# Class-based network segregation, Economic Inequality and Redistributive Preferences across societies

#### Julio Iturra-Sanhueza

Bremen International Graduate School of Social Sciences \*

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#### **Abstract**

Rising economic inequality has increased attention to the link between class relations and redistributive preferences in contemporary societies. However, economic inequality unevenly affects class relations and their influence on support for redistribution across societies. While those in the upper and middle classes reinforce their privileged access to resources and diverse networks, the working class has been disproportionately affected by social exclusion as inequality rises. Consequently, inequality consolidates segregated lifeworlds as it increases the divide between the lives and experiences of the different social classes. Meeting people from diverse class positions can help individuals become more aware of other people's lifestyles and worldviews. Homogeneous upper-class networks may reduce empathy and solidarity towards those in need, resulting in decreased support for redistribution. Conversely, segregated lower-class social networks can increase marginalization and reinforce redistribution support. This study explores the relationship between class-based network segregation and redistributive preferences, employing crossnational data from 31,694 individuals in 31 societies. The main findings suggest that social class conditions the association of network homogeneity on redistributive preferences, where working-class homogeneity drives stronger redistributive preferences, while greater upper-class homogeneity decreases support for redistribution. In addition, the conditional influence of network segregation weakens in unequal societies, especially for the upper classes. Implications for the study of class relations and political attitudes are discussed.

**Keywords**: social networks, segregation, social class, income inequality, redistributive preferences

Word count: 6523

<sup>\*</sup>jiturra@uni-bremen.de

### 1 Introduction

During the past decades, cross-national studies on redistributive preferences and social class have predominantly focused on individuals and households (Lindh and McCall, 2020). In contrast, less attention has been paid to the role of social networks on redistributive preferences. Sociologists have demonstrated that individuals tend to form segregated social networks according to social class (McPherson et al., 2001; Otero et al., 2022). Additionally, attitudes toward economic inequality can be affected by class segregation, as it implies distance from other social classes' economic conditions, lifestyles, and worldviews (Lee, 2023; Lindh et al., 2021; Paskov and Weisstanner, 2022). Therefore, focusing on social ties can improve the understanding of the relationship between social class and redistributive preferences, as it broadens the scrutiny of class relations in terms of internalization of shared norms, class identity formation, and collective solidarity. (Goldthorpe, 1982; Svallfors, 2006). In this discussion, the first part of this study examines the micro-level relationship between class-based network segregation and redistributive preferences. Subsequently, I focus on how cross-national differences in income inequality can moderate the relation of network segregation and support for redistribution.

While previous research has predominantly examined the impact of social class through an individualist lens, more attention has recently been paid to the role of social ties in class relations. This omission is especially surprising since social classes are rooted in social relations of production, which makes them inherently relational in their economic foundations and the power dynamics involved in distributive struggles (Wright, 1989). Moreover, the normative basis of class relations introduces the relevance of dimensions of solidarity and reciprocity, which are argued to provide the moral foundation for legitimacy and popular support for welfare schemes (Mau, 2003). Thus, beyond the influence of individual class positions, recent efforts have highlighted that, while the class positions of network ties affect redistributive preferences, segregation in homogeneous class-based social settings can make attitudes even more pronounced (Otero et al., 2022).

As network segregation can widen the class divide in redistributive preferences, little is known about how income inequality may affect the association between class-based network segregation and support for redistribution. On the one hand, studies on the class-attitude link suggest that income inequality is crucial for understanding how class relations are reflected in

redistributive demands, as it represents the current state of distributive class struggle in contemporary capitalist societies (Curtis and Andersen, 2015; Edlund and Lindh, 2015). A consistent finding in this literature is that the upper classes tend to be more supportive of redistribution in contexts of high inequality, while the already high redistributive demands of the working class remain stable regardless of inequality levels (Dimick et al., 2017; Sachweh and Sthamer, 2019). On the other hand, income inequality has implications for social participation and network composition. Indeed, inequality reinforces stratified access to social activities and widens the distance between classes, resulting in a higher diversity of networks and activities in the upper classes and more marginalization of the lower classes (Lancee and Van de Werfhorst, 2012; Otero et al., 2023; Pichler and Wallace, 2007). However, current efforts to examine the impact of income inequality have focused primarily on social networks or support for redistribution. Thus, a key question that remains unanswered is the extent to which higher income inequality moderates the relationship between social class-based network segregation and redistributive preferences.

To the best of my knowledge, no research has comparatively studied the role of economic inequality in the relationship between class-based network segregation and redistributive preferences. Therefore, this study aims to answer two key questions:

- (1) How does class-based network segregation affect redistributive preferences?
- (2) To what extent does economic inequality moderate the relationship between class-based network segregation and redistributive preferences?

In this study, I used a sample of 31,694 individuals from 31 countries from the International Social Survey Program (ISSP) 2017. This dataset provides unprecedented cross-national comparative data on social networks, social class, and attitudes toward redistribution.

# 2 Theoretical views on class, social networks, and redistributive preferences

### 2.1 Class divide in redistributive preferences

Over the past decades, the study of political attitudes in industrialized societies has consistently demonstrated the relevance of social class as a driver of public opinion (Lindh and McCall,

2020, p. 421). In this view, social class not only represents individuals' labor market relations but also their economic interests and moral perspectives on the role of the market and the state in the distribution and redistribution of resources (Svallfors, 2006). Here, redistributive preferences are understood as the support for policies and mechanisms aimed at reducing economic inequality through the redistribution of wealth and resources (McCall and Kenworthy, 2009). These preferences encompass views on taxation, welfare programs, public services, and other government interventions designed to transfer resources from wealthier to less wealthy individuals or groups in society (García-Sánchez et al., 2022).

Class-based explanations of redistributive preferences have primarily focused on the individual or household level but are not exclusively limited to these contexts. It has been argued that redistributive preferences can be explained through labor market situations, which encompass access to economic resources and risk exposure (Meltzer and Richard, 1981; Rehm, 2009). Additionally, while material interests may dominate in situations of scarcity, value-driven motivations become a significant explanatory factor for redistributive preferences under conditions of greater certainty and are weaker under material precariousness (Kulin and Svallfors, 2013; Maldonado et al., 2019). Other approaches suggest that the substantial time workers spend on their jobs allows social relations in the workplace to imprint normative views that ultimately shape political opinions (Oesch, 2006). For example, the continuous and diverse social interactions inherent in interpersonal services can foster empathy and reinforce egalitarian values (Kitschelt and Rehm, 2014). In contrast, vertical monitoring in managerial occupations and the emphasis on autonomy in self-employed roles tend to strengthen self-interested and conservative political views (Oesch and Rennwald, 2018).

Empirically, the current understanding of class divides in redistributive preferences is extensive (Brooks and Svallfors, 2010; Curtis and Andersen, 2015; Langsæther and Evans, 2020; Lindh, 2015). Nevertheless, considering class-based network ties highlights the relevance of the class situation, as it encompasses economic interests and life chances that drive communal action beyond individuals (Weber, 2011, pp. 57–59). Hence, considering the structure of social ties allows one to look more comprehensively into how class relations structure redistributive preferences.

#### 2.2 Class relations and social networks

Class relations can also be comprehended as the structure of social ties between classes as a characteristic of the social structure, represented as networks formed by different social classes (Blau, 1977). Empirically, homophily in social relations is a consistent finding in the social network literature (McPherson et al., 2001). This means that friendship and family ties tend to be homogeneous concerning social status and demographic characteristics, while distant ties bridge individuals to different social groups and contribute to network diversity (Diprete et al., 2011; Lazarsfeld and Merton, 1954). Besides, socialization preferences indeed play a role in the formation of segregated networks (Homans, 1951; Visser and Mirabile, 2004). However, the similarity of attitudes in segregated networks results more from the social differentiation that structures class ties than from individual preferences (Feld, 1981).

There are two approaches in the study of class relations from a network perspective. On the one hand, network diversity is defined as the degree of connectedness to dissimilar occupations, which represents vertical access to resource diversity embedded in social networks (Lin and Dumin, 1986). However, diversity is defined as the variability of different ties within the network without necessarily providing a reference position to describe network similarity. On the other hand, network segregation is the absence of cross-class connections and represents how similar network ties are in reference to the individual. This perspective is conceptually closer to homophily as it is anchored in individual class positions and has been empirically addressed through network homogeneity (Otero et al., 2021).

How does social class stratify social networks? Empirically, studies on network diversity reveal that higher civic engagement in formal organizations increases the likelihood of the upper-class forming connections with diverse individuals, in contrast to the more homogeneous participation observed among the working class (Pichler and Wallace, 2009). Similar patterns are observed in the composition of social ties, where the upper and intermediate classes maintain increasingly diverse and prestigious social environments compared to the working class (Carrascosa, 2023; Cepić and Tonković, 2020). In contrast, studies on network segregation suggest that property-based boundaries are less permeable than authority-based ones. For example, Wright and Cho (1992) suggest that since class interests widen the social distance between proprietors and manual workers, the intermediate position of supervisors and their higher contact frequency with manual workers makes the formation of friendship ties more likely. Similarly,

Otero et al. (2021) found that the intermediate class exhibits greater permeability compared to the more homogeneous networks of the working class, suggesting that their limited life chances and lower capacity for social engagement ultimately result in segregation. Conversely, the upper class is more homogeneous because it tends to self-select, a practice that ultimately seeks to reproduce its privileged positions (Otero et al., 2021).

#### 2.3 Network segregation and attitudes toward redistribution

Besides individualistic class-based mechanisms in redistributive preferences, the argument that network ties have implications for attitude formation is not novel. In particular, two approaches have discussed the role of social relations on redistributive preferences: reference groups and class-based networks.

The first approach states that perceptions about economic inequality rooted in social comparison processes with reference groups could explain the formation of redistributive preferences (Condon and Wichowsky, 2020). This hypothesis can be traced to the studies on class images and perceived class conflicts (M. D. R. Evans et al., 1992; Kelley and Evans, 1995). The argument posits that people form their beliefs through family, friends, and coworkers' experiences instead of the whole society, which is described as an availability heuristic that systematically biases inferences about inequality based on the homophily of these reference groups (M. D. R. Evans et al., 1992, p. 467). Therefore, inferences about the social world are linked to the degree of segregation in the immediate social environment of a person, which influences the intensity and character of the information that ultimately shapes inequality perceptions (Mijs and Roe, 2021). Accordingly, experience sharing in conversations with socioeconomically diverse networks has been proven to contribute to the accuracy of the images of income and wealth inequalities compared with people in more segregated networks (Summers et al., 2022). Nevertheless, I argue that this body of research has been mainly focused on the cognitive dimension of preference formation through inequality perceptions rather than straightforwardly addressing the claimed influence of network segregation on redistributive preferences (Cansunar, 2021; García-Castro et al., 2022).

The second approach suggests that social networks provide a comprehensive picture of the class relations that contribute to group identity formation and internalization of social norms (Kalmijn and Kraaykamp, 2007). Specifically, it has been argued that redistributive preferences

are influenced not only by individuals' social class but also by the class positions of their network ties (Paskov and Weisstanner, 2022). Thus, social influence processes can either align or divide opinions depending on the class positions of contacts and the level of network segregation (Lindh et al., 2021). These arguments reflect the notion that classes are characterized as collectivities with varying degrees of cohesion and solidarity, comprising asymmetric status-based interactions related to material resources, cultural practices, and political preferences (Morris and Scott, 1996). Following Sachweh (2012), social integration can be impeded in societies with few opportunities for contact between different social classes, creating an "empathy gulf" that hinders individuals from understanding others' lifestyles amid rising inequality. Consequently, segregated interactions may lead individuals to perceive the lives of different classes as more distant and undermine feelings of social integration (Sachweh, 2012). Thus, segregation can potentially diminish social cohesion as it exacerbates perceptions of others as strangers which in turn reduces empathy and solidarity (Otero et al., 2022).

How do network ties affect redistributive preferences? The class position of surrounding family members, friends, and acquaintances affects support for redistribution, as these ties function as socialization agents whose impact can be amplified in segregated social networks. In principle, political attitudes are connected to class interests and norms as they are socialized in the family of origin during childhood and early adulthood. For instance, Lee (2023) shows that individuals with network ties to the upper class through parental connections tend to support redistribution and progressive taxation less than those from working-class family backgrounds. Moreover, since households share risk based on the class position of their members, redistributive preferences are shaped not only by family background but also by the class positions of partners. For example, Paskov and Weisstanner (2022) indicates that working-class ties bolster redistributive preferences, whereas ties with the upper class decrease them, with the effects becoming more pronounced when the class positions of individuals, partners, and parents form a more homogeneous network. Similarly, Lindh et al. (2021) found that friendship and acquaintanceship ties to the managerial class are associated with lower redistributive preferences compared to ties with the sociocultural and working classes. Hence, this suggests that individuals tend to adjust their attitudes based on the class position of their contacts (Lindh et al., 2021).

In summary, as homogeneity refers to the overall degree of segregation without distin-

guishing between class positions I anticipate a weak direct association between network homogeneity and redistributive preferences. Conversely, I hypothesize that the association of network homogeneity with redistributive preferences is conditional on social class as homogeneous social networks should reinforce attitude similarity (*segregation hypothesis*). Specifically, I propose that greater network segregation in the lower classes is associated with higher redistributive preferences, whereas greater segregation in the upper classes is related to lower redistributive preferences. Therefore, the first hypothesis is as follows:

H1: The greater the network segregation in the lower (upper) classes, the higher (lower) the redistributive preferences.

# 2.4 Economic inequality as context for class relations and redistributive preferences

Studies on economic inequality, social class, and redistributive preferences indicate that social classes react differently to rising economic inequality. Theoretically, political economists have suggested that high-income individuals are far from monolithic in their redistributive preferences, arguing that their concerns about the harmful *consequences* of economic inequality (e.g., crime) ultimately motivate altruistic support for redistribution (Dimick et al., 2017, 2018; Rueda and Stegmueller, 2016). Conversely, the moral economy literature in sociology has argued that the differences among the affluent can be explained as a matter of distributive justice evaluations about the *procedures* for resource allocation (Liebig and Sauer, 2016).

Empirically, it has been shown that affluent groups are more responsive as they perceive the overall opportunity structure and social mobility chances are affected by rising inequality (Sachweh and Sthamer, 2019). Likewise, higher perceived inequality of opportunity among the upper classes can motivate support for redistribution as a matter of justice in the conditions for getting ahead (Kim and Lee, 2018). In contrast, low-income individuals perceive ascribed characteristics as more important in constraining the opportunity structure, regardless of current income inequality (Sachweh and Sthamer, 2019). In a similar perspective, Edlund and Lindh (2015) argue that in unequal societies with residual welfare states, social class has a poor political meaning, making distributive conflicts weakly institutionalized around traditional working-class organizations (e.g., unions). Thus, stronger support for state-organized redistribution among the upper classes can also be explained as they are often more aware of

the incentives and societal consequences of income inequality (Curtis and Andersen, 2015; Svallfors, 2006).

How does income inequality affect social networks? As income inequality implies stronger barriers to establishing trustworthy social connections, this also has consequences on the structure of class relations. Neckerman and Torche (2007, p. 344) suggest that experiencing marginalization is deeply associated with diminished chances for participating openly in social life, which can be exacerbated in contexts of greater inequality. Also, societies with higher income inequality can erode social relations as they exhibit reduced social trust that operates as the basis for mutual understanding and feelings of solidarity (Kragten and Rözer, 2017). Likewise, in contexts of lower income inequality and encompassing welfare states, higher levels of civic and social participation increase generalized trust and reduce social conflict (Uslaner and Brown, 2005). In a similar vein, Yamamura (2012) showed that redistributive preferences rise as community-level participation in social activities increases. Moreover, high-income citizens in these communities are specifically more likely to support collective solidarity through government redistribution.

Empirically, cross-national studies show that already-stratified access to social activities and diverse networks is further reinforced in unequal societies. For instance, Letki and Mierina (2015) show that extensive networks in unequal societies are more common among low-income individuals who rely more on close ties for social support than high-income individuals. Additionally, Pichler and Wallace (2009) demonstrated that class differences in participation in civic and family networks are exacerbated in more unequal societies. Likewise, Lancee and Van de Werfhorst (2012) found that income-based stratification in civic participation becomes more pronounced as inequality increases. Also, Otero et al. (2023) found that economic inequality enhances stratified access to network diversity, suggesting that it amplifies the interdependence among cultural, economic, and social capital. Thus, the upper classes can navigate diverse social settings while preserving their distinctive position, whereas the lower classes often remain marginalized and segregated due to the choices of others (Otero et al., 2021, p. 24).

To summarize, I expect that income inequality weakens the interaction between network homogeneity and social class. Specifically, I hypothesize that the conditional relationship between network homogeneity and social class (*segregation hypothesis*) will be less pronounced in contexts of higher income inequality (*mitigation hypothesis*). Given the above considera-

tions, the second hypothesis reads as follows:

H2: The greater the income inequality, the weaker the conditional association of network segregation by social class on redistributive preferences.

### 3 Methodology

#### **3.1** Data

The primary data source for this study is the "Social Networks and Social Resources" module of the International Social Survey Program (ISSP) (ISSP Research Group, 2019). The ISSP provides a nationally representative probability sample of the adult population in each participating country without substitution. Each country administers a carefully adapted questionnaire to ensure the cross-cultural validity of the data and enable meaningful comparisons between countries. The questionnaire includes sections on social networks, attitudes toward economic inequality, and demographic and socioeconomic background characteristics. The complete sample comprises 47,027 observations across 32 countries. However, after reviewing the required information and applying listwise case deletion, the final sample used in the analyses consists of 31,694 observations from 31 countries <sup>1</sup>.

#### 3.2 Variables

#### **Dependent variable**

I use two indicators to measure redistributive preferences. The first indicator corresponds to support for government redistribution and it is measured by the item: "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes." The second indicator is egalitarian preferences and it is measured by the item: "For a society to be fair, differences in people's standard of living should be small." Both indicators use a five-point Likert scale with the following categories: 'Strongly agree' (1), 'Agree' (2), 'Neither agree nor disagree'(3), 'Disagree' (4), and 'Strongly disagree'(5). Following Svallfors (2013), I reverse-coded, averaged and normalized the indicators in a 0 to 100 index, where higher values reflect stronger redistributive preferences.

#### Independent variables - individual level

To measure social class, I employ the Erikson-Goldthorpe-Portocarrero (EGP) class scheme (Erikson and Goldthorpe, 1992). The EGP scheme is one of the most consistent and validated measures for social class positions in comparative research and has demonstrated its validity in both industrialized and late-industrialized societies (Barozet et al., 2021; G. Evans and Graaf, 2013). Therefore, information about occupations, self-employment status, and the number of employees is used to classify respondents into six class positions. Following previous research, a simplified version of the EGP class scheme that collapses three classes is employed (Edlund, 2003; Sosnaud et al., 2013). Specifically, this version distinguishes among the Service Class (higher and lower managerial and professionals), Intermediate Class (routine nonmanual workers and self-employed), and Working Class (manual supervisors, skilled and unskilled manual workers) (see Table A3 in the Appendix).

I employed the position generator as the basis for the class-based network homogeneity measure. This instrument has been widely used in social capital studies and follows an egocentered approach where is assumed that social ties to different hierarchical positions in the social structure provide access to social resources (van der Gaag et al., 2008). Here, a list of ten occupations is displayed and declared as a "Family or relative," "Close friend", "Someone else I know," or "No one." The first three categories are binary coded as "Knows" (1) and the rest as "Does not know" (0). Then, the sum of all occupations known represents the total number of ties per respondent.

Subsequently, following Otero et al. (2023) I classify occupations into three status positions that resemble Goldthorpe's class positions based on the International Socio-Economic Index of Occupational Status (ISEI) (Ganzeboom, 2010). The classification is as follows: lawyer, executive of a large firm, and human resource manager are categorized as *higher* positions (ISEI range: 68-85); school teacher, police officer, and nurse are classified as *medium* positions (ISEI range: 48-63); and car mechanic, bus driver, hairdresser, and home or office cleaner are considered *lower* positions (ISEI range: 17-38) (see Table A2 in the Appendix).

Given the above, I adopted established procedures in the literature for measuring homogeneity in ego-centered networks. For example, Völker (2022) computes gender and educational network homogeneity by calculating the proportion of similar ties based on both respondent and network tie characteristics. Similarly, Otero et al. (2022) employed a comparable

method by classifying occupations from the position generator into three class positions to compute the proportion of similar ties based on social class, thereby measuring class-based network homogeneity. In this research, I adopt the latter approach.

Therefore, I calculate the number of ingroup ties according to the respondents' class position and divide it by the total number of known occupations to obtain a measure of network homogeneity. This measure represents the proportion of similar social ties within the personal network, where a value of zero indicates complete *heterogeneity* (i.e., all ties are different), and a value of one indicates complete *homogeneity* (i.e., all ties are similar). Substantively, higher values reflect a greater social distance from other social classes in society.

A set of control variables are considered in the estimations. First, the number of social ties is included to ensure that the association between network homogeneity and redistributive preferences is independent of network size. Second, socioeconomic characteristics are incorporated into the models, as they represent the current social status through income, education, and labor market status (Häusermann et al., 2015; Kitschelt and Rehm, 2014). Third, gender, age, and marital status are included in all models as sociodemographic characteristics to control for the potential influence of life course events and gendered effects (VanHeuvelen and Copas, 2018; Waitkus and Minkus, 2021).

#### **Independent variables - country level**

To measure economic inequality comparatively, I use the Gini index (post-taxes and transfers) from the World Income Inequality Dataset (WID) (Alvaredo et al., 2022). Additionally, I incorporate two contextual variables as controls in the multilevel regression. First, employing Gross Domestic Product (GDP) in constant 2017 USD (PPP) ensures that economic inequality estimates remain consistent regardless of economic conditions (UNU-WIDER, 2023). Second, following Edlund and Lindh (2015), I include a measure of the welfare state that conceptually captures both its overall size and redistributive capacity based on taxation and spending levels. This approach provides a more accurate representation of the welfare state's impact by incorporating a broader range of services and reflecting the actual outcomes of welfare policies. Empirically, I compute a normalized indicator on a scale from 0 to 100, which combines (i) tax revenue as a percentage of GDP (ILO, 2022), (ii) welfare generosity as total governmental spending as a share of GDP (ILO, 2022), and (iii) the current level of redistribution (Solt,

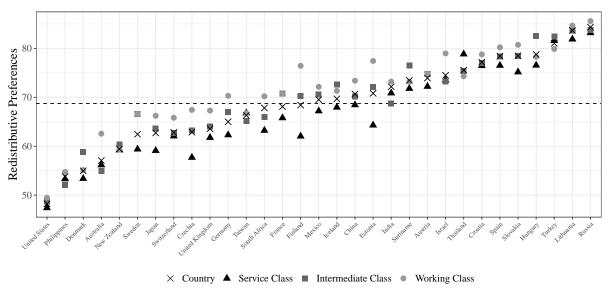
2020).

#### 3.3 Methods

I employ multilevel linear regression models for accounting by the hierarchical structure of the data given that individuals are nested within countries. The analysis begins by estimating a null model with a random intercept to reflect this nested structure. This initial model assesses the intraclass correlation, revealing that 13.5% of the variance in redistributive preferences can be attributed to differences between countries. Subsequently, micro-level models are estimated to examine the association between network homogeneity and social class to test Hypothesis 1.2. Following this, macro-level models are estimated by incorporating random intercepts and random slopes for network homogeneity and social class. This model tests Hypothesis 2 by estimating a three-way cross-level interaction to determine whether income inequality moderates the interaction between network homogeneity and social class. In the latter models, individual-level variables are group-mean centered (CWC) to mitigate collinearity issues between lower-and higher-level predictors and to avoid spurious cross-level interaction coefficients (Aguinis et al., 2013). Additionally, all country-level factors are standardized (z-scores) to facilitate comparability in the estimations (Hox, 2010). All the models are estimated employing the 1me4 package in R (Bates et al., 2015). <sup>3</sup>

# 4 Results

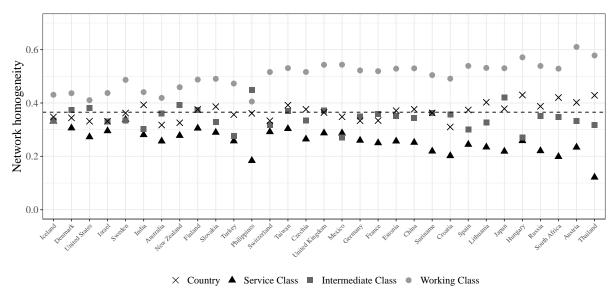
# 4.1 Descriptive cross-country comparison on class, network segregation, and redistributive preferences



Source: International Social Survey 2017; weighted descriptive statistics; figure report country averages in redistributive preferences by social class

Figure 1: Cross-country differences in redistributive preferences by social class

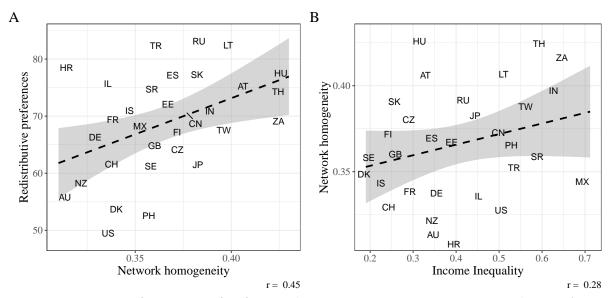
Figure 1 depicts the differences in redistributive preferences across countries and social classes. As expected, the working class shows higher redistributive preferences compared to the intermediate and service classes in most societies. Notably, there are also some differences between the two extreme cases. For instance, the working class exhibits similar redistributive preferences compared to the intermediate class in the United States, although both classes have higher preferences than the service class. Conversely, the general trend of stronger preferences among the working class persists in Russia, but the preferences of the intermediate class are much closer to the service class.



Source: International Social Survey 2017; weighted descriptive statistics; figure report country averages in network homogeneity by social class

Figure 2: Cross-country differences in network homogeneity by social class

Regarding network segregation, Figure 2 shows that between-country variation in network homogeneity is relatively low, whereas class differences are quite distinguishable. On the one hand, a general pattern is that the working class demonstrates high network homogeneity in most countries. On the other hand, the service class generally exhibits less segregation compared to the intermediate and working classes. In addition, homogeneity in the intermediate class tends to be close to the average of each country between the lower and upper classes. Despite that in some societies these differences do not show the same escalated distribution of homogeneity by social class, the general pattern holds true.



Source: International Social Survey 2017; figure report country level pearson correlation; the line is the fitted values; CI at 95%

Figure 3: Relationship between income Inequality, network homogeneity and redistributive preferences

Regarding the macro-level relationships, Figure 3 depicts the correlation between network homogeneity, redistributive preferences, and income inequality, which is our main societal characteristic of interest. Panel A shows a medium positive association between network homogeneity and redistributive preferences (r = 0.45). Consistent with the previously described distribution, higher levels of network homogeneity are driven by the highly segregated networks of the working classes. Thus, in countries where network homogeneity is high, this is likely to reflect greater social segregation among the working classes, which in turn drives higher redistributive preferences. Panel B illustrates a positive but relatively weak association between income inequality and network homogeneity (r = 0.28), suggesting that in more unequal countries, class-based network homogeneity is also higher. Additionally, the differences in network homogeneity between the working class and the service class increase in countries with higher income inequality (r = 0.30; see Figure A1 in the Appendix). Therefore, income inequality not only increases overall network homogeneity but also widens social distance between social classes.

#### 4.2 The segregation hypothesis on redistributive preferences

The multilevel analysis results are shown in Table 1. On the one hand, I expected that network homogeneity has a weak direct association with redistributive preferences as it reveals only

Table 1: Multilevel models for network homogeneity and redistributive preferences

	Model 1	Model 2	Model 3	Model 4
Class-based network homogeneity	2.82 (0.54)***	1.43 (0.55)**	-0.66(0.60)	$-7.45(1.11)^{***}$
Network size		$-0.32 (0.05)^{***}$	$-0.30 (0.05)^{***}$	$-0.25 (0.05)^{***}$
Social Class (Ref.= Service Class)				
Intermediate Class			$1.54 (0.33)^{***}$	-0.82(0.60)
Working Class			$3.18 (0.37)^{***}$	-0.21(0.63)
Homogeneity x Social Class				
Homogeneity*Intermediate Class				8.74 (1.64)***
Homogeneity*Working Class				$10.35 (1.45)^{***}$
Controls	No	Yes	Yes	Yes
BIC	289891.64	289409.95	289358.32	289319.54
Num. obs.	31694	31694	31694	31694
Num. groups	31	31	31	31
Var: Country (Intercept)	77.98	80.39	78.27	77.07
Var: Residual	493.00	483.94	482.86	482.07

Note: Models include sampling weights. Standard errors in parentheses. \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05;  $\cdot p < 0.1$ 

the overall segregation without distinction between classes. In this matter, Model 1 integrates network homogeneity and as it is previously noted in the macro associations, individuals with more homogeneous networks tend to exhibit stronger redistributive preferences. Then, this association is robust to network size, sociodemographic characteristics, and socioeconomic status in Model 2. However, after including individual social class in Model 3, the association between homogeneity and redistributive preferences loses its strength. Regarding this, I expected that the inclusion of class suppresses the association of network homogeneity as it is anchored in class position. Despite this, the focus of this study is not on the *direct* association of network homogeneity but I hypothesized the association of homogeneity, and redistributive preferences is conditional to social class.

Thus, the interaction terms of network homogeneity and social class in Model 4 show that compared to the service class, homogeneity increases redistributive preferences in the working and intermediate classes. To illustrate this result further, Figure 4 depicts that the increasing redistributive preferences in homogenous working and intermediate class networks are quite mild, where the differences in redistributive preferences go from 69.8 to 72.8 and from 69.4 to 70.47, respectively. In contrast, the decreasing redistributive preferences in homogeneous services class networks are more pronounced, changing from 70 when homogeneity is at its lowest point to 62.8 in fully homogeneous networks. Altogether, these results provide evidence in favor of the segregation hypothesis (H1), where the class divide in redistributive preferences becomes stronger for individuals with more homogeneous social networks.

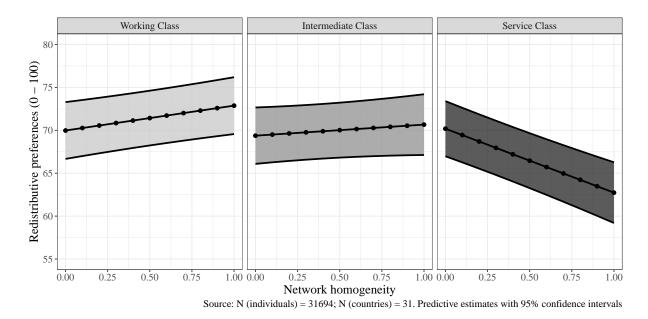


Figure 4: Interaction of network homogeneity and social class on redistributive preferences

# 4.3 The mitigation hypothesis on network segregation and redistributive preferences

Table 2: Multilevel models for income inequality, network homogeneity and redistributive preferences

	Model 1	Model 2	Model 3	Model 4
Class-based network homogeneity (CWC)	-0.79(1.05)	-0.79(1.05)	-0.83(1.05)	$-6.29 (1.12)^{***}$
Social Class (Ref.= Service Class)				
Intermediate Class	$1.53 (0.51)^{**}$	$1.53 (0.51)^{**}$	1.53 (0.51)**	$1.97 (0.47)^{***}$
Working Class	$3.25 (0.76)^{***}$	$3.23 (0.76)^{***}$	3.23 (0.76)***	$3.07(0.69)^{***}$
Macro-level factors				
Income inequality (Gini index)	0.73(1.46)	-2.52(1.96)	2.12(3.05)	4.78(3.20)
GDP/capita		$-4.36(2.05)^*$	$-4.97 (1.93)^*$	$-4.71 (1.96)^*$
Size of the welfare state			6.91 (2.74)*	$6.19 (2.79)^*$
Homogeneity x Social Class				
Homogeneity*Intermediate Class				$7.65 (1.64)^{***}$
Homogeneity*Working Class				10.05 (1.49)***
Homogeneity x Income Inequality				$6.50 (1.13)^{***}$
Homogeneity x Social Class x Income Inequality				
Homogeneity*Intermediate Class*Income Inequality				$-8.81 (1.67)^{***}$
Homogeneity*Working Class*Income Inequality				$-8.78 (1.47)^{***}$
Controls	Yes	Yes	Yes	Yes
BIC	289374.39	289377.58	289379.85	289355.90
Num. obs.	31694	31694	31694	31694
Num. groups	31	31	31	31
Var: Country (Intercept)	84.92	79.63	87.78	76.22
Var: Country Homogeneity	20.24	20.59	20.63	0.18
Var: Country Intermediate Class	4.48	4.50	4.41	2.61
Var: Country Working Class	13.35	13.38	13.43	9.69
Cov: Country (Intercept), Homogeneity	11.79	12.04	16.34	3.67
Cov: Country (Intercept), Intermediate Class	-3.56	-6.21	-12.51	-6.57
Cov: Country (Intercept), Working Class	-13.27	-15.15	-21.49	-14.22
Cov: Country Homogeneity, Intermediate Class	-5.64	-5.56	-5.60	-0.32
Cov: Country Homogeneity, Working Class	-7.78	-7.85	-7.83	-0.68
Cov: Country Intermediate Class, Working Class	7.22	7.22	7.19	4.18
Var: Residual	480.42	480.41	480.42	479.67

Note: Models include sampling weights and individual level controls centered within cluster (group mean). Standard errors in parentheses. \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05;  $\cdot p < 0.1$ 

Table 2 presents the results of the multilevel models for income inequality. In the first place, Model 1 shows that there are no substantial differences in redistributive preferences between societies with different levels of income inequality. Subsequently, it can be seen in Model 2 that in societies with higher economic prosperity, redistributive preferences are lower regardless of the differences in income inequality between countries. At the same time, Model 3 indicates that in countries with more encompassing welfare states, redistributive preferences are higher, independently of income inequality and economic prosperity. More simply, higher redistributive preferences are observed in countries with more generous welfare states.

Finally, Model 4 incorporates a three-way interaction to determine whether the conditional association of network homogeneity to social class on redistributive preferences is moderated by income inequality. At the micro level, the findings for the segregation hypothesis remain robust. At the macro level, the three-way interaction suggests that higher economic inequal-

ity weakens the interaction of network homogeneity and social class. To better illustrate this result, Figure 5 depicts how the relationship between network homogeneity and social class is gradually mitigated as income inequality increases. In this regard, the left panel in Figure 5 illustrates that under conditions of lower income inequality, the conditional association of network homogeneity and social class on redistributive preferences is more pronounced than in the center and left panels that respectively represent contexts of middle and higher income inequality.

When taking a closer look, the differences in redistributive preferences between the working and service classes are smaller when network homogeneity is low, regardless of income inequality. Besides, higher network homogeneity is associated with larger class differences in redistributive preferences when inequality is low but progressively becomes smaller as income inequality increases. These results resonate with previous studies that have argued that the upper classes are more sensitive to income inequality, whereas the working class shows relatively stable attitudes regardless of the contextual levels of income inequality. Here, the results jointly suggest that network segregation matters in contexts of low and middle economic inequality but loses relevance in contexts of high inequality. Overall, the results presented above support the claims of the *mitigation* hypothesis (H2), where the wider class divide in redistributive preferences in homogeneous class-based networks weakens as income inequality increases.

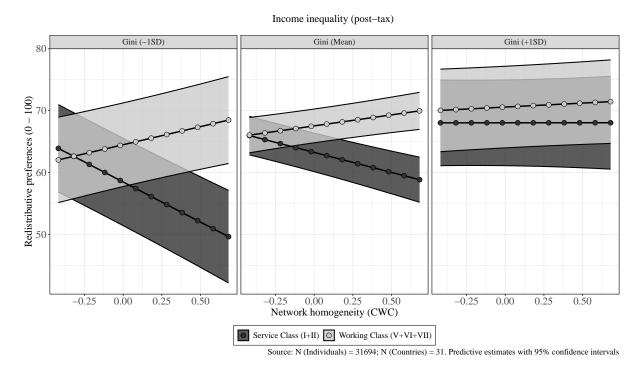


Figure 5: Three-way interaction of network homogeneity, social class and income inequality on redistributive preferences

#### 5 Discussion and conclusion

This research examines how class-based network segregation is associated with redistributive preferences and how income inequality mitigates this relationship from a cross-national perspective. (Lindh et al., 2021; Paskov and Weisstanner, 2022). Despite the claimed detrimental direct association of network segregation on attachment to society (Otero et al., 2022), my first finding suggests that network segregation is rather conditional to social class in the case of redistributive preferences than directly detrimental. Here, I evidenced that higher network homogeneity in the working class increases redistributive preferences, while homogeneous networks in the service class reduce support for redistribution.

In theory, my first hypothesis was that the class divide in redistributive preferences should consider individual class positions and the structure of social networks as sources of preference formation. Hence, my finding supports the claims that social influence and particularly segregation in interpersonal networks strengthen class differences in redistributive preferences (Lee, 2023; Lindh et al., 2021). Also, these results support the idea that low cross-class connections can reduce social integration and solidarity as they limit awareness about the lives of other classes (Blau, 1977; Otero et al., 2022). Furthermore, the 'empathy gulf' is evident in how the

service class is less willing to act against inequality as a collective commitment when they are highly segregated in homogeneous upper-class environments, in contrast to the increasing redistributive pressures of the marginalized working class (Otero and Mendoza, 2023; Sachweh, 2012).

Besides the micro-level findings, my second hypothesis was that economic inequality moderates the conditional association of network homogeneity by social class and redistributive preferences. The results from the multilevel models indicate that income inequality *mitigates* this relationship. In other words, the role of network segregation observed in the interaction of homogeneity and class is less pronounced in highly unequal societies. Particularly, the most notable differences in redistributive preferences are observed in homogeneous service class networks. Comparatively, preferences in working class homogeneous networks are relatively unaffected by inequality.

Theoretically, I understand economic inequality establishes the field for class relations and conflict that are consequently crystallized in attitudes toward redistribution (Edlund and Lindh, 2015). Also, I conceive class relations as networks of social connections between social classes (Blau, 1977). In this approach, social influence is linked to redistributive preferences as it represents the driving social force that makes class interests and values more salient as segregation increases (Lindh et al., 2021). However, I evidenced that this prevails in societies with low and middle levels of income inequality. Hence, I interpret the observed weaker interaction between class and homogeneity in unequal countries in two non-exclusive ways. First, social networks become more stratified as inequality increases, increasing the cross-class contacts and lowering network homogeneity in the upper class. Second, an alternative explanation is that class homogeneity can reinforce the class divide in contexts where social classes have a stronger political meaning reflected in wider class differences in redistributive preferences. Thus, as class relations become segregated, so do redistributive preferences. However, I evidenced that unequal societies have weaker class differences mainly because of the higher redistributive preferences in the upper classes. Therefore, the consequences of segregated class relations on redistributive preferences become mild as the class divide in political attitudes also loses strength in unequal societies.

The contribution of this study can be summarized as follows. First, I demonstrate that class-based network segregation can reinforce the previously documented class divide in redis-

tributive preferences. Unlike previous studies focusing on cross-class contacts, the attention to network homogeneity allows us to observe how different social classes react to inequality in more segregated contexts in societies with different levels of income inequality. Second, the inclusion of diverse national contexts provided the opportunity to scrutinize the role of income inequality as a relevant contextual factor that mitigates the association between network segregation and redistributive preferences. This comparison is relevant because it allows us to observe how resource inequality also provides a context for class relations which, in turn, has an expression in their attitudes towards redistribution.

However, this study has certain limitations. On the side of the dependent variable, a twoitem index comprises a rough proxy for redistributive preferences compared to more detailed
questions on tax or welfare policies. Additionally, the position generator employed is limited
in accurately representing a class scheme, particularly in the self-employment and authority dimensions. Thus, recognizing these measurement limitations, the results should be interpreted
cautiously. Finally, causality is also a limitation when employing cross-sectional data. Theoretically, contact opportunities between classes and sociability preferences jointly drive network
composition. Therefore, I recognize that the endogenous nature of class positions, network
structure, and attitudes imply difficulties regarding causal claims.

Future research should include more fined distinctions in measuring attitudes by including established questions on attitudes toward specific welfare policies or willingness to pay taxes as redistributive measures. Additionally, class-based social networks can be better assessed by incorporating other aspects of the market situation of network ties, such as self-employment status or workplace authority. Finally, longitudinal analyses can contribute to disentangling the relationship between class, networks, and political attitudes.

# **Notes**

<sup>1</sup>Slovenia is excluded from the study because the measure of support for government redistribution, specifically "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes," was not available in the dataset.

<sup>2</sup>Supplementary analyses employing alternative income inequality measures show that the results are robust when using the Inter-decile ratio (D9/D1) and the Top 10/Bottom 50 ratio. Additionally, I classified countries into low, middle-low, middle-high, and high-income inequality groups based on quintiles according to the Gini index. Hence, I used country-fixed effects regressions to control for the cross-country differences and observed and unobserved societal characteristics. The results are consistent with the multilevel estimations.

<sup>3</sup>I employed the Restricted Maximum Likelihood (REML) method because it adjusts the estimation of standard errors for small sample sizes and provides better estimates of variance components in the context of cross-national data (Bryan and Jenkins, 2016).

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# A Appendix

Table A1: Multilevel models for network homogeneity and redistributive preferences

	Model 1	Model 2	Model 3	Model 4			
Class-based network homogeneity	2.82***	1.43**	-0.66	-7.45***			
	(0.54)	(0.55)	(0.60)	(1.11)			
Network size		-0.32***	-0.30***	-0.25***			
		(0.05)	(0.05)	(0.05)			
Female (Ref. $=$ Male)		1.94***	2.23***	2.18***			
		(0.25)	(0.26)	(0.26)			
Age		$0.07^{***}$	0.08***	0.08***			
		(0.01)	(0.01)	(0.01)			
Year of Education		-0.23***	$-0.12^{***}$	-0.09**			
		(0.03)	(0.04)	(0.04)			
Household Income (Ref.= Tertile I)							
Income (T2)		-2.29***	-2.11***	-2.06***			
		(0.36)	(0.36)	(0.36)			
Income (T3)		-4.95***	-4.51***	-4.30***			
, ,		(0.36)	(0.37)	(0.37)			
Income (No information)		$-4.11^{***}$	-3.88***	-3.76***			
· · · · · · · · · · · · · · · · · · ·		(0.39)	(0.39)	(0.39)			
Not in paid work (Ref. = In paid work)		-0.13	-0.21	-0.21			
		(0.31)	(0.31)	(0.31)			
Has partner (Ref.= No partner)		-1.15****	-1.06****	-1.04****			
-		(0.26)	(0.26)	(0.26)			
Social Class (Ref.= Service Class)							
Intermediate Class			1.54***	-0.82			
			(0.33)	(0.60)			
Working Class			3.18***	-0.21			
			(0.37)	(0.63)			
Homogeneity x Social Class			(0.01)	(0.00)			
Homogeneity*Intermediate Class				8.74***			
Tromogeneity intermediate class				(1.64)			
Homogeneity*Working Class				10.35***			
Tromogeneity Working Class				(1.45)			
Controls	No	Yes	Yes	Yes			
BIC	289891.64	289409.95	289358.32	289319.54			
Num. obs.	31694	31694	31694	31694			
Num. groups	31	31	31	31			
Var: Country (Intercept)	77.98	80.39	78.27	77.07			
Var: Residual	493.00	483.94	482.86	482.07			
Note: Standard errors in parentheses. *** $p < 0.001$ ; ** $p < 0.01$ ; * $p < 0.05$ ; $p < 0.1$							

Note: Standard errors in parentheses. \*\*\* p < 0.001; \*\* p < 0.01; \* p < 0.05;  $\cdot p < 0.1$ 

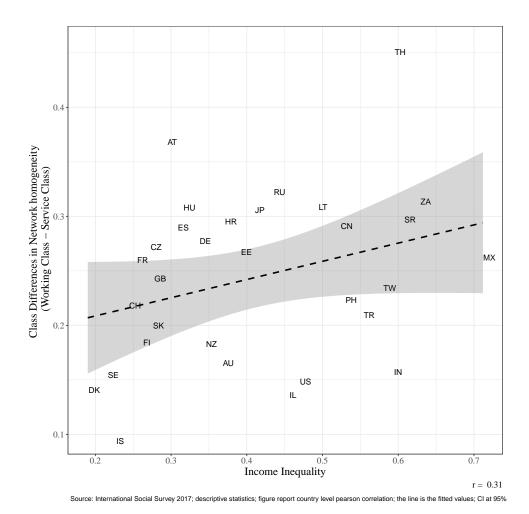


Figure A1: Relationship between income inequality and class differences in network homogeneity

Table A2: ISEI scores assigned to occupations included in the position generator instrument

Occupation	ISEI	%
Higher-status positions		
Lawyer	85	45.9
Executive of large firm	70	46.8
Human resource manager	68	50.6
Medium-status positions		
School teacher	63	73.0
Police officer	54	57.0
Nurse	48	70.7
Lower-status positions		
Car mechanic	38	58.3
Bus/lory driver	36	71.3
Hairdresser/barber	32	56.1
Home or office cleaner	17	66.7

*Note:* N = 31,694

Table A4: Values per country for the macro-social variables

Country	N	Network Homogeneity	Income Inequality (Gini Index)	GDP/capita in \$1000	Size of the Welfare State
Croatia (HR)	859	0.310	0.37	27.15	75.38
France (FR)	996	0.320	0.27	44.58	98.10
Australia (AU)	940	0.320	0.37	48.40	53.51
New Zealand (NZ)	768	0.321	0.36	42.29	53.62
United States (US)	1,051	0.331	0.49	60.11	46.38
Israel (IL)	1,018	0.332	0.47	39.12	52.37
Switzerland (CH)	960	0.333	0.26	69.10	42.97
Germany (DE)	1,362	0.336	0.34	53.07	78.61
Denmark (DK)	722	0.345	0.19	55.36	93.82
Iceland (IS)	1,012	0.348	0.24	55.64	84.19
Mexico (MX)	676	0.348	0.71	19.72	19.20
Philippines (PH)	1,019	0.356	0.55	8.12	4.70
Turkey (TR)	827	0.357	0.55	27.91	37.40
Suriname (SR)	519	0.358	0.61	18.28	10.97
Sweden (SE)	903	0.362	0.22	51.95	85.22
United Kingdom (GB)	1,338	0.363	0.28	46.37	62.65
Estonia (EE)	814	0.372	0.41	33.82	58.39
Finland (FI)	827	0.373	0.26	47.57	100.00
India (IN)	840	0.374	0.61	6.18	15.84
Czechia (CZ)	1,149	0.377	0.27	38.82	65.07
Spain (ES)	1,381	0.378	0.33	39.53	64.31
Japan (JP)	902	0.378	0.43	41.51	52.75
Slovakia (SK)	1,053	0.380	0.27	30.06	64.10
China (CN)	2,385	0.382	0.52	14.24	33.92
Russia (RU)	1,174	0.385	0.43	25.93	46.15
Austria (AT)	1,083	0.385	0.31	54.17	86.83
Taiwan (TW)	1,610	0.394	0.58	47.57	0.00
Lithuania (LT)	721	0.400	0.49	33.76	47.43
South Africa (ZA)	1,426	0.414	0.63	13.86	29.68
Hungary (HU)	844	0.427	0.33	29.50	80.67
Thailand (TH)	515	0.429	0.61	17.42	10.14

*Note:* N = 31,694; Source: ISSP 2017, WID, WIID and ILO. Variables in original scale

Table A3: Level of aggregation of social class

EGP-6	N	%	EGP-3	N	%
Upper Service	4,832	15.2			_
Lower Service	8,533	26.9	Service	13,365	42.2
Routine nonmanual	5,890	18.6			
Self-employed	2,151	6.8	Intermediate	8,041	25.4
Skilled working	8,799	27.8			
Unskilled working	1,489	4.7	Working	10,288	32.5

*Note:* N = 31,694