). Indeed, loneliness is reported to be related to subjective experience and interpretation,

rather than social isolation (Fischer and Phillips, 1982; Pinqart and Sörensen, 2003; de Jong Gierveld et al., 2006).

Figure 1. Loneliness across 13 European countries



However, this does not mean that network size and frequency of interactions are not associated with loneliness. In fact, the second strongest predictor is living alone ( $\beta = .17^{***}$ ), which is consistent with previous studies (Pinquart and Sørensen, 2003; Hawkley et al., 2020; Beutel et al., 2017). Furthermore, our analysis indicates that the higher the number of people with whom the respondent is in contact on a typical weekday, the lower the loneliness level ( $\beta = -.15^{***}$ ). Frequent socialisation with friends and acquaintances (“going out to eat or drink”) also demonstrates a significant and negative correlation with loneliness ( $\beta = -.107^{***}$ ).

Although the correlation is weak, our analysis shows that individuals who communicate with family members ( $\beta = -.047^{***}$ ) and the closest friend ( $\beta = -.027^{***}$ ) on a daily basis are at a lower risk of loneliness. This is consistent with prior studies which confirmed that having infrequent social interactions puts people at an increased risk of loneliness (Hawkley et al., 2020). Interestingly, considering the indicators of participation, the obtained results suggest that participation in political parties and voluntary/charitable organisations is associated with greater loneliness, while participation in groups for leisure, culture or sports has the opposite effect. However, all three coefficients are weak.

Considering sociocultural indicators, the most important predictor is one indicator of interpersonal trust. In particular, the respondents who expect that other people will try to be fair are less vulnerable to loneliness ( $\beta = -.121^{***}$ ). The second indicator of interpersonal trust, the one which asks respondents whether most people can be trusted, is also associated with loneliness, but the correlation is rather weak ( $\beta = .044^{***}$ ). Furthermore, respondents in Nordic countries tend to report higher scores on the loneliness index compared to those in Continental Europe as a referent group. As for religious affiliation, respondents who are not affiliated with any religious group are more likely to feel lonely than Catholics who are the referent group ( $\beta = .03^{**}$ ). Although Protestants are also at a higher risk of loneliness, this effect is weak and the p value is close to .05.

Finally, as for sociostructural indicators, living in a village shows a weak but negative correlation, while there is no effect when living in a big city is considered. Being unemployed and finding it difficult to make ends meet is also related to loneliness. Both findings are in line with previous research in which lower socioeconomic status and unemployment have been associated with loneliness (Hansen and Slagsvold, 2016; Mullen et al., 2019; Beutel et al., 2017). On the other hand, being retired is not associated with loneliness.

Table 2: Results of sequential (block-wise) regression analysis predicting loneliness across 13 European countries (N=10.790)

Predictor variable	Model 1	Model 2	Model 3	Model 4
Gender: male	-0.051***	-0.034***	-0.04***	-0.031***
<i>Age (ref. 45–54)</i>				
25–34	0.085***	0.066***	0.061***	0.051***
35–44	0.03**	0.027**	0.026*	0.021*
55–64	0.003	-0.019	-0.015	-0.011
65+	0.007	-0.058***	-0.046***	-0.019
Education	-0.062***	-0.02*	-0.009	0.006
Participation: leisure, sports, culture		-0.026**	-0.026**	-0.02*
Participation: political parties		0.077***	0.075***	0.078***
Participation: voluntary organisations		0.028**	0.033***	0.032***
Going out with friends or acquaintances		-0.107***	-0.097***	-0.088***
In contact with how many people daily		-0.15***	-0.144***	-0.124***
Daily contact: family members		-0.047***	-0.044***	-0.043***
Daily contact: close friend		-0.027**	-0.032***	-0.039***
Conflict in social relations		0.317***	0.285***	0.277***
Living alone		0.17***	0.167***	0.159***
<i>Groups of countries (ref. Continental)</i>				
Central and Eastern Europe			-0.004	-0.015
Nordic			0.052***	0.054***
<i>Religious affiliation (ref. Catholics)</i>				
No religion			0.03**	0.03**
Protestant			0.028*	0.029*
Other religion			0.017*	0.013
People try to be fair			-0.121***	-0.114***
People cannot be trusted			0.044***	0.037***
<i>Size of community (ref. small or middle-sized)</i>				
Big city				0.009
Village				-0.028**
<i>Make ends meet (ref. moderate)</i>				
Difficult				0.055***
Easy				-0.049***
<i>Working status (ref. employed)</i>				
Unemployed				0.035***
Retired				-0.001
Other				0.057***
R <sup>2</sup>	0.011	0.183	0.203	0.216
R <sup>2</sup> change		0.171	0.021	0.013

\*p<.05; \*\*p<0.01; \*\*\*p<0.001

The following three tables present standardised regression coefficients for Continental Europe (Table 3), Central and Eastern Europe (Table 4) and Nordic Europe (Table 5). The percentage of total variance explained ranges from 19% for Central and Eastern Europe to 23.9% for Continental and 25.7% for Nordic Europe. What is important to notice is that the second block of independent variables (sociability patterns) has the highest predictive value across all three blocs of countries. This pertains primarily to conflict in important social relations, which is the most robust predictor across all three blocks. However, there are some important differences.

First, the sociodemographic block of variables is of some predictive value only in the Nordic group of countries, in which younger age is related to loneliness ( $\beta=.133^{***}$  in the final model). Secondly, participation is of no predictive value in Continental Europe (Table 3), while in Nordic Europe only participation in leisure, sports and culture is associated with lower loneliness. Interestingly, in Central and Eastern Europe, participation in political parties shows a significant and positive correlation with loneliness ( $\beta=.132^{***}$ ).

Furthermore, considering sociostructural predictors, living in a village shows a weak but negative correlation with loneliness only in the Central and Eastern European bloc, while there is no correlation in the other two subsamples. Being unemployed is related to loneliness in the Continental ( $\beta=.079^{***}$ ) bloc, and to a lesser extent in the Nordic bloc ( $\beta=.045^*$ ), while there is no effect in Central and Eastern Europe.

Finally, individuals from the Nordic and Continental groups of countries who find it difficult to satisfy their needs with monthly income are more vulnerable to loneliness ( $\beta=.097^{***}$ ), while those who find it easy to satisfy their needs feel less lonely ( $\beta=-.047^*$ ). However, this effect is less pronounced in other two blocs.



Table 3: Results of sequential (block-wise) regression analysis predicting loneliness across the Continental bloc of countries (N=3909)

Predictor variable	Model 1	Model 2	Model 3	Model 4
Gender: male	-0.054***	-0.027*	-0.03*	-0.022
<i>Age (ref. 45–54)</i>				
25–34	0.039*	0.034*	0.028	0.02
35–44	0.018	0	-0.001	-0.002
55–64	-0.011	-0.03	-0.031	-0.021
65+	0.01	-0.071***	-0.058**	-0.014
Education	-0.063***	-0.014	0.014	0.026
Participation: leisure, sports, culture		0.001	0.003	0.012
Participation: political parties		0.018	0.024	0.026
Participation: voluntary organisations		-0.017	-0.01	-0.015
Going out with friends or acquaintances		-0.14***	-0.132***	-0.125***
In contact with how many people daily		-0.134***	-0.122***	-0.102***
Daily contact: family members		-0.05***	-0.048***	-0.048***
Daily contact: close friend		-0.015	-0.024	-0.03*
Conflict in social relations		0.341***	0.316***	0.299***
Living alone		0.197***	0.195***	0.186***
<i>Religious affiliation (ref. Catholics)</i>				
No religion			0.019	0.013
Protestant			0.014	0.016
Other religion			0.015	0.002
People try to be fair			-0.104***	-0.097***
People cannot be trusted			0.076***	0.071***
<i>Size of community (ref. small or middle-sized)</i>				
Big city				0.006
Village				-0.015
<i>Make ends meet (ref. moderate)</i>				
Difficult				0.061***
Easy				-0.018
<i>Working status (ref. employed)</i>				
Unemployed				0.079***
Retired				-0.021
Other				0.059***
R <sup>2</sup>	0.008	0.200	0.224	0.239
R <sup>2</sup> change		0.192	0.025	0.015

\*p<.05; \*\*p<0.01; \*\*\*p<0.001

Table 4: Results of sequential (block-wise) regression analysis predicting loneliness across the Central and Eastern European bloc of countries (N=4700)

Predictor variable	Model 1	Model 2	Model 3	Model 4
Gender: male	-0.032*	-0.025	-0.031*	-0.023
<i>Age (ref. 45–54)</i>				
25–34	0.043*	0.03	0.033*	0.033*
35–44	0	0.013	0.02	0.021
55–64	0.024	0.012	0.02	0.018
65+	0.047**	0.012	0.025	0.025
Education	-0.021	-0.024	-0.016	-0.008
Participation: leisure, sports, culture		-0.041**	-0.034*	-0.032*
Participation: political parties		0.158***	0.137***	0.132***
Participation: voluntary organisations		0.074***	0.077***	0.079***
Going out with friends or acquaintances		-0.054***	-0.054***	-0.048***
In contact with how many people daily		-0.141***	-0.141***	-0.131***
Daily contact: family members		-0.042**	-0.03*	-0.027*
Daily contact: close friend		-0.044***	-0.05***	-0.054***
Conflict in social relations		0.287***	0.266***	0.261***
Living alone		0.126***	0.125***	0.124***
<i>Religious affiliation (ref. Catholics)</i>				
No religion			0.024	0.028
Protestant			0.077***	0.073***
Other religion			0.001	0
People try to be fair			-0.115***	-0.112***
People cannot be trusted			0.007	0.006
<i>Size of community (ref. small or middle-sized)</i>				
Big city				-0.002
Village				-0.036*
<i>Make ends meet (ref. moderate)</i>				
Difficult				0.038**
Easy				-0.04**
<i>Working status (ref. employed)</i>				
Unemployed				0.009
Retired				0.01
Other				0.043**
R <sup>2</sup>	0.003	0.165	0.183	0.190
R <sup>2</sup> change		0.163	0.017	0.007

\*p<.05; \*\*p<0.01; \*\*\*p<0.001

Table 5: Results of sequential (block-wise) regression analysis predicting loneliness across the Nordic European bloc of countries (N=2181)

Predictor variable	Model 1	Model 2	Model 3	Model 4
Gender: male	-0.055***	-0.061***	-0.077***	-0.076***
<i>Age (ref. 45–54)</i>				
25–34	0.187***	0.152***	0.134***	0.133***
35–44	0.074***	0.077***	0.055**	0.04
55–64	-0.008	-0.041*	-0.039	-0.032
65+	-0.03	-0.108***	-0.1***	-0.031
Education	-0.085***	-0.029	-0.019	0
Participation: leisure, sports, culture		-0.049**	-0.048**	-0.055**
Participation: political parties		0.018	0.018	0.017
Participation: voluntary organisations		0.003	0.008	0.004
Going out with friends or acquaintances		-0.114***	-0.117***	-0.113***
In contact with how many people daily		-0.161***	-0.145***	-0.099***
Daily contact: family members		-0.051**	-0.052**	-0.056**
Daily contact: close friend		-0.011	-0.005	-0.005
Conflict in social relations		0.28***	0.242***	0.233***
Living alone		0.203***	0.197***	0.178***
<i>Religious affiliation (ref. Protestant)</i>				
Catholic			-0.004	-0.012
No religion			0.037*	0.043*
Other religion			0.026	0.03
People try to be fair			-0.125***	-0.12***
People cannot be trusted			0.047**	0.029
<i>Size of community (ref. small or middle-sized)</i>				
Big city				0.02
Village				-0.027
<i>Make ends meet (ref. moderate)</i>				
Difficult				0.097***
Easy				-0.047*
<i>Working status (ref. employed)</i>				
Unemployed				0.045*
Retired				-0.018
Other				0.062**
R <sup>2</sup>	0.043	0.211	0.233	0.257
R <sup>2</sup> change		0.168	0.022	0.024

\*p<.05; \*\*p<0.01; \*\*\*p<0.001

## DISCUSSION

Following the conceptual framework developed by de Jong Gierveld et al. (2006), this paper aimed to examine the relationship between loneliness and three specific groups of predictors. By focusing on the role of network, sociocultural and sociostructural aspects of loneliness across 13 European countries, this paper corroborates and extends previous cross-national research (Yang and Victor, 2011; Barreto et al., 2020).

The following conclusions can be drawn from this study. First, sociability patterns and personal networks are the most important predictors of loneliness. Our analysis shows that social resources which can be accessed through our immediate personal networks outweigh the importance of broader cultural context and one's structural position when it comes to risks of loneliness.

To begin with, this concerns the nature of social ties. Socialising with close ties (friends, family) on an everyday basis demonstrates a significant and negative correlation with loneliness. However, the strongest predictor in the regression model pertained to the index of conflict in important social relations. This indicates that to reduce the risk of loneliness, it is not enough to be surrounded by close ties as loneliness is primarily related to the quality of personal relationships. This suggests that loneliness is more than an objective absence of contact with other people, which is in line with prior work on social and emotional aspects of loneliness (Weiss, 1973; de Jong Gierveld et al., 2006).

This does not mean that social contact with weak ties does not matter at all. According to our data, loneliness is still higher among individuals with a lower frequency of interactions and smaller networks of contacts, indicating that the quantity of social interactions has a protective effect, as has been confirmed in previous research (Hawkley et al., 2020). However, the aspect of sociability which surprisingly does not reduce loneliness pertains to participation in voluntary associations. While participation in groups for leisure, culture or sports shows only a weak negative connection with loneliness, participation in political parties and voluntary/charitable organisations fosters loneliness. This is a surprising result which contradicts the expectations that participation in organisational "foci of activity" will have additional value in reducing the risks of loneliness. The reasons why "bowling together" does not have a stronger negative connection to loneliness needs to be studied further.

As for the first block of variables, living alone was the second most important predictor, even after controlling for other factors. Living alone appears as one of the well-established loneliness predictors in various national contexts (Pinquart and Sörensen, 2003; Beller and Wagner, 2018; Hawkley et al., 2020; Beutel et al., 2017). However, the relationship between loneliness and living alone is a complex

one and is related to the effects of gender (Beutel et al., 2017), age (Hawkley et al., 2020) and network size. From the social network perspective, previous research suggests that persons living alone are more likely to have smaller networks compared to those living with a partner (de Jong Gierveld et al., 2006). At the same time, other studies suggest that the opposite might be the case and that individuals living alone have to maintain a broader support network outside the household (Tillema, Dijst and Schwanen, 2010; van der Gaag, Snijders and Flap, 2008). Thus, future studies should further investigate the relationship between living alone and loneliness, while controlling for the effects of other factors.

The fact that sociability patterns and personal networks are the most important predictors of loneliness does not mean that loneliness is not associated with the sociocultural context. This is easy to understand: loneliness as a subjective experience of social isolation (“feeling that one lacks companionship”, “feeling of being left out”) cannot be regarded independently from values, identities, customs, and other facets of the broad and all-encompassing concept that is culture. This was confirmed for interpersonal trust, taken as an indicator of political culture. The respondents who expected that other people would take advantage of them and that most people could not be trusted were more vulnerable to loneliness. The direction of this correlation is not clear: can it be assumed that negative expectations may prevent people from establishing or maintaining social ties with others? Or do lonely people tend to have a grim view of others? In an important recent contribution, Rapoliene and Aartsen (2021) noted that loneliness among older adults in post-totalitarian countries could be linked to social disengagement caused by the lack of trust in other people. Despite the sample differences, it should be noted that we found that another aspect of trust, the view that “people try to be fair”, was consistently associated with lower levels of loneliness.

Sociocultural impact on loneliness was also examined via cross-national analysis of 13 European countries, which showed that people from Continental Europe are in general less lonely than both North and East Europeans. However, cross-national differences are more salient when age differences are taken into account, as loneliness is not evenly distributed across age groups in different contexts. While in Nordic countries respondents in the age groups of 25–34 and 35–44 are lonelier than other age groups, this is not the case in the other two blocs. In fact, older respondents tend to be lonelier in East European countries, which is in line with findings from Rapoliene and Aartsen (2021).

How to explain these differences? Does it have to do with kinship models and the differing role of extended family in enhancing the social fabric? Or the institutional factors (welfare services, social transfers) are more prominent in reducing loneliness among the elderly than achieving inter-generational cohesion via family

roles? This has been studied in the scholarship on family salience and norms of solidarity, which confirmed that sociability patterns vary significantly across different welfare state regimes (Ganjour and Widmer, 2016). Even though both of these factors are essentially cultural and value features, they pertain to different types of micro-macro mechanisms and need to be distinguished.

Finally, cross-national differences matter even for the third block of variables. When it comes to socioeconomic exclusion, individuals from the Nordic group of countries who find it difficult to satisfy their needs with monthly income are more vulnerable to loneliness. At the same time, this effect is less pronounced in the other two blocs. Therefore, while loneliness is a class issue in some countries, it is less so in others. Why is that so? Is the reason to be found in varying monetary costs of socialising? This may be related to various reasons, such as the accessibility of social infrastructure, cultural customs. If maintaining social ties in Northern Europe requires (in relative terms) more financial means than socialising in Eastern Europe, this may explain why people in an economically disadvantaged position are prone to feel more isolated. This would have an obvious impact on class homophily, as establishing cross-class ties crucially depends on the existence of freely accessible vehicles of socialisation (Cepić and Tonković, 2020). Or, alternatively, the reason may be found in the domain of identity and “national cultural repertoires” (Lamont and Thévenot, 2000), which provide (and limit) cultural resources for drawing symbolic boundaries and building feelings of self-worth.

## CONTRIBUTION AND LIMITATIONS

Our main conclusions can be summarised as follows. First, the most important predictors of loneliness pertained to sociability patterns and personal networks, especially when it came to the quality of personal relationships and lack of conflict. However, the number of contacts still matters, as loneliness was higher among individuals with a lower frequency of interactions and smaller networks. The aspect of sociability, which surprisingly did not reduce loneliness, pertained to the participation in voluntary associations. As for the sociocultural aspect, we found that social trust was consistently associated with lower levels of loneliness. Furthermore, people from Continental Europe were, in general, less lonely than North and East Europeans, although age was an important factor here as respondents from younger age groups were lonelier in Nordic countries than in the other two blocs of countries, while older respondents were lonelier in East European countries. Finally, when it came to socioeconomic exclusion, this aspect showed a stronger connection with loneliness for the individuals from the Nordic group of countries.

As for the limitations of the study, our research encompassed a relatively small number of countries, with some notable absences, such as Spain, Italy and the UK. On one hand, this limitation reduced possible analytical strategies to fitting separate linear models to blocs of countries, and allowed no proper use of multilevel analyses. Secondly, the Anglosaxon and Southern European cultural blocs were not properly represented and thus could not be included in the comparison among the analysed cultural types. Finally, as is usually the case with large cross-national surveys, some important indicators were not measured ideally for the purposes of our conceptual framework. Notably, size of settlement was recorded as three levels only, while it could have been more discriminative and more significant if it had been elicited in a more nuanced way. Similarly, social status was represented as a subjective measure of “making ends meet” – an objective measure combining income level and a measure of wealth would have been more precise and potentially more useful.

There are two main ways in which this paper contributes to the vibrant field of contemporary scholarship on loneliness. Firstly, our paper analyses various predictors of loneliness through a comparative perspective. Rather than exploring only social network roots of loneliness, or analysing separately its sociocultural and sociostructural aspects, we have observed these aspects as separate blocks of independent variables. Secondly, this analysis has been conducted using a large cross-national sample. However, unlike other cross-national studies, which mostly pertained to the differences between individualistic and collectivistic societies, or Eastern and Western Europe, our analysis is built on three large blocs of European countries which are founded upon a diverse set of criteria, such as shared history, a similar level of economic development, religious tradition, which all together translate to common institutionalist contours of the welfare provision.

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## CONFLICT OF INTEREST

Authors declare no conflict of interest.

## ETHICAL APPROVAL

Not applicable [secondary analysis of publicly available data].

## DATA ACCESS AND TRANSPARENCY

Data available from the GESIS data archive:

ISSP (2019). *International Social Survey Programme: Social Networks and Social Resources - ISSP 2017*. Cologne: GESIS Data Archive. ZA6980 Data file Version 2.0.0. <https://doi.org/10.4232/1.13322>

Analytic procedures in R available from the GitHub repository:

Puzek I (2021). Data analysis - Loneliness and Social Networks in Europe: ISSP Data from 13 European Countries. GitHub Repository. [https://github.com/ipuzek/loneliness\\_RzS](https://github.com/ipuzek/loneliness_RzS)

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## Usamljenost i društvene mreže u Europi: rezultati ISSP istraživanja za 13 europskih država

Željka TONKOVIĆ  <https://orcid.org/0000-0002-5972-9491>

*Odjel za sociologiju, Sveučilište u Zadru, Hrvatska  
zeljka.tonkovic@unizd.hr*

Dražen CEPIĆ  <https://orcid.org/0000-0003-4544-5778>

*Odjel za sociologiju, Sveučilište u Zadru, Hrvatska  
dcepic@unizd.hr*

Ivan PUZEK  <https://orcid.org/0000-0001-7545-9578>

*Odjel za sociologiju, Sveučilište u Zadru, Hrvatska  
ivan.puzek@unizd.hr*

### SAŽETAK

Članak analizira društvene uzroke usamljenosti u Europi, koristeći podatke iz International Social Survey Programme (ISSP) modula iz 2017. godine "Društvene mreže i društveni resursi". Analizirani su podatci 13 europskih država, podijeljenih u sjevernu Europu, kontinentalnu Europu te srednju i istočnu Europu. Svrha je ovog rada ispitati usamljenost u odnosu na tri specifične skupine prediktora koje se odnose na društvene mreže, sociokulturne i sociostrukturne aspekte. Prema dobivenim rezultatima, obrasci socijabilnosti i personalnih mreža najvažniji su prediktor usamljenosti. Iako su se učestalost kontakata s članovima obitelji i bliskim prijateljima, kao i ukupan broj društvenih kontakata, pokazali značajnima, usamljenost je ponajprije povezana s kvalitetom osobnih veza. Kad je riječ o sociokulturnim čimbenicima, dobiveni rezultati pokazuju da je interpersonalno povjerenje konzistentno povezano s nižom razinom usamljenosti. Nadalje, ispitanici iz kontinentalne Europe u prosjeku su manje usamljeni u odnosu na ispitanike iz sjeverne i istočne Europe. Dob se pritom pokazala važnim čimbenikom s obzirom na to da su mlađi ispitanici usamljeniji u nordijskim zemljama u odnosu na ispitanike iz ostalih dviju skupina država, dok su stariji ispitanici usamljeniji u zemljama srednje i istočne Europe. Naposljetku, sociostrukturni indikatori pokazali su manju prediktivnu valjanost u usporedbi s obrascima socijabilnosti i sociokulturnim varijablama. Pritom se povezanost socioekonomske isključenosti i usamljenosti pokazala značajnijom za ispitanike iz nordijskih država u odnosu na ostale ispitanike. Ti nalazi pridonose bogatom polju suvremenih istraživanja usamljenosti novom perspektivom zasnovanom na komparativnom pristupu koji uspoređuje tri velike skupine europskih zemalja i integrira različite prediktore usamljenosti.

**Ključne riječi:** usamljenost, društvene mreže, međunarodno istraživanje, interpersonalno povjerenje, socioekonomski čimbenici

