



Scar effects of unemployment on generalised social trust: The joint impact of individual and contextual unemployment across Europe

Leo Azzollini^{*}

Institutional Affiliations: University of Oxford, Institute for New Economic Thinking – Department of Social Policy and Intervention; Leverhulme Centre for Demographic Science – Department of Sociology; Nuffield College, United Kingdom

ARTICLE INFO

Keywords:

Unemployment scarring
Unemployment rate
Generalised social trust
Social stratification
Social capital
European social survey

ABSTRACT

How does unemployment affect generalised social trust? A growing body of work has analysed the scar effects of unemployment on trust. However, this literature has not yet addressed the moderating role of contextual unemployment. In this article, we extend a theoretical framework positing that individual and contextual unemployment depress generalised social trust and formulate competing hypotheses on their interaction. We test these hypotheses relying on Rounds 4–9 (2008–2018) of the European Social Survey, for up to 29 countries and 227 regions. Results from three-level multilevel models indicate that individual and contextual unemployment are associated with lower trust, although at the macro-level this holds only for cross-sectional unemployment. At the macro-micro level, we find that lower cross-sectional unemployment rates powerfully exacerbate the individual association, while the latter becomes not significant at higher cross-sectional rates. These findings highlight that individual and contextual unemployment are central to illuminate social trust patterns.

1. Introduction

How does unemployment affect generalised social trust? Since classic studies in sociology (Simmel, 1950 [1908]), generalised social trust is considered crucial for societies, as it promotes cooperation and solidarity among citizens (Luhmann, 1979; Coleman, 1988; Gambetta, 1988; Putnam, 2000), and is closely linked to both equality (Rothstein and Uslaner, 2005; Fairbrother and Martin, 2013) and democracy (Hardin and Offe, 1999; Uslaner, 1999; Newton, 2001; Paxton, 2002, 2007).

Given this centrality of generalised social trust for contemporary democratic societies, many researchers have focused on its determinants, examining them at the individual (e.g., social stratification variables, Newton et al., 2018) and contextual levels (e.g., inequality, Delhey and Newton, 2003, 2005; Fairbrother and Martin, 2013; Uslaner, 2017). Yet, this literature has paid comparatively less attention to an increasingly salient phenomenon in social science: *the scar effects of unemployment* (Clark et al., 2001; Arulampalam et al., 2001; Gangl, 2006). A voluminous body of research establishes that past experiences of unemployment generate long-lasting hardships across several domains, from labour market to health, family, life satisfaction, and politics (Ehlert, 2012; Oesch and Lipps, 2013; Emmenegger et al., 2015, 2017; Mooi-Reci and Ganzeboom, 2015; Pearlman, 2015; Heggebo and Elstad, 2018; Mousteri et al., 2018).

Within this research stream, two studies have explored the scar effects of unemployment on generalised social trust (hereafter,

^{*} Postdoctoral Research Officer at University of Oxford, Institute for New Economic Thinking - Department of Social Policy and Intervention, Manor Road, OX1 3UQ, Oxford, United Kingdom.

E-mail address: leo.azzollini@spi.ox.ac.uk.

GST): Laurence (2015), and Mewes et al. (2021). These studies have shown that past unemployment experiences depress GST, highlighting the disruption of psychological well-being as a key mechanism. To do so, they have relied on longitudinal data from the UK and the US respectively, controlling for individual unobserved heterogeneity. In doing so, they found support for the so-called experiential (Dinesen and Bekkers, 2017) or personality (Delhey and Newton, 2003) stream of research, arguing that adult life-course experiences can affect trust (Glanville and Paxton, 2007; Wu, 2020), as opposed to the research stream envisaging trust as driven by early-life socialisation (Erikson, 1993; Rosenberg 1956; Allport, 1961; Cattell, 2017; Uslaner, 2002). In their conclusions, Mewes et al. (2021) call for future research on the scar effects of unemployment on GST to go beyond those two countries, and assess their impact across different geographical contexts.

In this paper, our goal is precisely to do so, by expanding on the role of context. Recent papers have shown how contextual variables moderate the effects of past unemployment on political outcomes (Azzollini, 2021; Giustozzi and Gangl, 2021; Österman and Lindgren, 2021). If such macro-micro effects exist for political trust and electoral participation, it is likely that the interaction between contextual and individual unemployment influences GST as well. Following the call by Mewes et al. (2021), we contribute to the research on unemployment and GST in three ways.

First, at the micro-level, we assess whether the findings by Laurence (2015) and Mewes et al. (2021) on the association between the past experiences of unemployment and generalised social trust hold in Europe and neighbouring countries, expanding the geographical focus up to 29 countries.

Second, at the macro-level, we examine the association between individual trust and contextual unemployment at the subnational levels (NUTS1 and NUTS2), while controlling for unobserved heterogeneity at the country level. More specifically, we assess the role played by cross-sectional unemployment (average unemployment rate by region) and the longitudinal unemployment (yearly deviation from the average regional unemployment).

Third and most important, we interact the macro- and micro-levels, and examine how the contextual unemployment rate moderates the association between unemployment scars and social trust, focusing again on the roles of cross-sectional and longitudinal unemployment. To do so, we rely on multilevel data from Rounds 4–9 of the European Social Survey (2008–2018), to which we fit three-level multilevel models (individuals within region-years, within regions, including random slopes for unemployment scarring), and employ the Fairbrother (2014) decomposition technique to disentangle the role of cross-sectional and longitudinal unemployment, together with country and year Fixed Effects, as well as socio-demographic and regional controls. We outline the theoretical framework in Section 2, describe data and analytical strategy in Section 3, present the results in Section 4, and discuss them in the conclusive Section 5.

2. Theoretical framework

In trust research, Generalised Social Trust (hereafter, GST) is considered as the perception that others are trustworthy (Hardin, 1993), with the “others” being represented by a generalised other: “*Generalised trust is not directed at specific people for specific purposes. It is general – not related to anyone in particular for any specified purpose.*” (Uslaner, 2018, p. 2), and therefore distinct from particularised and political trust (Levi and Stoker, 2000). The generalised character of social trust facilitates cooperation beyond the boundaries of personal connections (Luhmann, 1979; Coleman, 1988; Gambetta, 1988; Yamagishi and Yamagishi, 1994; Putnam, 2000), and is therefore described as in a symbiotic relationship with democracy (Hardin and Offe, 1999; Uslaner, 1999; Newton, 2001; Paxton, 2002, 2007). Considering its societal centrality, research on determinants of social trust is abundant (Nannestad, 2008), and can be divided into two broad groups: individual and societal theories (Delhey and Newton, 2003). Matching the literature debate, we develop our theoretical framework by exploring the pathways through which social trust is associated with unemployment at the micro and macro levels and integrate them to investigate the relationship at macro-micro levels.

2.1. Micro: unemployment scarring and generalised social trust

At the individual level, the scholarship on Generalised Social Trust is divided into two main camps: dispositional vs. experiential (Dinesen and Bekkers, 2017), alternatively called personality vs. social success (Delhey and Newton, 2003). The former consider trust to be a socio-psychological trait formed early in the life-course and stable afterwards (Erikson, 1993; Allport, 1961; Cattell, 2017; Rosenberg 1956), and therefore as mostly independent from experience (Uslaner, 2002, 2018). On the other hand, the latter consider trust as susceptible to experience (Hardin, 1993; Delhey and Newton, 2003; Rothstein and Stolle, 2008; Freitag and Trauttmüller, 2009; Glanville and Paxton, 2007; Paxton and Glanville, 2015; Wu, 2020; Mewes et al., 2021), and therefore as variable during the life course.

The two pioneering papers connecting unemployment scarring to GST are located firmly within the second research strand: focusing respectively on the UK and the US, Laurence (2015) and Mewes et al. (2021) find that experiencing unemployment in the past depresses GST powerfully, with unemployment experiences explaining up to a third of the decline in GST in the US between 1973 and 2018 (Mewes et al., 2021). But if unemployment scars can affect trust, what are the mechanisms underpinning the focal relationship? To understand this, we review the mechanisms developed in the pioneering papers on the focal phenomenon (Laurence, 2015; Mewes et al., 2021), and draw further mechanisms from the literature on trust research.

In these two papers, the core mechanism is *psychological well-being*: job loss, especially involuntary, represents a violation of a “*psychological contract of trust between what an organisation will provide in return for what employees provide the organisation*” (Laurence, 2015, p. 47), with this effect extending to the wider social context in which the violation happened (Misztal, 2001; Perrucci and Perrucci, 2009). Beyond the economic effects of job loss (Lockwood, 1991; Gangl, 2006; Brand and Burgard, 2008; Ehlert, 2012; Brand,

2015; Mooi-Reci and Ganzeboom, 2015; Di Nallo and Oesch, 2021), the literature on unemployment scarring documents ample socio-psychological effects (Hill, 1977; Stokes and Cochrane, 1984; Goldsmith et al., 1997), ranging from divorce (Goñalons-Pons and Gangl, 2021), to lower life satisfaction (Clark and Oswald, 1994; Clark et al., 2001; Lucas et al., 2004; Oesch and Lipps, 2013; Chadi, 2014; Eichhorn, 2014), worse physical and mental health (Knabe and Rätzel, 2011; Pearlman, 2015; Ardito et al., 2017; Heggebo and Elstad, 2018; Moustieri et al., 2018), political disengagement (Emmenegger et al., 2015; 2017; Azzollini, 2021; Giustozzi and Gangl, 2021), and lower personal efficacy (Kohn and Schooler, 1982; Archer and Rhodes, 1993; Turner, 1995). Laurence (2015) connects lower personal efficacy in particular to lower levels of trust. He and Mewes et al. (2021) therefore posit that past unemployment scars decrease GST precisely through lower psychological well-being of the individual. Laurence (2015) argues that this is moderated by an individual's *centrality of work*: the greater the value attached to jobs, the stronger the scar effect on well-being.

An additional mechanism linking unemployment scars to lower GST is the *disruption of social relationships*. Job loss disrupts the former powerfully, as it severs previous workplace relationships and leads individuals to focus inwardly on “*holding body and soul together*” (Rosenstone, 1982, p. 26). Furthermore, unemployment also generates stigma in non-work relationships (Clark, 2003; Mooi-Reci and Ganzeboom, 2015; Danckert, 2017; Goñalons-Pons and Gangl, 2021). Given that social relationships are considered as a key locus for the formation of social trust (Yamagishi and Yamagishi, 1994; 1998; Putnam, 2000), unemployment scarring may depress trust through their contraction (Putnam, 2000; Laurence, 2015). Following this literature and the findings by Laurence (2015) and Mewes et al. (2021), we expect that having experienced unemployment is associated with lower social trust. We do not formulate a specific hypothesis at the individual level, as the reliance on a repeated cross-section does not allow to approach a causal identification for the scarring effect, which would require a panel data design.

2.2. Macro: contextual Unemployment and generalised social trust

Having examined the relationship between unemployment scars and trust at the micro-level, we turn to the next level: how can the unemployment rate at the macro-level influence Generalised Social Trust of individuals?

While the impact of societal dynamics on individual trust is well-established in the literature (Delhey and Newton, 2003; Fairbrother and Martin, 2013; Uslaner, 2017), research on the impact of contextual unemployment on Generalised Social Trust is relatively scarce, especially compared with the abundance of work on unemployment rates and *political* trust (Newton et al., 2018; Uslaner, 2018). Furthermore, there is even less evidence on the underlying pathways: is lower GST associated with the structural level of unemployment (*cross-sectional*), and therefore changing slowly over time, or sensitive to short-term changes in unemployment rates, similarly to political trust (Newton et al., 2018)? To understand which (or both) of these perspectives apply, we draw mechanisms from trust research, and assess how they may operate cross-sectionally and/or longitudinally.

A first mechanism is the *awareness of social conflicts* (Delhey and Newton, 2003). Drawing from the societal theory (Knack and Keefer, 1997), Delhey and Newton (2003) argue that trust is affected by “*reported feelings about the intensity of conflict in society*” (p. 99), with a stronger perceived intensity of socio-economic cleavages decreasing trust, while on the other hand “*generalised social trust tends to be high among citizens who believe there are few severe social conflicts and where the sense of public safety is high*” (Delhey and Newton, 2003, p. 113). In this regard, unemployment may decrease social trust similarly to inequality (Uslaner, 2018), as the former is a key socio-economic cleavage, representing distributive conflicts in the labour market (Korpi, 1991).

However, unemployment may affect social trust through unique pathways, related to *social ties* (Granovetter, 1973; Rosenstone, 1982; Yamagishi and Yamagishi, 1994; 1998; Ermisch and Gambetta, 2010).

Unemployment may decrease trust by (re)structuring the social ties of the individual: a higher prevalence of unemployment may restrict work relationships (Rosenstone, 1982), and concentrate interactions within mutually committed relations (e.g., in the family), to minimise the chances of being exploited in interactions where there is more socio-economic vulnerability, and there are higher incentives to act dishonestly (Yamagishi and Yamagishi, 1994; 1998). Ermisch and Gambetta (2010) further argue that social trust thrives *outside* close relationships, as it is needed to facilitate interactions with others. Baldassarri (2020) indeed finds that higher labour force participation, and more broadly market integration, boosts generalised altruism and prosociality. These arguments reflect the *Strength of Weak Ties* argument by Granovetter (1973): by (re)structuring social ties away from weak ties (e.g., work) and towards strong ties, unemployment may decrease both the opportunities and the motivation to develop social trust.

Do these mechanisms operate cross-sectionally or longitudinally?

If parental and contextual *socialisation* during early-life (Erikson, 1993; Rosenberg 1956; Allport, 1961; Cattell, 2017; Uslaner, 2002) largely shapes trust, the *structural* (cross-sectional) levels of unemployment will affect trust: differential exposure to socio-economic conflicts during youth may affect persistent feelings of social uncertainty and safety, and shape the importance of mutually connected relationships to navigate life, leading to relatively stable trust levels in the medium-term.

On the other hand, an increasing unemployment rate would longitudinally decrease social trust also in the short-term, by heightening the awareness of social conflicts and by disrupting work relationships through collective job loss (Rosenstone, 1982).

While there is scarce research on contextual unemployment and trust, the empirical evidence on inequality favours the cross-sectional perspective: focusing on inequality and trust with US General Social Survey data, Fairbrother and Martin (2013) show that US states with persistently higher inequality levels during the 1973–2004 period exhibit lower GST, but that longitudinal variation in inequality does not affect trust. This remarks how expectations of untrustworthiness may be structurally persistent in society, and that socio-economic changes may affect them only slowly.

Considering both potential pathways, we posit the following:

H1a. Higher *cross-sectional* unemployment rates are associated with lower individual Generalised Social Trust.

H1b. Higher *longitudinal* unemployment rates are associated with lower individual Generalised Social Trust.

2.3. Macro-micro: joint role of unemployment scarring and rates for generalised social trust

How do the cross-sectional and longitudinal unemployment rates at the macro-level affect the association between unemployment scars and social trust at the micro-level? Drawing from trust research, we have so far assessed how unemployment at both levels may be negatively associated with trust. However, no article has yet assessed their joint role in influencing social trust. To do so, we compare competing hypotheses adapted from the literature: *mitigate* vs. *exacerbate*, specifying how the underlying mechanism may operate cross-sectionally and longitudinally.

Starting from the mitigate hypothesis, we draw two related mechanisms from unemployment scarring research: *habituation* and *status deprivation*. The habituation mechanism holds that unemployment hurts less when there is more of it (Clark, 2003). This is deeply linked to stigma and societal norms, as suggested by Clark and Oswald (1994, p. 647): “it is harder to put up with unemployment if one lives in a place where few people are without a job.” In such a situation, the unemployed “would be more likely to attribute their job loss to some personal failing” (Turner, 1995). On the contrary, a higher prevalence of unemployment is found to reduce adverse effects on the unemployed by reducing the stigma placed on them by society and themselves (Clark, 2003), “when [job] displacement is a common occurrence, the shame associated with job loss may be ameliorated. The feeling of support due to others being in the same condition may somewhat counteract the negative economic effects.” (Pearlman, 2015, p. 572). This dynamic improves life satisfaction (Clark, 2003), attitudes towards the unemployed (Danckert, 2017; Carriero and Filandri, 2019), mitigates the adverse effects of unemployment on health and electoral participation (Heggebo and Elstad, 2018; Azzollini, 2021). Symmetrically, the status deprivation mechanism applies to a scenario where economic conditions are better. Developed by Giustozzi and Gangl (2021) in their study on welfare generosity, unemployment scarring, and political trust, the mechanism holds that the scar effects of unemployment are stronger when economic conditions are better. Giustozzi and Gangl (2021) argue that “if few people experience unemployment, those citizens who actually do might feel particularly disadvantaged” (Giustozzi and Gangl, 2021, p. 6). These mechanisms operate mostly at the subnational levels: in a context where regional unemployment varies widely within countries (Pittau et al., 2010; Oesch and Lipps, 2013; Eichhorn, 2014), the extent to which employment is considered central by social norms may vary considerably across regions within the same country.

However, we need to again clarify whether the mechanisms are shaped by cross-sectional or longitudinal variation in unemployment (or both). The crucial element is whether the centrality of work (Laurence, 2015) is shaped by socialisation (Uslaner, 2002, 2018) or by short-run evaluations (Danckert, 2017).

From a cross-national perspective, socialisation (Uslaner, 2002, 2018) may be at the heart of habituation and status deprivation. If individuals are socialised in a structurally high-unemployment region, this will affect their social norms on unemployment (Clark, 2003): by growing up in a context where joblessness is high, the unemployment stigma may be mitigated as the experience is considered common, thus mitigating the psychological adverse effects of unemployment. In such a scenario, the perceptions of social conflicts/uncertainty may shape social distrust from early on, reducing the importance of subsequent individual experiences. Considering the symmetric scenario, socialisation in a low-unemployment context may heighten the centrality of individual work, therefore exacerbating the unemployment stigma (Clark and Oswald, 1994; Turner, 1995). In this case, the unemployment scar-social trust negative association may be stronger, as non-scarred individuals are not exposed to social conflicts personally or contextually, while scarred individuals are personally affected.

Longitudinally, habituation/deprivation may occur if individuals are sensitive to contextual variations in the unemployment rate, as increasing perceptions of social conflicts/uncertainty may differentially affect the scarred and non-scarred: while the former are already aware of social conflicts due to their individual characteristics, the non-scarred may more powerfully perceive social conflicts when the unemployment rates rise, as opposed to contexts where both personal and contextual characteristics are good. Therefore, the increase in the unemployment rate may entail a convergence in the trust levels of the scarred and non-scarred. Following these two perspectives, we posit that:

H2a. Higher cross-sectional unemployment rates mitigate the association between unemployment scars and Generalised Social Trust.

H2b. Higher longitudinal unemployment rates mitigate the association between unemployment scars and Generalised Social Trust.

However, the opposite pattern may also hold. The centrality of work mechanism by Laurence (2015) and Mewes et al. (2021) could operate in the opposite direction, with the importance of work being more salient when jobs are scarce, thus exacerbating the effects on well-being and social relationships, in turn decreasing trust.

Similarly, the awareness of social conflicts could further increase for those personally scarred by unemployment in a context where unemployment is higher, increasing re-employment difficulties and the risk of job loss (Paul and Moser, 2009). These two effects could lead to a combination of adversities, decreasing trust even further for the scarred, with greater social conflicts/uncertainty further harming the scarred, who need who look for jobs in a context where they are stigmatized by employers (Lockwood, 1991). Such a combined effect is found by Pearlman (2015) in health research, with unemployment experiences being more scarring in years where unemployment rates were higher. A similar pattern was found by Chadi (2014) for life satisfaction in German regions.

Symmetrically, a strand of scholarship argues that the adverse effects of unemployment on personal efficacy (Radcliff, 1992; Marx and Nguyen, 2016) and generalised social trust (Nguyen, 2017) can be mitigated by better economic conditions and more generous welfare states, by cushioning the harshest effects of unemployment experiences. In both cases, the combination of adversities/buffering mainly operate longitudinally (Pearlman, 2015), with the unemployment scar-trust association being exacerbated by a scenario where individual job tenure is lower (Gangl, 2006) and jobs are scarce. Cross-sectionally, being socialised in a high-unemployment scenario may increase social uncertainty, and already established social distrust may be further entrenched by individual unemployment experiences. Following these strands of research, we posit that:

H3a. Higher cross-sectional unemployment rates exacerbate the association between unemployment scars and Generalised Social Trust.

H3b. Higher longitudinal unemployment rates exacerbate the association between unemployment scars and Generalised Social Trust.

We summarise these mechanisms and hypotheses in [Table 1](#).

3. Data and methods

3.1. Dataset

The data we use comes from the European Social Survey (ESS), a biennial cross-national survey of attitudes and behaviour established in 2001. The ESS uses cross-sectional, probability samples that are representative of all persons aged 15+ resident within households in each country.

The European Social Survey is administered biennially to approximately 50,000 individuals and has been administered in a total of 37 countries across Europe as of the latest round (2018). In this paper, we rely on the entire set of available multilevel rounds of the ESS (round 4–9, [European Social Survey, 2008–2018](#)), which integrate information on individual respondents and contextual variables at different macro levels, including country and regional variables. We provide descriptive statistics in [Table 2](#).

3.2. Dependent variable

To measure Generalised Social Trust, we rely on a widely established practice in trust research: the three-item social trust scale ([Brehm and Rahn, 1997](#); [Reeskens and Hooghe, 2008](#); [Glanville et al., 2016](#); [Bauer and Freitag, 2018](#); [Mewes et al., 2021](#)). This scale is based on the following questions: “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?”; “Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?”; “Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?”. ([European Social Survey Questionnaire, Round 9, 2018](#)).

This three-item approach based on [Rosenberg \(1956, 1957\)](#) allows a more comprehensive measurement of generalised social trust and is widely used in the literature ([Zmerli and Newton, 2007, 2008](#); [Bauer and Freitag, 2018](#); [Mewes et al., 2021](#)).

For all three questions, the agreement is expressed on an 11-point scale ranging from 0 (completely disagree) to 10 (completely agree). Following other works relying on the European Social Survey ([Reeskens and Hooghe, 2008](#); [Nguyen, 2017](#)), we build the three-item scale by averaging the values of the three variables. The resulting trust scale similarly ranges from 0 to 10 and is validated by a Cronbach’s alphas around 0.79 across specifications. The mean and median levels are around 5, while the modal level is 6, entailing that the distribution is slightly left-skewed (−0.345), and platykurtic (kurtosis 2.77, compared to the threshold of 3 for a normal distribution). We report the frequency tables and histograms for the GST variable and for its three component variables in Appendix Section 1, [Tables A2-3](#) and Figure A1. We also report the full variable list with variable names and survey questions in the Appendix Section 1, Table A1

For purposes of robustness, we replicate the analysis relying on each of the three component variables as the dependent variable. Results are reported in Appendix Section 4 (Subsection 4.2, Tables A12-A17) and are in line with the main results.

3.3. Independent variables

3.3.1. unemployment scarring

To measure unemployment scars, we rely on the variables capturing whether the respondent has been unemployed for over 3 months or over 12 months. Merging them, we build a single variable that takes on three values: 0 if the respondent has not experienced unemployment for more than 3 months (“No Scar”), 1 if the respondent has experienced unemployment for more than 3 months but less than one year (“Short Scar”), and 2 if the respondent has experienced unemployment for over one year (“Long Scar”).

Table 1
Summary of mechanisms and hypotheses.

Level	Mechanism	Posited Effect on Trust (GST)	Research
Micro	Psychological Well-Being and Stigma, Centrality of Work	Decrease (In line with literature)	Laurence (2015) , Mewes et al. (2021)
Macro	Disruption of Social Relationships	<i>H1 - Decrease (Cross-Sectional, H1a; Longitudinal, H1b)</i>	Rosenstone (1982) , Laurence (2015)
	Awareness of Social Conflicts/Uncertainty		Delhey and Newton (2003) , Fairbrother and Martin (2013)
Macro-Micro	Structuring Social Ties/Outward Exposure	<i>H2 - Mitigate (Cross-Sectional, H2a; Longitudinal, H2b)</i>	Yamagishi and Yamagishi (1994, 1998) , Ermisch and Gambetta (2010)
	Habituation/Status Deprivation		Clark (2003) , Heggebo and Elstad (2018) , Giustozzi and Gangl (2021)
	Differential Awareness of Social Conflicts/ Uncertainty		Uslaner (2002) , Delhey and Newton (2003) , Fairbrother and Martin (2013)
	Combination of Adversities		Paul and Moser (2009) , Chadi (2014) , Pearlman (2015)
	Buffering Economic Conditions	<i>H3 - Exacerbate (Cross-Sectional, H3a; Longitudinal, H3b)</i>	Marx and Nguyen (2016) , Nguyen (2017)

Table 2a
Descriptive statistics (part 1).

Variable	N	Mean/Percent	SD	Min.	Max.
Generalised Social Trust	219,284	5.15	1.97	0	10
Unemployment Scarring	219,284	0.44	0.72	0	2
No Scar	154,25	70.34%			
Short Scar (>3 Months)	34,503	15.74%			
Long Scar (>12 Months)	30,531	13.92%			
Origin Social Class (EGP)	219,284	5.79	2.75	1	10
Professional and Technical	24,240	11.05%			
Higher Administrator	8763	4%			
Clerical	21,665	9.88%			
Sales	15,718	7.17%			
Service	20,536	9.37%			
Skilled Worker	32,008	14.60%			
Semi-skilled Worker	28,617	13.05%			
Unskilled Worker	20,863	9.52%			
Farm Worker	31,360	14.30%			
Missing Origin Class	15,512	7.07%			
Destination Social Class (ESEC)	219,284	5.64	3.28	1	10
Large Employers, Higher Mgrs/Prof.	30,836	14.07%			
Higher Supervisors, Lower Mgrs/Prof.	33,670	15.36%			
Intermediate Occupations	15,277	6.97%			
Small Employers and Self-Employed	11,315	5.16%			
Small Empl. and Self-Emp. (Agri.)	5127	2.34%			
Lower Supervisors, and Technicians	14,031	6.40%			
Lower Sales and Service	28,738	13.11%			
Lower Technical	20,830	9.50%			
Routine	23,754	10.83%			
Missing Destination Class	35,705	16.28%			
Level of Education (ES-ISCED)	219,284	3.70	1.95	0	7
Higher Tertiary (ES-ISCED V2)	24,229	9.90%			
Lower Tertiary (ES-ISCED V1)	21,703	9.25%			
Vocational Training (ES-ISCED IV)	24,651	11.24%			
Upper Secondary, U. (ES-ISCED IIIa)	48,082	16.18%			
Upper Secondary, L. (ES-ISCED IIIb)	35,466	21.93%			
Low Secondary (ES-ISCED II)	34,366	15.67%			
Less than L. Secondary (ES-ISCED I)	20,288	9.25%			
Not harmonisable into ES-ISCED	10,499	4.79%			

Notes: Descriptive statistics with Design Weights. Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018).

3.3.2. Socio-demographic controls

Our socio-demographic controls include ten variables: origin social class, destination social class, the highest level of education, household income decile, current labour market position, age, religiosity, migrant and ethnic status, and gender. These variables address the key social correlates of generalised social trust (Newton et al., 2018), as well as the impact of early life-socialisation through social origins, considered as crucial for the formation of trust by the dispositional strand of scholarship (Erikson, 1993; Rosenberg 1956; Allport, 1961; Cattell, 2017; Uslaner, 2002).

For origin social class, we rely on the social class of the parent with the highest class, measured according to the Erikson et al. (1979) class schema. To account for a sizeable proportion of missing values (7.07%), we create an additional category for “Missing Origin Class”.

For destination social class, we transform the ISCO-08 measures into social classes according to the European Socio-Economic Classification (ESEC) by Rose and Harrison (2007), which is an updated version of the Erikson et al. (1979) schema. To do so, we rely on the STATA package by Jann (2019). We create an additional category for those without codifiable occupations, “Missing Destination Class” (16.28%). To assess whether the inclusion of destination social class in our models is warranted, we replicate the analysis without including destination social class in Appendix Section 4 (Subsection 4.3). There is no substantial change for the key results, and the Bayesian Information Criterion statistics provide very strong support for the inclusion of Destination Social Class (from –150 to under –200).

The current activity variable captures labour market position, thus controlling for the impact of being currently unemployed. This variable further includes individuals in retirement and outside of the workforce. This choice is deliberate, as it may be the result of unemployment scarring experiences in the past. To avoid multicollinearity with the focal variable and class controls, we create an additional category for those who have never been employed and are not currently in education (Never Employed). We report robustness checks for multicollinearity in the Appendix Section 4 (Subsection 4.1). The models in the main analysis have a mean Variance Inflation Factor of 2.53, with no variable exhibiting VIF higher than 10, mitigating multicollinearity concerns.

For education, we rely on the ES-ISCED classification present in the ESS.

We include household income decile, adding a category for missing responses (21.96% of the sample). Controls are included for respondents’ age, religiosity, native/migrant background, and gender. These variables are binary except age. For purposes of

Table 2b
Descriptive statistics (part 2).

Variable	N	Mean/Percent	SD	Min.	Max.
Income Decile	219,284	4.28	1.95	0	10
Top Decile	15,094	6.88%			
Ninth Decile	15,314	6.98%			
Eight Decile	17,642	8.05%			
Seventh Decile	18,467	8.42%			
Sixth Decile	18,057	8.23%			
Fifth Decile	18,773	8.56%			
Fourth Decile	18,860	8.60%			
Third Decile	17,838	8.13%			
Second Decile	16,729	7.63%			
First Decile	14,339	6.54%			
Missing Income	48,169	21.96%			
Labour Market Position	219,284	2.73	2.07	1	7
Paid Work	113,606	51.81%			
In Education	14,034	6.40%			
Unemployed or Inactive	12,378	5.64%			
Never Employed	9523	4.34%			
Retired	50,387	22.98%			
Housework or Community Service	4545	2.07%			
Sick or Disabled	14,811	6.75%			
Age	219,284	49.17	17.75	18	99
Religious	219,284	0.60	0.49	0	1
Gender	219,284	0.47	0.49	0	1
Native	219,284	0.92	0.28	0	1
Minority	219,284	0.06	0.23	0	1
Unemployment Rate (NUTS1)	219,284	8.59%	4.48	2.2%	33.5%
Cross-Sectional Unemp. Rate (NUTS1)	219,284	8.56%	3.80	3.24%	26.89%
Longitudinal Unemp. Rate (NUTS1)	219,284	0.002%	2.49	−9.89%	8.19%
Population Size (thousands) (NUTS1)	219,284	5659.06	3545.89	622.36	17996.62
Population Density (NUTS1)	219,284	214.83	569.7	5.9	7471.5
GDP per capita - PPP (NUTS1)	219,284	68.47	55.42	0.69	247
Unemployment Rate (NUTS2)	181,128	8.93%	4.90	1.3%	38.5%
Cross-Sectional Unemp. Rate (NUTS2)	181,128	8.93%	4.28	2.2%	30.9%
Longitudinal Unemp. Rate (NUTS2)	181,128	−0.003%	2.49	−10.63%	8.19%
Population Size (thousands) (NUTS2)	181,128	2124.49	1677.2	69.7	12213.5
Population Density (NUTS2)	181,128	275.2	684	3.3	7471.5
GDP per capita - PPP (NUTS2)	181,128	67.37	54.78	1.07	290

Notes: Descriptive statistics with Design Weights. Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018).

robustness, we replicate the entire analysis restricting the sample to individuals up to age 65. Results reported in Appendix Section 4 (Subsection 4.4), and are in line with the main analysis.

3.3.3. Macro variables

As regards the macro variables, we rely on the NUTS1 and NUTS2 units in the Nomenclature of Territorial Units for Statistics, which is used by Eurostat to harmonise hierarchical levels across the European Union and the selected non-EU countries.

For the NUTS1 specifications, the sample consists of 219 thousand respondents from 29 countries, 107 NUTS1 units, and 429 NUTS1-years spanning 2008 to 2018. Countries include Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain and Northern Ireland, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, and Sweden. For the NUTS2 specifications, the sample is over 188 thousand respondents from 26 countries, 227 NUTS2 units, and 844 NUTS2-years spanning the years 2008–2018. Countries are the same for NUTS1, except for Germany, Great Britain, and Montenegro. Our second focal covariate is the region-year unemployment rate in two forms, reflecting the theoretical framework: the cross-sectional unemployment rate (average by region), and the longitudinal deviation of the region-year rate from the regional average. Unemployment rates in the multilevel ESS dataset are provided by Eurostat for each year. The descriptive statistics for the unemployment rates at NUTS1 and 2 levels in the three forms are presented in Table 2, along with those for population size (in thousands), population density (per km²), and GDP per capita in purchasing power parity (PPP). The full list of country, NUTS1 and 2 units, with the associated overall unemployment rates across years, is available in Appendix Section 2, Tables A4–A6.

3.4. Analytical strategy

To study the associations between Generalised Social Trust and our explanatory variables at the individual and contextual levels, we fit multilevel linear regression models to the European Social Survey data. We rely on three-level multilevel models: individuals nested within region-years, nested within regions. Following the decomposition technique by Fairbrother (2014), this allows us to

decompose the overall unemployment rate into a cross-sectional component (the average regional unemployment rate) and the longitudinal component (the yearly regional deviation from its average unemployment rate), set to disentangle the pathways linking unemployment to generalised social trust. As our primary focus is on the cross-level interactions between these contextual dynamics and individual unemployment scarring, we systematically include a random slope for unemployment scarring at the individual level, at the region-year level for the Baseline and Longitudinal models, and at the region level for the Cross-Sectional models. Following Heisig and Schaeffer (2019), this is set to avoid inflation of the t-ratios for the coefficients of the cross-level interactions. Given our theoretical focus on subnational units as central for social outcomes (Clark, 2003; Pittau et al., 2010; Oesch and Lipps, 2013; Eichhorn, 2014), we address country-level unobserved heterogeneity through country Fixed Effects, controlling also for common time trends through survey year Fixed Effects. Furthermore, we control for NUTS-level variables that may confound Generalised Social Trust, such as population size and density (Delhey and Newton, 2003), and GDP per capita in terms of Purchasing Power Parity (Eichhorn, 2014; Deimantas, 2021).

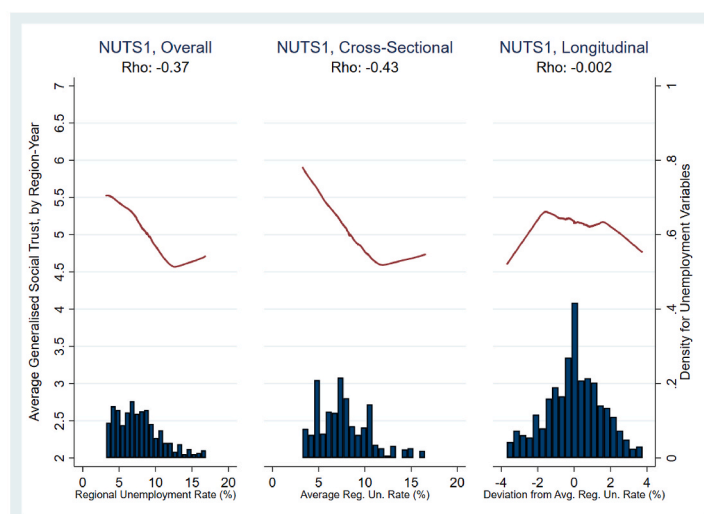
To assess whether multilevel models (MLM) are also warranted empirically, we rely on two metrics. First, multilevel models typically require specific thresholds for higher-order groups (Raudenbush and Bryk, 2002; Gelman and Hill, 2006), to ensure that the contextual effects in MLM are unbiased: 25 for MLM linear regression models, and 30 for logistic regression models (Maas and Hox, 2004; Stegmueller, 2013; Bryan and Jenkins, 2016), although solutions for lower numbers are being developed (Elff et al., 2021). Our analytical strategy features 107 (NUTS1) and 227 (NUTS2) units at the regional level, therefore far exceeding the conventional thresholds. A second consideration for multilevel models is the Intra-Class Correlation (ICC), measuring the correlation between individuals in the same cluster (Rabe-Hesketh and Skrondal, 2008). While there is no firmly established ICC minimum value for MLM to be warranted (Musca et al., 2011; Garson, 2019), the ICC is consistently above 15% for the NUTS1 models and 20% for NUTS2 models, highlighting that multilevel modelling is clearly needed to address the focal research questions.

Nonetheless, multilevel models operate under assumptions such as the normal distribution of the random effects for up to three contextual levels (West et al., 2006; Rabe-Hesketh and Skrondal, 2008; Bell and Jones, 2015; Garson, 2019). For purposes of robustness, we replicate the main analysis relying on linear regression models with country-year Fixed Effects, leveraging on robust Standard Errors (SEs) using country-years as clusters to mitigate heteroskedasticity, and design weights. However, FEs models present potential problems with cross-level interactions, which may be unbiased due to region-specific heterogeneity (Schmidt-Catran and Fairbrother, 2016; Giesselmann and Schmidt-Catran, 2019). Given our focus on cross-level interactions, we rely on multilevel models in the main analysis, and report FEs models as described above as a robustness check. We report the results in Appendix Section 4 (Subsection 4.5). Broadly, the results are consistent with those from multilevel models in terms of magnitude, sign, and statistical significance, except for the coefficient of the interaction between a short unemployment scar and cross-sectional unemployment rate at the NUTS2 level, which is of minor importance relatively to the cross-level interactions with long unemployment scars.

4. Results

4.1. Descriptive results

We commence by reporting the associations between GST and unemployment at the region-year level in Figs. 1 and 2, relying on non-parametric plot smoothing (Lowess) with a tricube weighting function (Cleveland, 1979). We report associations between the



Notes: Lowess plots of NUTS1 Average Region-Year Generalised Social Trust and Regional Unemployment Rate (Overall, Cross-Sectional, Longitudinal). Red line depicts region-year mean value of trust, obtained through non-parametric weighted smoothing function (lowess in STATA 17, bandwidth=0.7). Data Source: European Social Survey, Multilevel Rounds 4-9 (2008-2018).

Fig. 1. Lowess plots, Regional Trust and Unemployment Rate (NUTS1).

region-year average social trust and the overall region-year unemployment rate (left), the cross-sectional average unemployment rate by region (middle), and the longitudinal yearly deviation from the average regional unemployment rate (right). We report only the middle 90% in the unemployment distribution to mitigate the influence of outliers and include histograms at the bottom (Scatterplots in Appendix Section 3, Figures A2-A3).

As regards the overall unemployment rate, both NUTS1 and 2 associations exhibit a similar pattern: social trust is higher where the unemployment rate is lower until the 10% threshold (roughly the 75th percentile), mostly stabilising afterwards. The correlation coefficients are -0.37 (NUTS1) and -0.39 (NUTS2), reinforcing the negative relationship. We enquire further by decomposing the regional unemployment rate into its cross-sectional (average regional unemployment rate) and longitudinal (yearly deviation from the average regional unemployment rate). For the Cross-Sectional component, correlation coefficients are further negative (-0.43 , -0.40), and the negative pattern becomes stronger: social trust is lower in regions where the unemployment rate is higher, with stabilisation after the 10% threshold. In contrast, the Longitudinal Component presents unclear patterns, with correlation coefficients very close to 0 and somewhat bell-shaped patterns. To assess whether the empirical evidence supports modelling both (or either) components as quadratic as opposed to linear, we compare the Bayesian Information Criterion statistics for the models entering both as linear, alternatively quadratic, both as quadratic, and also with binary unemployment scarring. Models and BICs are reported in Appendix Section 4 (4.6), and consistently support the models where both are linear. This descriptive evidence points to a clear role of the cross-sectional unemployment rate, as opposed to the longitudinal unemployment deviations from the regional averages.

Notes: Lowess plots of **NUTS1** Average Region-Year Generalised Social Trust and Regional Unemployment Rate (Overall, Cross-Sectional, Longitudinal). Red line depicts region-year mean value of trust, obtained through non-parametric weighted smoothing function (*lowess* in STATA 17, bandwidth = 0.7). *Data Source:* European Social Survey, Multilevel Rounds 4–9 (2008–2018).

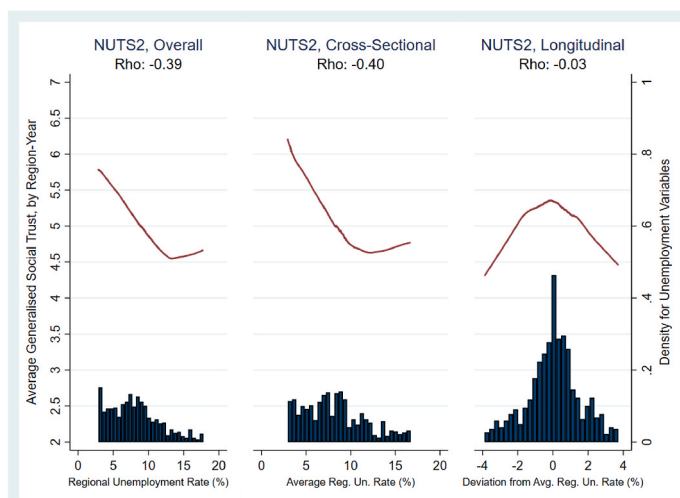
Notes: Lowess plots of **NUTS2** Average Region-Year Generalised Social Trust and Regional Unemployment Rate (Overall, Cross-Sectional, Longitudinal) (see Table 2). Red line depicts region-year mean value of trust, obtained through non-parametric weighted smoothing function (*lowess* in STATA 17, bandwidth = 0.7). *Data Source:* European Social Survey, Multilevel Rounds 4–9 (2008–2018).

4.2. 4.2 multilevel models

Table 3 and 4 report the three-level multilevel linear regression models for Generalised Social Trust (GST), with individuals nested within region-years, nested within regions (respectively NUTS1 and NUTS2). The Null models include only the intercept and the random intercepts at the region and region-year levels, while the *Baseline*, *Interaction – Cross-Sectional*, and *Interaction – Longitudinal* models include unemployment scarring and contextual rates, together with socio-demographic controls, country and year FEs. Unemployment scarring is entered as a random slope at the region-year level for the *Baseline* and *Interaction – Longitudinal* models, and at the region level for the *Interaction – Cross-Sectional* model, reflecting the theoretical framework. For purposes of graphical clarity, we only report here the results for the focal independent variables and the contextual-level controls. The full results are available in Appendix Section 3, Tables A7-A10.

As regards unemployment scars, both Short (>3 Months) and Long (>12 Months) Scars are consistently associated with lower GST at the 0.001 threshold of statistical significance, with effect sizes respectively around -4% and -12% of a Standard Deviation in GST, relatively to the baseline of those that have never experienced unemployment for more than 3 months.

The results for the socio-demographic controls (Appendix Tables A7-A10) are in line with the findings from the literature on trust



Notes: Lowess plots of **NUTS2** Average Region-Year Generalised Social Trust and Regional Unemployment Rate (Overall, Cross-Sectional, Longitudinal). Red line depicts region-year mean value of trust, obtained through non-parametric weighted smoothing function (*lowess* in STATA 17, bandwidth=0.7). *Data Source:* European Social Survey, Multilevel Rounds 4–9 (2008–2018).

Fig. 2. Lowess plots, Regional Trust and Unemployment Rate (NUTS2).

Table 3
Generalised social trust and unemployment, multilevel models (NUTS1).

Variable	Null	Baseline	Interaction, Cross-Sectional	Interaction, Longitudinal
Unemployment Scarring (Baseline: No Scar)				
Short Unemp. Scar (>3 Months)		−0.081*** (0.012)	−0.204*** (0.030)	−0.081*** (0.012)
Long Unemp. Scar (>12 Months)		−0.235*** (0.016)	−0.395*** (0.043)	−0.233*** (0.016)
Cross-Sectional Regional Unemployment Rate (%)		−0.029*** (0.006)	−0.036*** (0.006)	−0.029*** (0.006)
Longitudinal Regional Unemployment Rate (%)		0.002 (0.005)	0.001 (0.005)	0.002 (0.005)
Un. Scar x Cross-Sectional Unemp.			0.015*** (0.003)	
Short Scar x Cross-Sectional Unemp.			0.019*** (0.004)	
Long Scar x Cross-Sectional Unemp.				
Un. Scar x Longitudinal Unemp.				0.0001 (0.005)
Short Scar x Longitudinal Unemp.				0.001 (0.006)
Long Scar x Longitudinal Unemp.				0.001 (0.006)
Intercept	5.024*** (0.075)	6.022*** (0.100)	6.014*** (0.102)	6.022*** (0.100)
Random-Effects Parameters				
Region Variance	0.588	0.009	0.010	0.009
Region Random Slope (Scarring)			0.004	
Region-Year Variance	0.032	0.031	0.024	0.031
Reg.-Year Random Slope (Scarring)		0.008		0.008
Cov. between Intercept and Slope		−0.009		−0.009
Intra-Class Correlation - Region	15.6%	0.3%	0.3%	0.2%
Intra-Class Correlation - Region-Year in Region	16.4%	1.3%	1.1%	1.3%
Country and Year Fixed Effects	Yes	Yes	Yes	Yes
Socio-Demographic and Regional Controls	Yes	Yes	Yes	Yes
Sample Size	219,284	219,284	219,284	219,284
N. Countries, Regions, Region-Years	29, 107, 429			
Bayesian Information Criterion (BIC)	875,369	867,134	867,124	867,159

Notes: Three-Level Multilevel Models (Individuals within Region-Years within Regions, **NUTS1**), with Random Slopes for Unemployment Scarring and unstructured covariance, except for Null Model. Country and Year Fixed Effects included. Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

(Newton et al., 2018): GST tends to be higher among those with upper social class origins and destinations, higher education, higher income decile, among respondents in paid work or education, among older respondents, religious people, women, natives, and ethnic majorities.

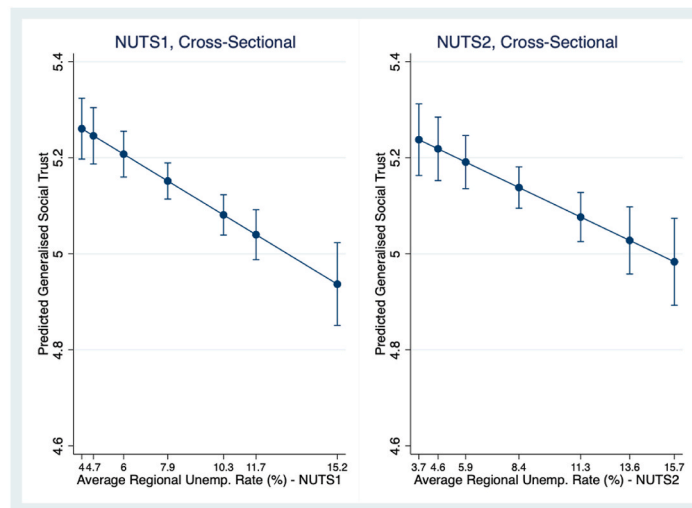
At the contextual level, the cross-sectional unemployment rate is similarly consistently negative and statistically significant at the 0.001 threshold: each additional percentage point in the average regional unemployment rate is associated with a decrease of around 1% SD in GST. On the contrary, the longitudinal unemployment rate coefficients are consistently positive, but not significant at the 0.05 threshold, corroborating the descriptive patterns.

To better gauge the cross-sectional association, we depict in Fig. 3 the Marginal Effects at the Means with 95% CIs for the cross-sectional average regional unemployment rates, computed at the 5th, 25th, 50th (median), 75th, 90th, and 95th values of the latter.

Notes: Graph depicting Marginal Effects at the Means with 95% CIs (5th, 25th, 50th, 75th, 90th, 95th percentiles of the cross-sectional unemployment rate), for the impact of unemployment (in %) on Generalised Social Trust. Computed with *margins* and depicted with *marginsplot* in STATA 17, after the three-level multilevel linear regression models in Tables 3 and 4 (Baseline specifications), with random slopes for unemployment scarring, and country and year FEs. Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018).

While the slope of the MEMs is slightly steeper for the NUTS1 level, in both cases regions with higher average unemployment rates also exhibit lower social trust, moving from trust levels around 5.2 to slightly less than 5. Again in terms of effect size, a 1 SD increase in the cross-sectional unemployment rates is associated with changes between −6% and −5% SD in Generalised Social Trust. The empirical evidence from the micro and macro levels shows how both individual scarring and the cross-sectional unemployment rate at the regional level are associated with lower GST.

How do these patterns interact between the individual and regional levels? The *Interaction, Cross-Sectional* models in Tables 3 and 4 show that the cross-level interactions between scarring and cross-sectional unemployment are consistently positive and statistically significant at the 0.001 threshold, with coefficients between 0.012 and 0.019. The signs of the coefficients suggest that, at higher levels of the cross-sectional unemployment rate, the difference in GST between the non-scarred and the scarred decreases. To better understand this pattern, we again report the associated MEMs in Fig. 4. For purposes of graphical clarity, we only report the MEMs for those with No Scars and with Long Scars. MEMs for the Short Scars are available in Appendix Section 3, Figure A4.



Notes: Graph depicting Marginal Effects at the Means with 95% CIs (5th, 25th, 50th, 75th, 90th, 95th percentiles of the cross-sectional unemployment rate), for the impact of unemployment (in %) on Generalised Social Trust. Computed with *margins* and depicted with *marginsplot* in STATA 17, after the three-level multilevel linear regression models in Tables 3-4 (*Baseline* specifications), with random slopes for unemployment scarring, and country and year FEs. Data Source: European Social Survey, Multilevel Rounds 4-9 (2008-2018).

Fig. 3. Predicted generalised social trust, by cross-sectional unemployment rates.

Notes: Graph depicting Marginal Effects at the Means with 95% CIs (5th, 25th, 50th, 75th, 90th, 95th percentiles of the cross-sectional unemployment rate), for the impact of unemployment (in %) interacted with unemployment scars (None: <3 Months; Long: ≥ 12 Months) on Generalised Social Trust. Computed with *margins* and depicted with *marginsplot* in STATA 17, after the three-level multilevel linear regression models in Tables 3 and 4 (*Interaction, Cross-Sectional* specifications), with random slopes for unemployment scarring, and country and year FEs. Data Source: European Social Survey, Multilevel Rounds 4-9 (2008-2018).

The MEMs in Fig. 4 present similar patterns for the NUTS1 and 2 levels: when the unemployment rate is at the 5th percentile of its distribution, the negative associations between unemployment scars and Generalised Social Trust are strongest. At the NUTS1 level, the difference amounts to 0.32, corresponding to around 16% of a SD in the dependent variable. Where the NUTS1 unemployment rate is higher, this difference shrinks to 7% SD and non-significance at the 95th percentile of the unemployment rate. A similar but pattern applies at the NUTS2 level, with the difference in GST between the non-scarred and long-scarred amounting to -0.31 at the 5th percentile (16% SD) and reaching -0.08 (7% SD) and non-significance at the 95th percentile.

These patterns are not only driven by the long-scarred: at the NUTS1 level, their predicted GST decreases with higher cross-sectional unemployment rates (by -0.22, 11% SD). At the NUTS2 level, a similar pattern occurs, but the 95% Confidence Intervals overlap, suggesting that statistical significance is not clear-cut. Across both models, the mitigation of association is most powerfully determined by the decrease in predicted GST of the non-scarred: this is strongest at the NUTS1 level (-0.42, 21% SD), and milder at the NUTS2 level (-0.34 change, 17% SD). The patterns for the short-scarred are similar to those of the non-scarred and mostly significantly different from the latter, as shown in Appendix Section 3, Figure A4. Therefore, the results support Hypothesis 2a: when the cross-sectional average regional unemployment rates are higher, the unemployment-GST negative associations are mitigated. This is driven by the non-scarred being particularly sensitive to higher cross-sectional unemployment rates, even if the long-scarred also exhibit statistically significant decreases at the NUTS1 level.

On the contrary, the *Interaction – Longitudinal* models show that there are no interactions between scarring and the longitudinal deviation from the average regional unemployment rate.

Across the descriptive level, the baseline coefficients from the multilevel models, and the cross-level interactions, the cross-sectional regional unemployment rate emerges as the primary variable at the contextual level, while the longitudinal unemployment is consistently not-significant. This is corroborated by the Bayesian Information Criterion statistics: relatively to the *Baseline* specification, the *Cross-Sectional* specifications are consistently lower (-10, NUTS1; -5, NUTS2), while the *Longitudinal* ones are consistently higher (+25, NUTS1; +23, NUTS2). Therefore, the difference in BIC statistics between the two interaction specifications is at least twice as large as the threshold of 10 set by Raftery (1995) as very strong support for model selection.

We summarise our findings in Table 4. The micro-level findings are in line with the literature (Laurence, 2015; Mewes et al., 2021), while they support Hypothesis 1a (cross-sectional decrease) at the macro level, and Hypothesis 2a (cross-sectional mitigation) at the macro-micro level.

5. Discussion and conclusion

In this paper, we addressed three questions: are past experiences of unemployment associated with lower Generalised Social Trust?

Table 4a

Generalised social trust and unemployment, multilevel models (NUTS2).

Variable	Null	Baseline	Interaction, Cross-Sectional	Interaction, Longitudinal
Unemployment Scarring (Baseline: No Scar)				
Short Unemp. Scar (>3 Months)		−0.085*** (0.013)	−0.187*** (0.029)	−0.085*** (0.013)
Long Unemp. Scar (>12 Months)		−0.228*** (0.017)	−0.365*** (0.040)	−0.228*** (0.017)
Cross-Sectional Regional Unemp. Rate (%)		−0.021*** (0.006)	−0.027*** (0.006)	−0.021*** (0.006)
Longitudinal Regional Unemp. Rate (%)		0.002 (0.005)	0.001 (0.005)	0.002 (0.005)
Unemp. Scar x Cross-Sectional Unemp.			0.012*** (0.003)	
Short Scar x Cross-Sectional Unemp.			0.015*** (0.004)	
Long Scar x Cross-Sectional Unemp.				
Unemp. Scar x Longitudinal Unemp.				−0.001 (0.005)
Short Scar x Longitudinal Unemp.				0.002 (0.006)
Long Scar x Longitudinal Unemp.				0.007*** (0.100)
Intercept	4.939*** (0.062)	6.074*** (0.099)	6.158*** (0.099)	6.074*** (0.100)
Random-Effects Parameters				
Region Variance	0.840	0.031	0.030	0.031
Region Random Slope (Scarring)			0.006	
Region-Year Variance	0.053	0.056	0.047	0.056
Region-Year Random Slope (Scarring)		0.012		0.012
Cov. between Intercept and Slope		−0.014		−0.014
Intra-Class Correlation - Region	21%	1%	1%	1%
Intra-Class Correlation - Region-Year in Region	22.3%	2.8%	2.5%	2.8%
Country and Year Fixed Effects	Yes	Yes	Yes	Yes
Socio-Demographic and Regional Controls	Yes	Yes	Yes	Yes
Sample Size	181,128	181,128	181,128	181,128
N. Countries, Regions, Region-Years	26, 227, 844			
Bayesian Information Criterion (BIC)	721,462	714,837	714,835	714,860

Notes: Three-Level Multilevel Models (Individuals within Region-Years within Regions, **NUTS2**), with Random Slope Random Slopes for Unemployment Scarring and unstructured covariance, except for Null Model. Country and Year Fixed Effects included. Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018).

Table 4b

Summary of findings, with statistical significances and effect sizes.

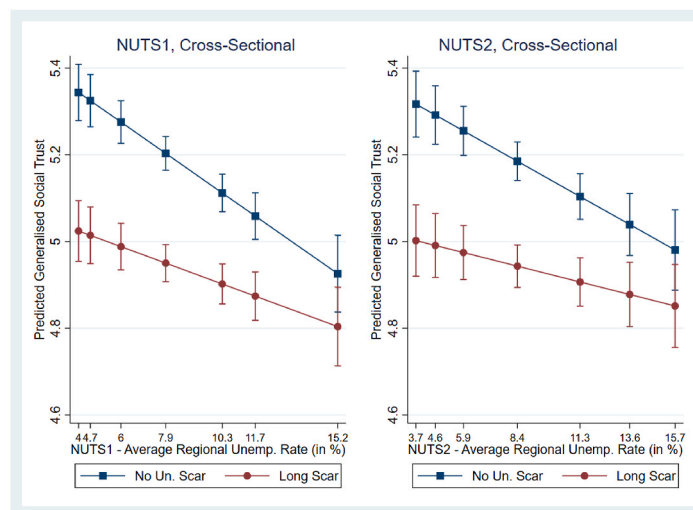
Variable(s)	Level	Region	Coefficient/Marginal Effect	Statistical Significance	Effect Size (% SD)
Unemployment Scarring (Long)	Micro	NUTS1	−0.235	Yes	−12%
		NUTS2	−0.228	Yes	−11%
Unemployment Rate, Cross-Sectional	Macro	NUTS1	−0.029	Yes	−6%
		NUTS2	−0.021	Yes	−5%
Un. Scarring x Cross-Sectional Unemployment	Macro-Micro	NUTS1	Low Unemp: 0.32	Yes	−16%
			High Unemp: 0.09	No	−6%
		NUTS2	Low Unemp: 0.31	Yes	−16%
			High Unemp: 0.08	No	−7%

Notes: Coefficients from Three-Level Multilevel Models in [Tables 3 and 4](#) reported for Micro and Macro levels, Marginal Effects at the Means reported for Macro-Micro level. **Low** and **High** unemployment refer to the 5th and 95th percentiles of the cross-sectional unemployment rate distribution, at the NUTS1 and NUTS2 levels. The marginal effects refer to the difference in predicted GST between the non-scarred and the long-scarred at the Macro-Micro level. Effect Size computed as SD change in Generalised Social Trust driven by a change in 1 SD for unemployment rate (continuous), or by the change between the non-scarred and long-scarred for unemployment scarring (categorical). Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018).

How are the cross-sectional and longitudinal components of unemployment associated with GST at the individual level? Finally, do the macro-level unemployment components mitigate or moderate the micro-level association?

Our answers contribute to research on trust in three ways.

First, the micro-level findings show that unemployment experiences are associated to lower GST, expanding the scope to up to 29 countries and 227 regions in Europe and beyond, corroborating the findings of [Laurence \(2015\)](#) and [Mewes et al. \(2021\)](#) for the UK and the US. The results clearly support the experiential strand of research ([Delhey and Newton, 2003](#); [Dinesen and Bekkers, 2017](#)). However, the results in Appendix Section 3 provide some support for the dispositional school at the individual level ([Delhey and](#)



Notes: Graph depicting Marginal Effects at the Means with 95% Cis (5th, 25th, 50th, 75th, 90th, 95th percentiles of the cross-sectional unemployment rate), for the impact of unemployment (in %) interacted with unemployment scars (None: <3 Months; Long: ≥12 Months) on Generalised Social Trust. Computed with *margins* and depicted with *marginsplot* in STATA 17, after the three-level multilevel linear regression models in Tables 3–4 (Interaction, Cross-Sectional specifications), with random slopes for unemployment scarring, and country and year FEs. Data Source: European Social Survey, Multilevel Rounds 4–9 (2008–2018).

Fig. 4. Predicted Generalised Social Trust, by Contextual Unemployment Rate interacted with Unemployment Scarring.

Newton, 2003; Dinesen and Bekkers, 2017): the origin social class is clearly associated with GST, indicating a joint role of early-life socialisation and experiences.

Secondly, we drew from research on the impact of societal dynamics on trust (Yamagishi and Yamagishi, 1994, 1998; Delhey and Newton, 2003; Ermisch and Gambetta, 2010; Fairbrother and Martin, 2013) to account for the role of contextual unemployment. At this level, the dispositional vs. experiential pattern reverses: the cross-sectional unemployment rate is associated with lower GST, while the longitudinal unemployment does not have a statistically significant role. This highlights that socialisation (Uslaner, 2002) is important for the unemployment-trust association at the collective level, with higher cross-sectional unemployment rates fostering persistent distrust across European regions, similarly to what found by Fairbrother and Martin (2013) for inequality in US states.

Third, our main finding comes from interacting the two levels: drawing from unemployment scarring research, we link together these micro- and macro-levels through the habituation (Clark, 2003; Heggebo and Elstad, 2018) and status deprivation (Giustozzi and Gangl, 2021) mechanisms. The findings support the habituation/status deprivation mechanism cross-sectionally, reinforcing the idea that socialisation (Uslaner, 2002) is crucial in shaping centrality of work and feelings of social uncertainty/conflicts. These findings therefore provide a possible synthesis point to the debate between the dispositional and experiential perspectives: if the dispositional side clearly dominates at the contextual level, the unemployment scar-trust associations show that experiences are important at the individual level. Considering them together, the extent to which unemployment experiences matter for trust depends on the structural contextual characteristics.

Thus, our answer to the call for further research by Mewes et al. (2021) is that **unemployment experiences matter for Generalised Social Trust**, but that **contextual cross-sectional unemployment plays a central role in moderating their association**, shaping it from relatively powerful (−16% SD) and statistically significant to almost null and insignificant. This pattern corroborates the findings of the emerging macro-micro research on unemployment scarring: unemployment-trust associations are stronger where structural contextual socio-economic conditions are better, similarly to political trust and participation (Azzollini, 2021; Giustozzi and Gangl, 2021).

While the lack of a combination of adversities at the macro- and micro-levels is reassuring, these findings still highlight that contextual and individual unemployment are powerfully associated with Generalised Social Trust, with the former dominating the latter where the structural unemployment rate is high. Yet, individual unemployment-trust associations are particularly powerful where the structural unemployment rate is low, with the role of a long unemployment scar on GST comparable to that of a very high unemployment rate at the contextual level on the non-scarred. This pattern reinforces the importance of the subnational context as a key reference group for social outcomes (Clark, 2003; Pittau et al., 2010; Oesch and Lipps, 2013; Eichhorn, 2014). For exemplification purposes, cross-sectional unemployment rates below the 10th percentile can be found in NUTS1 macro-regions such as Baden-Württemberg (DE1), Bavaria (DE2), and Rhineland-Palatinate (DEB) in Germany, Western Austria (AT3), the Southern Netherlands (NL4), and in the English South-East (UKJ) and South-West (UKK), as well as in NUTS2 regions including capitals as Amsterdam (NL32) in the Netherlands, Bucharest (RO32) in Romania, Budapest (HU11) in Hungary, Oslo (NO01) in Norway, and Prague (CZ01) in the Czech Republic. Therefore, we find that the associations between unemployment scars and social trust can be powerful across a range of geographical contexts in Europe. This is problematic, as the relationship between structural labour market vulnerability and social distrust may create a vicious circle, undermining social cooperation (Luhmann, 1979; Coleman, 1988; Gambetta, 1988),

exacerbating political polarisation (Uslaner, 2000), and fostering support for authoritarian forces (Newton et al., 2018). Considering these social dynamics and the centrality of trust for democracy (Putnam, 2000; Newton, 2001; Paxton, 2002, 2007; Zmerli and Newton, 2008), our findings remark that unemployment at individual and contextual levels can potentially undermine democracy, not only by fostering political abstention and distrust (Azzollini, 2021; Giustozzi and Gangl, 2021), but also by decreasing social trust.

The first key limitation of this paper is the cross-sectional nature of the European Social Survey data: although we leverage retrospective questions, we do not know exactly when the unemployment spell took place, nor do we have information on the same individuals over time as in panel data, which would further allow us to test the role of unemployment rate during early life. Due to this limitation, we cannot approach causality with an individual Fixed Effects design, which would remove the time-invariant unobserved heterogeneity at the individual level as done by Mewes et al. (2021). However, the main goal of this paper was not to demonstrate causally the scar effects of unemployment on Generalised Social Trust at the micro-level, especially considering this has been established by Laurence (2015) and by Mewes et al. (2021) with longitudinal datasets. Instead, our main goal was to explore under what contextual conditions are unemployment scars more or less strongly associated with social trust, which we have done for 107 NUTS1 and 227 NUTS2 regions across Europe and neighbouring countries, while employing country Fixed Effects to control for time-invariant country-level unobserved heterogeneity. After having examined this cross-contextual association at the discovery level, future research may inquire into this macro-micro relationship by relying on panel data, possibly approaching causality through individual FEs. However, this is restricted to countries with panels including both socio-economic and trust data (e.g., BHPS/Understanding Society in Great Britain, GSOEP in Germany, LISS in the Netherlands). Therefore, this paper establishes new correlations across different contexts to be further explored in a causal framework with nation-specific datasets. A second key limitation relates to the findings: the absence of a longitudinal relationship between contextual unemployment and trust prevents us from clarifying its direction, as unemployment may hamper trust in the long term, beyond our time scope of ten years (2008–2018).

Therefore, in the absence of a direct longitudinal association, it is possible that the cross-sectional correlation between unemployment forms and trust is driven by unobserved regional dynamics, therefore leaving the causal direction unclear. To gain an initial understanding, we examine the relationship between cross-sectional unemployment and trust over time relying on the societal growth curve technique (Fairbrother, 2014). Results in Appendix Section 4 (Subsection 4.7) show that individual trust grows over time (linear) in regions with low cross-sectional unemployment, while it remains stable in high-unemployment regions. Future research may investigate the longitudinal relationship with temporally longer datasets and expand the macro-micro framework to further socio-political outcomes, including social and cultural participation, civil society engagement, socio-political attitudes, and party choice.

In conclusion, unemployment scars are associated with lower generalised social trust at the individual level. Similarly, higher rates of contextual cross-sectional unemployment are associated with lower generalised social trust, while longitudinal unemployment changes do not play a statistically significant role. The association is particularly strong where the structural unemployment rate is low and next to null where it is high. Therefore, combining the frameworks of individual and contextual unemployment to study generalised social trust can further illuminate the relationship between social stratification and socio-political outcomes, which is crucial in contemporary Europe and beyond.

Funding

This work was supported by funding from the ERC Synergy Project DINA (Towards a System of Distributional National Accounts, Grant n. 856,455) and from a Leverhulme Trust Grant for the Leverhulme Centre of Demographic Science.

Declaration of competing interest

None.

Acknowledgements

the author thanks Delia Baldassarri, Francesco Billari, Richard Breen, Gøsta Esping-Andersen, Marianna Filandri, Brian Nolan, the editors and two anonymous reviewers for feedback on this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssresearch.2022.102787>.

References

- Allport, G.W., 1961. In: *Pattern and Growth in Personality*. Holt, Rinehart, and Winston, New York.
- Archer, J., Rhodes, V., 1993. The grief process and job loss: a cross-sectional study. *Br. J. Psychol.* 84 (3), 395–410.
- Ardito, C., Leombruni, R., Mosca, M., Giraudo, M., d'Errico, A., 2017. Scar on my heart: effects of unemployment experiences on coronary heart disease. *Int. J. Manpow.* 38 (1), 62–92.

- Arulampalam, W., Gregg, P., Gregory, M., 2001. Introduction: unemployment scarring. *Econ. J.* 111 (475), 577–584.
- Azzollini, L., 2021. The scar effects of unemployment on electoral participation: withdrawal and mobilization across European societies. *Eur. Socio Rev.* 37 (6), 1007–1026.
- Baldassarri, D., 2020. Market integration accounts for local variation in generalized altruism in a nationwide lost-letter experiment. *Proc. Natl. Acad. Sci. USA* 117 (6), 2858–2863.
- Bauer, P.C., Freitag, M., 2018. *Measuring Trust*, vol. 15. The Oxford Handbook of Social and Political Trust.
- Bell, A., Jones, K., 2015. Explaining fixed effects: random effects modeling of time-series cross-sectional and panel data. *Political Science Research and Methods* 3 (1), 133–153.
- Brand, J.E., 2015. The far-reaching impact of job loss and unemployment. *Annu. Rev. Sociol.* 41, 359–375.
- Brand, J.E., Burgard, S.A., 2008. Job displacement and social participation over the lifecourse: findings for a cohort of joiners. *Soc. Forces* 87 (1), 211–242.
- Brehm, J., Rahn, W., 1997. Individual-level evidence for the causes and consequences of social capital. *Am. J. Polit. Sci.* 999–1023.
- Bryan, M.L., Jenkins, S.P., 2016. Multilevel modelling of country effects: a cautionary tale. *Eur. Socio Rev.* 32 (1), 3–22.
- Carriero, R., Filandri, M., 2019. Support for conditional unemployment benefit in European countries: the role of income inequality. *J. Eur. Soc. Pol.* 29 (4), 498–514.
- Cattell, R.B., 2017. *The Scientific Analysis of Personality*, 1965. Routledge.
- Chadi, A., 2014. Regional unemployment and norm-induced effects on life satisfaction. *Empir. Econ.* 46 (3), 1111–1141.
- Clark, A.E., 2003. Unemployment as a social norm: psychological evidence from panel data. *J. Labor Econ.* 21 (2), 323–351.
- Clark, A.E., Oswald, A.J., 1994. Unhappiness and unemployment. *Econ. J.* 104 (424), 648–659.
- Clark, A., Georgellis, Y., Sanfey, P., 2001. Scarring: the psychological impact of past unemployment. *Economica* 68 (270), 221–241.
- Cleveland, W.S., 1979. Robust locally weighted regression and smoothing scatterplots. *J. Am. Stat. Assoc.* 74 (368), 829–836.
- Coleman, J.S., 1988. Social capital in the creation of human capital. *Am. J. Sociol.* 94, 95–120.
- Danckert, B., 2017. Facing unemployment: personal and vicarious unemployment experiences generate favourable perceptions of unemployed people. *Eur. Socio Rev.* 33 (6), 779–790.
- Deimantas, V.J., 2021. Anti-immigrant attitudes in the European union: what role for values? *Filosofija. Sociologija* 32 (4).
- Delhey, J., Newton, K., 2003. Who trusts?: the origins of social trust in seven societies. *Eur. Soc.* 5 (2), 93–137.
- Delhey, J., Newton, K., 2005. Predicting cross-national levels of social trust: global pattern or Nordic exceptionalism? *Eur. Socio Rev.* 21 (4), 311–327.
- Di Nallo, A., Oesch, D., 2021. No stratified effect of unemployment on incomes: how the market, state, and household compensate for income loss in the United Kingdom and Switzerland. *Eur. Socio Rev.* 37 (5), 783–798.
- Dinesen, P.T., Bekkers, R.H.F.P., 2017. The foundations of individuals' generalized social trust: a review. *Trust in Social Dilemmas*. Oxford University Press, pp. 77–100.
- Ehlert, M., 2012. Buffering income loss due to unemployment: family and welfare state influences on income after job loss in the United States and western Germany. *Soc. Sci. Res.* 41 (4), 843–860.
- Eichhorn, J., 2014. The (non-) effect of unemployment benefits: variations in the effect of unemployment on life-satisfaction between EU countries. *Soc. Indic. Res.* 119 (1), 389–404.
- Elff, M., Heisig, J.P., Schaeffer, M., Shikano, S., 2021. Multilevel analysis with few clusters: improving likelihood-based methods to provide unbiased estimates and accurate inference. *Br. J. Polit. Sci.* 51 (1), 412–426.
- Emmenegger, P., Marx, P., Schraff, D., 2015. Labour market disadvantage, political orientations and voting: how adverse labour market experiences translate into electoral behaviour. *Soc. Econ. Rev.* 13 (2), 189–213.
- Emmenegger, P., Marx, P., Schraff, D., 2017. Off to a bad start: unemployment and political interest during early adulthood. *J. Polit.* 79 (1), 315–328.
- Erikson, E.H., 1993. *Childhood and Society*, 1950. WW Norton & Company.
- Erikson, R., Goldthorpe, J.H., Portocarero, L., 1979. Intergenerational class mobility in three Western European societies: england, France and Sweden. *Br. J. Sociol.* 30 (4), 415–441.
- Ermisch, J., Gambetta, D., 2010. Do strong family ties inhibit trust? *J. Econ. Behav. Organ.* 75 (3), 365–376.
- European Social Survey, 2008, 2010, 2012, 2014, 2016, 2018 Rounds 4–9. Multilevel Dataset. NSD - Norwegian Centre for Research Data, Norway – Data Archive and distributor of ESS data for ESS ERIC.
- European Social Survey Questionnaire [English], Round 9: http://www.europeansocialsurvey.org/docs/round9/fieldwork/source/ESS9_source_questionnaires.pdf.
- Fairbrother, M., 2014. Two multilevel modeling techniques for analyzing comparative longitudinal survey datasets. *Political Science Research and Methods* 2 (1), 119–140.
- Fairbrother, M., Martin, I.W., 2013. Does inequality erode social trust? Results from multilevel models of US states and counties. *Soc. Sci. Res.* 42 (2), 347–360.
- Freitag, M., Trauttmüller, R., 2009. Spheres of trust: an empirical analysis of the foundations of particularised and generalised trust. *Eur. J. Polit. Res.* 48 (6), 782–803.
- Gambetta, D., 1988. Can we trust trust (Blackwell). *Trust: Making and breaking cooperative relations* 13, 213–237.
- Gangl, M., 2006. Scar effects of unemployment: an assessment of institutional complementarities. *Am. Socio. Rev.* 71 (6), 986–1013.
- Garson, G.D., 2019. *Multilevel Modeling: Applications in STATA®, IBM® SPSS®, SAS®, R, & HLM™*. Sage Publications.
- Gelman, A., Hill, J., 2006. *Data Analysis Using Regression and Multilevel/hierarchical Models*. Cambridge university press.
- Giessele, M., Schmidt-Catran, A.W., 2019. Getting the within estimator of cross-level interactions in multilevel models with pooled cross-sections: why country dummies (sometimes) do not do the job. *Socio. Methodol.* 49 (1), 190–219.
- Giustozzi, C., Gangl, M., 2021. Unemployment and political trust across 24 Western democracies: evidence on a welfare state paradox. *Acta Sociol.* 64 (3), 255–273.
- Glanville, J.L., Paxton, P., 2007. How do we learn to trust? A confirmatory tetrad analysis of the sources of generalised trust. *Soc. Psychol. Q.* 70 (3), 230–242.
- Glanville, J.L., Paxton, P., Wang, Y., 2016. Social capital and generosity: a multilevel analysis. *Nonprofit Voluntary Sect. Q.* 45 (3), 526–547.
- Goldsmith, A.H., Veum, J.R., Darity Jr., W., 1997. The impact of psychological and human capital on wages. *Econ. Inq.* 35 (4), 815–829.
- Gonálons-Pons, P., Gangl, M., 2021. Marriage and masculinity: male-breadwinner culture, unemployment, and separation risk in 29 countries. *Am. Socio. Rev.*, 00031224211012442.
- Granovetter, M.S., 1973. The strength of weak ties. *Am. J. Sociol.* 78 (6), 1360–1380.
- Hardin, R., 1993. The street-level epistemology of trust. *Polit. Soc.* 21 (4), 505–529.
- Hardin, R., Offe, C., 1999. *Democracy and Trust*. Cambridge University Press.
- Heggebo, K., Elstad, J.L., 2018. Is it easier to be unemployed when the experience is more widely shared? Effects of unemployment on self-rated health in 25 European countries with diverging macroeconomic conditions. *Eur. Socio Rev.* 34 (1), 22–39.
- Heisig, J.P., Schaeffer, M., 2019. Why you should always include a random slope for the lower-level variable involved in a cross-level interaction. *Eur. Socio Rev.* 35 (2), 258–279.
- Hill, J.M.M., 1977. *The Social and Psychological Impact of Unemployment: a Pilot Study of JMM Hill*. Tavistock Institute of Human Relations.
- Jann, B., 2019. ISCOGEN: Stata Module to Translate ISCO Codes.
- Knabe, A., Rätzl, S., 2011. Scarring or scaring? The psychological impact of past unemployment and future unemployment risk. *Economica* 78 (310), 283–293.
- Knack, S., Keefer, P., 1997. Does social capital have an economic payoff? A cross-country investigation. *Q. J. Econ.* 112 (4), 1251–1288.
- Kohn, M.L., Schooler, C., 1982. Job conditions and personality: a longitudinal assessment of their reciprocal effects. *Am. J. Sociol.* 87 (6), 1257–1286.
- Korpi, W., 1991. Political and economic explanations for unemployment: a cross-national and long-term analysis. *Br. J. Polit. Sci.* 21 (3), 315–348.
- Laurence, J., 2015. (Dis)placing trust: the long-term effects of job displacement on generalised trust over the adult lifecourse. *Soc. Sci. Res.* 50, 46–59.
- Levi, M., Stoker, L., 2000. Political trust and trustworthiness. *Annu. Rev. Polit. Sci.* 3 (1), 475–507.
- Lockwood, B., 1991. Information externalities in the labour market and the duration of unemployment. *Rev. Econ. Stud.* 58 (4), 733–753.
- Lucas, R.E., Clark, A.E., Georgellis, Y., Diener, E., 2004. Unemployment alters the set point for life satisfaction. *Psychol. Sci.* 15 (1), 8–13.
- Luhmann, N., 1979. *Trust and Power*. John Wiley & Sons.

- Maas, C.J., Hox, J.J., 2004. Robustness issues in multilevel regression analysis. *Stat. Neerl.* 58 (2), 127–137.
- Marx, P., Nguyen, C., 2016. Are the unemployed less politically involved? A comparative study of internal political efficacy. *Eur. Socio Rev.* 32 (5), 634–648.
- Mewes, J., Fairbrother, M., Giordano, G.N., Wu, C., Wilkes, R., 2021. Experiences matter: a longitudinal study of individual-level sources of declining social trust in the United States. *Soc. Sci. Res.* 95, 102537.
- Misztal, B.A., 2001. Trust and cooperation: the democratic public sphere. *J. Sociol.* 37 (4), 371–386.
- Mooi-Reci, I., Ganzeboom, H.B., 2015. Unemployment scarring by gender: human capital depreciation or stigmatization? Longitudinal evidence from The Netherlands, 1980–2000. *Soc. Sci. Res.* 52, 642–658.
- Mousteri, V., Daly, M., Delaney, L., 2018. The scarring effect of unemployment on psychological well-being across Europe. *Soc. Sci. Res.* 72, 146–169.
- Musca, S.C., Kamiejski, R., Nugier, A., Méot, A., Er-Rafiy, A., Brauer, M., 2011. Data with hierarchical structure: impact of intraclass correlation and sample size on type-I error. *Front. Psychol.* 2, 74.
- Nannestad, P., 2008. What have we learned about generalised trust, if anything? *Annu. Rev. Polit. Sci.* 11, 413–436.
- Newton, K., 2001. Trust, social capital, civil society, and democracy. *Int. Polit. Sci. Rev.* 22 (2), 201–214.
- Newton, K., Stolle, D., Zmerli, S., 2018. Social and political trust. *The Oxford Handbook of Social and Political Trust* 37, 961–976.
- Nguyen, C., 2017. Labour market insecurity and generalised trust in welfare state context. *Eur. Socio Rev.* 33 (2), 225–239.
- Oesch, D., Lipps, O., 2013. Does unemployment hurt less if there is more of it around? A panel analysis of life satisfaction in Germany and Switzerland. *Eur. Socio Rev.* 29 (5), 955–967.
- Österman, M., Lindgren, K.O., 2021. Does high unemployment mobilize the unemployed? Evidence using Swedish register data. *Soc. Econ. Rev.* In press.
- Paul, K.L., Moser, K., 2009. Unemployment impairs mental health: meta-analyses. *J. Vocat. Behav.* 74 (3), 264–282.
- Paxton, P., 2002. Social capital and democracy: an interdependent relationship. *Am. Socio. Rev.* 254–277.
- Paxton, P., 2007. Association memberships and generalised trust: a multilevel model across 31 countries. *Soc. Forces* 86 (1), 47–76.
- Paxton, P., Gnanville, J.L., 2015. Is trust rigid or malleable? A laboratory experiment. *Soc. Psychol. Q.* 78 (2), 194–204.
- Pearlman, J., 2015. The consequences of job displacement for health: moderating influences of economic conditions and educational attainment. *Soc. Sci. Res.* 52, 570–587.
- Perrucci, R., Perrucci, C.C., 2009. *America at Risk: the Crisis of Hope, Trust, and Caring*. Rowman & Littlefield Publishers.
- Pittau, M.G., Zelli, R., Gelman, A., 2010. Economic disparities and life satisfaction in European regions. *Soc. Indic. Res.* 96 (2), 339–361.
- Putnam, R.D., 2000. Bowling alone: America's declining social capital. In: *Culture and Politics*. Palgrave Macmillan, New York, pp. 223–234.
- Rabe-Hesketh, S., Skrondal, A., 2008. *Multilevel and Longitudinal Modeling Using Stata*. STATA press.
- Radcliff, B., 1992. The welfare state, turnout, and the economy: a comparative analysis. *Am. Polit. Sci. Rev.* 86 (2), 444–454.
- Raftery, A.E., 1995. Bayesian model selection in social research. *Socio. Methodol.* 111–163.
- Raudenbush, S.W., Bryk, A.S., 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*, vol. 1. sage.
- Reeskens, T., Hooghe, M., 2008. Cross-cultural measurement equivalence of generalised trust. Evidence from the European Social Survey (2002 and 2004). *Soc. Indic. Res.* 85 (3), 515–532.
- Rose, D., Harrison, E., 2007. The European socio-economic classification: a new social class schema for comparative European research. *Eur. Soc.* 9 (3), 459–490.
- Rosenberg, M., 1956. Misanthropy and political ideology. *Am. Socio. Rev.* 21 (6), 690–695.
- Rosenberg, M., 1957. Misanthropy and attitudes toward international affairs. *Conflict Resolut.* 1 (4), 340–345.
- Rosenstone, S.J., 1982. Economic adversity and voter turnout. *Am. J. Polit. Sci.* 25–46.
- Rothstein, B., Stolle, D., 2008. The state and social capital: an institutional theory of generalized trust. *Comp. Polit.* 40 (4), 441–459.
- Rothstein, B., Uslaner, E.M., 2005. All for all: equality, corruption, and social trust. *World Polit.* 58 (1), 41–72.
- Schmidt-Catran, A.W., Fairbrother, M., 2016. The random effects in multilevel models: getting them wrong and getting them right. *Eur. Socio Rev.* 32 (1), 23–38.
- Simmel, G., 1950, 1908. *The Sociology of Georg Simmel*, vol. 92892. Simon and Schuster. Translated and Edited by Wolf, K.
- Stegmuller, D., 2013. How many countries for multilevel modeling? A comparison of frequentist and Bayesian approaches. *Am. J. Polit. Sci.* 57 (3), 748–761.
- Stokes, G., Cochrane, R., 1984. A study of the psychological effects of redundancy and unemployment. *J. Occup. Psychol.* 57 (4), 309–322.
- Turner, J.B., 1995. Economic context and the health effects of unemployment. *J. Health Soc. Behav.* 213–229.
- Uslaner, E.M., 1999. Democracy and social capital. *Democracy and trust* 121–150.
- Uslaner, E.M., 2000. Producing and consuming trust. *Polit. Sci. Q.* 115 (4), 569–590.
- Uslaner, E.M., 2002. *The Moral Foundations of Trust*. Cambridge University Press.
- Uslaner, E.M., 2017. Political trust, corruption, and inequality. In: *Handbook on Political Trust*. Edward Elgar Publishing.
- Uslaner, E.M. (Ed.), 2018. *The Oxford Handbook of Social and Political Trust*. Oxford University Press.
- West, B.T., Welch, K.B., Galecki, A.T., 2006. *Linear Mixed Models: a Practical Guide Using Statistical Software*. Chapman and Hall/CRC.
- Wu, C., 2020. How does gun violence affect Americans' trust in each other? *Soc. Sci. Res.* 91, 102449.
- Yamagishi, T., Yamagishi, M., 1994. Trust and commitment in the United States and Japan. *Motiv. Emot.* 18 (2), 129–166.
- Yamagishi, T., Cook, K.S., Watabe, M., 1998. Uncertainty, trust, and commitment formation in the United States and Japan. *AJSv104p.165 Am. J. Sociol.* 104 (1), 194.
- Zmerli, S., Newton, K., 2007. Trust in People, Confidence in Political Institutions, and Satisfaction with Democracy. Routledge, pp. 59–89.
- Zmerli, S., Newton, K., 2008. Social trust and attitudes toward democracy. *Publ. Opin. Q.* 72 (4), 706–724 (Dataset and Questionnaire).