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Master's thesis

The interplay between employment precariousness and education: Their relationship with political alienation in a multilevel context

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Abstract

In many advanced democracies, three large developments are occurring: political alienation seems to be increasing, precarious employment is expanding, and education is of growing importance. This paper connects these trends by exploring the interplay between multidimensional employment precariousness and educational level, and their effects on political alienation. As the institutional context is crucial for all of these concepts, their effects are investigated in a multilevel model to be able to differentiate between individual-level and country-level effects. Data from the European Social Survey Round 5 is used. Results suggest that generally people who experience more employment precariousness are more alienated from politics. In addition, the importance of considering educational level is underlined as its effect on political alienation is partly explained by employment precariousness. The effect of employment precariousness on political alienation did not seem to differ between educational groups, nor did it show significant differences between countries. The effect of education, however, showed considerable variation per country. These results highlight the relevance of education and employment with regard to political attitudes and establish the idea that these concepts should be analysed collectively, taking into account country-context.

Introduction

Recent decades have shown indications of increasing dissatisfaction with and distrust in politics in most European developed democracies. The growth of populist parties centring around an anti-establishment rationale (Halikiopoulou, 2018), declining confidence and trust in politicians (Pharr et al., 2000; Foster & Frieden, 2017), and decreasing voter turnout (Gray & Caul, 2000; Kostelka & Blais, 2021) are all developments pointing into a similar direction: people in Europe are becoming increasingly alienated from mainstream politics. Not only does this undermine the workings of democracy, as people feel unrepresented, unheard and may refrain from political participation altogether, resulting in less inclusive institutions (Murer, 2018). It may also result in increased political violence, bringing about social unrest (Murer, 2018).

During the same period of increasing political alienation, from around the 1970s till now, employment has become more precarious in Europe (International Labour Organisation [ILO], 2015; Kalleberg, 2009). Employment precariousness can be shortly defined as the extent to which employment is uncertain, unpredictable, and risky from the point of view of the worker (Kalleberg, 2009). The concept is broad and is generally believed to include different aspects such as wages, working hours and schedule, temporality of contracts, flexibility, rights attached to the job, means for collective bargaining and training or mobility opportunities (Standing, 2011). In other words, the concept is multidimensional (Vives et al., 2010; Antonucci et al., 2021). Mainly because of globalisation and a neoliberal political agenda focused on competition and flexibility, much of the employment in Europe has developed into a more precarious form (Kalleberg, 2009; Standing, 2011). The occurrence of temporary contracts has increased, working conditions and employee benefits have become of less quality and union memberships have declined, to name only a few examples of this development (ILO, 2015a; Organisation for Economic Co-operation and Development,

2018). Although employment precariousness most strongly affects the lower skilled and lower educated segment of the labour market, it pervades the labour market as a whole and seems to become a main aspect of the system we live in. “Precarity capitalism” as some may call it (Azmanova, 2020).

The trends of increasing employment precariousness and increasing political alienation have been linked to each other by several authors (Standing, 2011; Iversen & Soskice, 2020; Azmanova, 2020). Employment precariousness can lead to political alienation because people in precarious work may hold political institutions (partly) accountable for their situation, as quality and conditions of employment are largely influenced by the dominant political agenda. Furthermore, employment precariousness can lead to a decline in social status, or social marginalisation, again turning people to become dissatisfied or disconnected with political institutions (Gidron & Hall, 2020). These mechanisms may suggest a general relationship between employment precariousness and political alienation in Europe, which will be investigated in this paper. However, literature has previously established the critical relevance of education and institutional context for both precarity and political alienation, raising the question of how these factors are intertwined.

Evidently, education influences most factors concerning employment as educational credentials serve as a fundamental pathway towards employment. Educational level may therefore play a key role in determining the level of employment precariousness. Furthermore, educational level is known to be related to political alienation as lower educated people are generally more politically alienated than higher educated people (Foster & Frieden, 2017; Gesthuizen, 2006; Torcal & Montero, 2006; Van der Meer, 2010). These educational differences have been explained before by theories concerning socialisation, skills, and networks, however, this paper investigates an alternative pathway to explain them. Employment precariousness may serve as an intermediary factor, in the sense that a lower

educational level often results into more precarious employment, which may subsequently lead to stronger feelings of political alienation. In addition, whilst education is acquiring an increasingly central role in developed democracies and becoming a crucial social dividing line (Bovens & Wille, 2010; Van Noord et al., 2019), it could be expected that employment precariousness relates to political alienation differently for lower and higher educated people. Especially since many authors describe how precarity is becoming majoritarian (Azmanova, 2020; Kalleberg, 2011), i.e., not just affecting specific groups such as the lower educated in society but practically everyone, the question arises if it is related to political alienation similarly or differently between educational groups.

For all three factors, political alienation, employment precariousness, and education, the institutional context is relevant in numerous ways. Literature has connected such macro-level differences to variation in political alienation (Criado & Herreros, 2007; Iversen & Soskice, 2020; Lubbers et al., 2002) and employment precariousness (Duell, 2004; Krestos & Livanos, 2016). This is not surprising. National institutions, policies, and legislations shape to a large extent the forms and occurrence of employment precariousness (Padrosa et al., 2021b). The macroeconomic circumstances in a country accordingly shape and are shaped by these institutions. Norms that follow from these institutions and existing social safety nets, for instance, influence how precarious employment is perceived and experienced (McKay et al., 2012). In a similar way, institutions shape the national political environment and therefore influence citizen's feelings of political alienation. For example, different party systems and levels of corruption impact political alienation dissimilarly (Van der Meer, 2010). Lastly, educational systems and the number of higher educated people in a country vary, which could again bring about different effects. Because of these reasons, it is crucial to consider the explained effects in a multilevel context, in which macro effects can be distinguished.

Taking everything together, this paper aims to investigate the interplay between employment precariousness, education, and political alienation in a multilevel context representing various institutional environments. In this way, three major developments occurring in many developed democracies are theoretically connected and their relationships empirically investigated, that is, increasing political alienation, expanding employment precariousness, and the growing importance of education. To investigate these relationships in Europe, a multilevel analysis is conducted using data from the European Social Survey (2010) and the following research question will be answered: What is the relationship between multidimensional employment precariousness and political alienation in Europe and what is the role of education in this relationship?

Theoretical Background

Political Alienation

Political alienation can be shortly defined as lasting feelings of estrangement from political institutions (Citrin et al., 1975). However, the definition that is used in existing literature takes different forms. A main distinction can be made between attitudinal aspects (also sometimes referred to as values) and behavioural aspects of political alienation (Iversen & Soskice, 2020). The former includes elements such as trust in political institutions and satisfaction with democracy, whereas the latter refers to behaviours like voting and political participation. This paper focuses on attitudinal aspects of political alienation, as these attitudes are often antecedents of political behaviours. For example, feelings of political alienation have been shown to lead to populist voting behaviour (Iversen & Soskice, 2020; Werts et al., 2007). Furthermore, behavioural forms like voting depend to a large extent on the political party system that is in place in a country (Iversen & Soskice, 2020). Although it is important to investigate when political attitudes translate into behaviour and how this is

influenced by different party systems, this will not be developed further in this paper as it is not the main aim.

Despite the fact that some studies investigating very large time frames have not found a general increase in feelings of political alienation (Van de Walle et al., 2008; Valgarðsson & Devine, 2021), many others clearly show increases of political alienation in Europe since the 1970s. Pharr et al. (2000) show how confidence in politicians, political parties and other political institutions have declined in most European countries in the 25 years before the start of the twenty-first century. Others describe the decline in political trust after the 2009 Euro crisis (Arpino & Obydenkova, 2020; Foster & Frieden, 2017). The fact that a general decline over, say, 50 years is not detected may be partly due to lacking data availability (Van de Walle et al., 2008). Moreover, habituation and system justification effects complicate studying measures in very large time frames. Because people will continuously form new baseline levels on which they base their political trust and satisfaction, these levels may not be comparable anymore after some decades (Goubin, 2020). The increase of support for right-wing populist parties and the decline of voter turnout since around the 1970s (Halikiopoulou, 2018; Gray & Caul, 2000) has been well documented, however, and clearly indicate increased political alienation all over Europe. These findings combined with the findings that indicate decreased confidence in political institutions from the authors mentioned above, strongly suggest that people in Europe are increasingly dissatisfied and distrustful of mainstream politics.

The connection between developments in political alienation and economic circumstances is apparent. Upsurges in political alienation are often preceded by economic decline or recession (Arpino & Obydenkova, 2020; Foster & Frieden, 2017; Quaranta & Marini, 2016; Van Erkel & Van der Meer, 2016). People's trust in political institutions is partly based on their individual evaluation of economic policy and performance (Goubin,

2020). This emphasises the relevance of national context. Given these links, it is striking that the rise of precarious employment, an economic development that has caused major changes in labour markets in recent decades and has impacted many individuals' economic situation, has not yet been carefully examined in relation to political alienation in a multilevel context. Below, definitions and trends in employment precariousness will be discussed after which the relationship between employment precariousness and political alienation is further clarified.

Employment precariousness

Employment precariousness is an umbrella term encompassing different aspects which together represent the insecurity, conditions, and quality of employment (Kalleberg, 2011; Standing, 2011). In the book of Standing (2011), which lead to an increased influx of research into the topic, the concept is defined as consisting of seven aspects. These include a multitude of components, such as income security, opportunities for upward mobility, opportunities for training and skill development, flexibility of working times, possibilities for representation and collective bargaining, rules and regulations regarding illness and holidays, protection against arbitrary dismissal and opportunities for full-time employment. Reports covering labour market changes across Europe all describe expanding precariousness since around the 1970s (ILO, 2015a; Kalleberg, 2011). Globalisation integrating the world's economies, an increasingly dominant neoliberal political agenda, and technological advancement exacerbated the competition amongst companies, forcing them to implement flexibility and cost-cutting measures (Kalleberg, 2000; Kalleberg, 2009). These included, for instance, increased use of temporary contracts, decreased coverage of employment benefits and minimising the number of positions in the vertical hierarchy of a company (Organisation for Economic Co-operation and Development [OECD], 2018; Standing, 2011). These developments contributed to the expansion of employment precariousness, which is exemplified by different trends.

The share of temporary workers with generally worse working conditions increased from an approximate average of 9 percent in 1987 compared to 14.5 percent in 2006 in Europe (ILO, 2016). A declining trade union membership rate in most countries in Europe since 1975 signifies that less workers have a collective voice and their interests defended (Ebbinghaus & Visser, 1999; Vandaele, 2019). More recently, the average proportion of unionised wage-earners in Europe declined from more than 25% in 2000 to 21.4% in 2016 (Vandaele, 2019). Heyes (2011) observes, although to varying extents in different countries, a general trend of worsened employment protection and reduced benefit entitlements in Europe between 1990 and 2008. The recent growth of platform work is another development characterising the expansion of employment characterised by poorer working conditions (Florisson & Mandl, 2018).

Despite the agreement amongst scholars about the increasing trend and the multidimensionality of employment precariousness (Antonucci et al., 2021; Kalleberg, 2011; Puig-Barrachina et al., 2014; Standing, 2011), there is no unison about exactly how precarious employment should be conceptualised and which dimensions it comprises. Although most conceptualisations encompass aspects comparable to those that Standing (2011) proposed, various interpretations exist and only few have been comprehensively developed in theory and method. Antonucci et al. (2021) conceptualised employment precariousness as a multidimensional construct capturing subjective labour market insecurity, consisting of the dimensions “precarity of tenure” and “precarity at work”. The first dimension refers to subjective insecurity in contract length and the second to subjective insecurity in working conditions. This is distinct to the objective conceptualisation of employment precariousness by others (Padrosa et al., 2021a; Vives et al., 2010). Because subjective experiences may be influenced by factors other than the characteristics of the employment relationship (Burgess & Campbell, 1998) and since this study essentially

addresses the objective trend of expanding employment precariousness, an objective conceptualisation is used.

Moreover, there is only one conceptualisation that has been translated into a measure of multidimensional employment precariousness based on a comprehensive theoretical and methodological basis that has been validated in different samples: the Employment Precariousness Scale (EPRES, Vives et al., 2010). Because of its advanced development, this study uses EPRES and its variations as a basis to conceptualise and measure employment precariousness. This is explained in more detail in the methods section.

Employment precariousness and political alienation

Generally, it is evident that the overall economic circumstances in a country influence citizens' feelings of political alienation. For instance, the extent to which a country performs well on the macroeconomic spectrum relates strongly with citizens' political trust (Van Erkel & Van Der Meer, 2016). Furthermore, perceptions of the unemployment rate and increasing prices in society influence people's political alienation (Macke, 1979). Because of increasing employment precariousness and diversity in labour relationships over the past decades, research interest into individuals' economic position and political alienation has grown. In particular, people's labour market position and employment status have been connected to feelings of political alienation.

For example, higher subjective job insecurity has been linked to lower trust in political institutions and lower satisfaction with democracy (Wroe, 2013), stronger support for right-wing populism (Mughan et al., 2003) and less identification with political parties in general (Wilson & Ebert, 2013). Furthermore, Lambert et al. (2019) connect more insecurity in work schedules to lower institutional trust. Moreover, being unemployed is consistently related to lower trust in political institutions (Giustozzi & Gangl, 2021; Van Erkel & Van Der Meer, 2016). These studies point towards a relationship between employment precariousness

and political alienation, but they do not specifically focus on the concept of employment precariousness and therefore do not apply the concept in a multidimensional way. They merely test single items, not representing the fact that the experience of employment precariousness is a product of multiple aspects of the employment relationship which may or may not occur simultaneously (Campbell & Burgess, 2018). This paper will recognise the multidimensional nature of employment precariousness to be able to capture the relationship between all precarity's dimensions together and political alienation.

There are multiple reasons why employment precariousness may lead to political alienation. One of the main explanations concerns accountability, namely that citizens hold politics (at least partly) accountable for their situation. People tend to evaluate political institutions based on their performance and policies they produce and assign them responsibility for the socioeconomic developments in a country (Easton, 1975; Iyengar, 1989; Goubin, 2020). Partly this evaluation may be based on people's individual situation (Baird & Wolak, 2021), i.e., their employment precariousness. These evaluations and accountability mechanisms are consequently reflected in people's political trust, satisfaction and voting behaviour (Duch & Stevenson, 2006; De Blok, 2020).

Another pathway that describes the link between employment precariousness and political trust is via subjective social status. As increasing employment precariousness introduces more socioeconomic insecurity into people's lives, they become more socially marginalised, which may lower their feelings of subjective social status (Gidron & Hall, 2017; Gidron & Hall, 2020; Antonicci, 2021). Lower social status can turn people to become dissatisfied or disconnected with mainstream political institutions, as they do not feel they are respected or recognised members of society (Gidron & Hall, 2020; Noordzij et al., 2019). Thus, not only can discontent about people's employment precariousness directly translate

into political alienation because of assigned responsibility, increased alienation from political institutions may also be inflicted through depressed feelings of social status.

The role of education

It is well known that educational level is strongly related to political alienation (Van Elsas, 2015). For instance, lower educated people have been shown to be less trustful of political institutions, less politically engaged and less likely to vote than higher educated people (Foster & Frieden, 2015; Schoon & Cheng, 2011; Kostelka & Blais, 2021; Van de Werfhorst, 2017). The weaker political interest, participation and trust of lower educated people has often been explained by skills, socialisation, and network theories (Brady et al., 1995; Gesthuizen, 2006). Essentially, the argument goes that because they have had less schooling and have less highly educated networks, lower educated people are less socialised, socially committed, and developed less cognitive abilities and other skills related to the interest in, evaluation of and participation in political institutions, resulting in stronger political alienation. This paper, however, regards employment precariousness as a possible explaining factor concerning the educational differences in political alienation, based on the strong connection between education and employment.

Education determines to a large extent what kind of job someone might end up doing. There are large educational differences concerning type of job, employment conditions, pay and opportunities people have (Shavit & Muller, 1998). Consequently, one's educational level may to a large extent determine the level of employment precariousness one is subject to. This is exemplified by the fact that lower educated and lower skilled jobs are generally more precarious (Greenstein, 2020; Kalleberg, 2011; Standing 2011). Because of the theoretical links explained above between precarious employment and political alienation, it may be expected that a lower education which may translate into stronger employment precariousness, can subsequently translate into stronger feelings of political alienation.

Lastly, the relationship between employment precariousness and political alienation may be different for lower and higher educated people. The societal divide that education is increasingly creating, and the repercussions that follow make three different scenarios distinguishable, which are all plausible. Firstly, employment precariousness may translate to a lesser extent into political alienation for lower educated people than for higher educated people. Partly because of the central role of education and the meritocratic ideal (i.e., people are rewarded based on their talents and efforts) which is dominant in society, lower educated people generally have a lower social status (Van Noord et al., 2019). Because status decline is one of the pathways how precarity may lead to political alienation, employment precariousness may translate into political alienation less for lower educated than for higher educated as lower educated have less status to lose. The meritocratic thought that legitimises education-based inequalities, alongside processes of system justification, could drive lower educated people to expect their jobs to be precarious (Goubin, 2020; Van Noord et al., 2019). On the contrary, higher educated people who find themselves in a precarious job may be less accepting of this because they may be less expecting of it and find it somewhat illegitimate. Thus, both because of status decline processes and the dominant meritocratic ideal, the relationship between employment precariousness and political alienation may be stronger for higher educated than for lower educated people.

Another plausible scenario is the exact opposite. The vast majority of positions in political institutions is filled by people with a higher education, causing an overrepresentation of higher educated people in politics and an underrepresentation of lower educated people (Bovens & Wille, 2010; Carnes, 2012). This may work as a buffering effect for the higher educated, as representation has been shown to decrease political alienation (Mayne & Hakhverdian, 2017). In other words, because the higher educated are well represented in political institutions, their employment precariousness may not translate into political

alienation as much as it will for the underrepresented lower educated. Additionally, people who possess a higher educational degree are more enabled to benefit from the knowledge economy (Iverson & Soskice, 2020). Because of their higher education, they have more flexibility to find other jobs, more opportunities for development and more opportunities for upward mobility (ILO, 2015b). This can give them a sense of security for the future, even when they are in precarious employment at a certain moment. Lower educated people will not benefit from this, as their educational level does not provide them with the same opportunities in these so-called knowledge economies. Based on these mechanisms, the effect of employment precariousness on political alienation may be stronger for the lower educated.

Lastly, abovementioned mechanisms and their resulting effects may cancel each other out, which could lead to finding no or only slight differences in the relationship between employment precariousness and political alienation for lower and higher educated people.

In sum

Taking everything together, the aim of this paper is to investigate the relationships between multidimensional employment precariousness, political alienation and education whilst considering institutional diversity on the national level. Based on the mechanisms explained above, the following hypotheses will be tested: H1: employment precariousness is positively related to political alienation; H2: educational level is negatively related to political alienation; H3: employment precariousness mediates the relationship between educational level and political alienation. Several conflicting expectations could be articulated regarding a moderation effect in which educational level may influence political alienation via employment precariousness. Therefore, this will be examined without a directional hypothesis. Considering the national institutional diversity, it will be tested whether H4: the effects of employment precariousness on political alienation are different between countries; and H5: the effects of education on political alienation are different between countries. By

conducting these analyses this paper will contribute to the literature investigating whether and how employment precariousness and educational level, separately and concurrently, contribute to people's feelings of political alienation in Europe overall, and if there are differences between countries. This will deepen our understanding of how education and precarity in work may influence people's trust and satisfaction in politics and democracy, and can therefore provide insights into how labour market, education, and employer policies may have an influence on the workings of democracy.

Methods

Design & participants

The data used for the analysis is openly available data from the European Social Survey (2010) round 5. This is a cross-sectional survey that is conducted in 28 countries and includes people aged over 15 years old who are selected through strict random probability sampling. The survey was conducted by means of face-to-face interviews and had a total number of 52458 respondents. The current analysis focuses on working people, excluding respondents without an employment contract, self-employed, and people in a family business, because the measure of employment precariousness was developed for such a sample (following Vives et al., 2011 and Padrosa et al., 2020a, see the measurement section). Furthermore, people aged 65 years old or above were excluded (following Padrosa et al., 2020a). This resulted in a sample of 18750 people distributed over 27 countries.

Measurement

As mentioned before, this paper focuses on the attitudinal aspect of political alienation. Therefore, the concept is represented by measures tapping into peoples' trust in political institutions and satisfaction with democracy, which is a common way to operationalise political alienation (Gidron & Hall, 2020). Six items were used, five of them representing trust in political institutions and one of them about satisfaction with democracy.

For the political trust items respondents were asked how much they personally trusted the following institutions: the country's parliament, the legal system, the police, politicians, and political parties on an 11-point scale from "no trust at all" to "complete trust". For satisfaction with democracy, respondents answered a similar 11-point scale on how satisfied they are with the workings of democracy in their country, from "not satisfied at all" to "completely satisfied". The outcome variable political alienation is computed as the average of all 6 items. The scale has good reliability based on a Cronbach's alpha of $\alpha = .91$.

Employment precariousness was operationalised by constructing a multidimensional measure using the available items in the European Social Survey round 5 that resembles the previously developed EPRES configurations (Padrosa et al., 2020a, Puig-Barrachina et al., 2014, Vives et al., 2010) as closely as possible. The EPRES and its variations have been developed to investigate what impact employment precariousness has on workers' health (Vives et al., 2010), and have been validated in different institutional contexts (Padrosa, et al., 2021b). Originally, the construct was developed in a long-term research project that conducted an extensive review of literature, interviews with experts on the topic and focus group discussions with workers and trade union representatives (Vives et al., 2010). This original version consists of six dimensions: temporariness (contract duration), disempowerment (level of negotiation of employment conditions), vulnerability (defencelessness against authoritarian treatment), low wages, workplace rights and the power to exercise them. The dimensions uncertainty of working times and opportunities for training have been added by more recent papers for theoretical or methodological reasons, (Padrosa et al., 2021a; Puig-Barrachina et al., 2014), resulting in eight possible dimensions within employment precariousness. Because of its strong theoretical basis and methodological strengths, the current paper has used EPRES and its variations as a basis to construct an employment precariousness measure.

For five of the eight dimensions mentioned above, items were available. The dimension temporariness combines an item indicating whether people have a permanent contract, temporary contract of one year or more or a temporary contract of less than a year, with a computed variable indicating how long a respondent has been working at the company. The disempowerment dimension taps into whether people can decide the time they start and finish work and whether meetings between representatives of the employer and employee to discuss working conditions and practices are held. The dimension flextimes is represented by an item indicating whether and how often the respondent must work overtime at short notice combined with an item about whether the respondent would want to work more or less hours. The training dimension indicates whether respondents have taken any training for their work in the last 12 months and whether that was paid for by their employer. The wages dimension consists of two computed variables giving peoples relative gross monthly wage and gross hourly wage, based on country medians. Sticking to the EPRES computation method, the dimension scores were computed as the averages of the items in the dimension transformed into a 0-100 scale (Vives et al., 2010; Padrosa et al., 2021a). The employment precariousness score is calculated as the mean of all 5 dimension-scores, and country-mean centring this number to improve interpretability. In this way, a positive score of a respondent represents more employment precariousness than the mean employment precariousness in the respondent's country of residence.

A complete description of the computation of employment precariousness and its similarities to other EPRES versions can be found in the in Appendix. Since not all dimensions are included in the measure used in this study, and because of differences in used items compared to the existing EPRES versions, it is important to compare their reliability statistics. Both studies by Vives et al. (2010; 2015) reported high Cronbach alpha's of the total scale, respectively $\alpha = .86$ and $\alpha = .82$. For the measure used here, Cronbach's alpha was

very low at α = .36. On the one hand, this is surprising considering that the measure was constructed with the goal to resemble the previously developed EPRES configurations as much as possible and therefore has considerable overlap with them (see Appendix). On the other hand, it is not surprising that the deviations of the measure, due to a lack of suitable items, undermined reliability. It may be that unincluded dimensions regarding vulnerability and rights play an important role in the measure and would have resulted in a larger alpha value if they were included. Looking into the reliability statistics in more detail reveals that the flextimes dimension especially contributes to the low Cronbach's alpha. If this dimension is dropped, Cronbach's alpha of the total scale increases to α = .48. The large increase may be explained because the flextimes dimension was least well based on the validated EPRES versions. Because the operationalisations with and without the flextimes dimension are both not ideal, it was chosen to perform the main analysis with the initial version that includes flextimes, and to rerun the models with the version excluding flextimes to inspect how it would impact the results.

Educational level was measured in three categories based on the International Classification of Education. The category low education includes people having lower secondary education or less, medium education includes people with upper secondary education or advanced vocational education and high education includes people with tertiary education or more. Two dummy variables were created to represent medium educational level and high educational level.

The national institutional diversity was accounted for in the analysis by applying a multilevel approach that reflects the structure of the data, i.e., individuals as level 1 units nested within countries as level 2 units. Variables that have been shown specifically relevant in relation to political alienation and employment precariousness are included in the analysis as controls, that is, gender, age, whether respondents have a partner or children living at

home and whether they have an immigration background. Age was measured as a continuous variable. All other control variables were represented by dummy variables: gender (0 = male, 1 = female), partner indicating whether the respondent lives with a partner (1 = yes), child indicating whether the respondent has children living at home (1 = yes), imm1 indicating whether the respondent is a first generation immigrant (i.e., foreign-born, 1 = yes) and imm2 indicating whether the respondent is a second generation immigrant (i.e., native-born with at least one foreign-born parent 1 = yes).

Statistical analysis

To answer the research question and to be able to differentiate between individual- and country-level effects, a multilevel modelling approach is applied using forward model selection. Table 1 gives an overview of the models to be estimated. The empty model (Model 0) will give an estimate of the variances situated at level 1 and level 2, giving an indication of the relevance of country-context and thus de need for a multilevel approach. Model 1 and 2 will separately assess the effects of employment precariousness and educational level on political alienation when control variables are included in the model. Deviance tests are conducted to determine whether these models fit the data significantly better than the empty model. Fixed effects are interpreted based on their beta coefficients. The size of them is assessed based on the ranges of the variables and their significance is tested with t-tests. This will be done throughout all following models. Model 3 has employment precariousness as dependent variable, which is needed to assess the hypothesised mediation. The fixed effects of education in Model 4 will be compared to those in Model 2 to investigate the possible existence and size of a mediation effect. Model 5 includes interaction terms between employment precariousness and political alienation to be able to assess a moderation effect. Model 6 and 7 serve to examine the existence of random slopes on the country level for employment precariousness and educational level.

The assumptions of linearity, normally distributed level 1 and level 2 residuals and heteroscedasticity underlying multilevel regression will be examined using visual inspection of several graphs, based on the model that fits the data best.

Table 1

Models to be estimated

Model	Independent variables (fixed effects)	Dependent variable	Random slopes
Model 0		Political alienation	
Model 1	Employment precariousness, control variables	Political alienation	
Model 2	Educational level, control variables	Political alienation	
Model 3	Educational level, control variables	Employment precariousness	
Model 4	Employment precariousness, educational level, control variables	Political alienation	
Model 5	Employment precariousness, educational level, employment precariousness*educational level, control variables	Political alienation	
Model 6	Employment precariousness, educational level, employment precariousness*educational level, control variables	Political alienation	Employment precariousness

Model 7	Employment precariousness, educational level, employment precariousness*educational level, control variables	Political alienation	Educational level

Results

Complications

The data contain a substantial number of incomplete cases. Of the total initial sample of 18750 cases, 9965 cases (53%) are complete which are used in the analyses. Specifically for employment precariousness the number of 8343 missing values is a large percentage of the sample (44%). A considerable share of these missing values is explained because the wages dimension, and therefore employment precariousness, could not be computed for the countries Ukraine, Russian Federation, Israel and Estonia, as a result of lacking data about median wages in these countries. Therefore, the countries were removed from the analysis, reducing the number of countries to 23. When only considering these 23 countries, the percentage of complete cases is 63% and the share of missing values for employment precariousness is 34%. Still, most of this is due to missingness in the wages dimension (28%). Back to considering the initial sample with 27 countries, the outcome variable political alienation contains a limited number of 1074 missing values (6%). Education and all control variables have very little missing values. A couple of cases are deemed invalid and thus removed, including all people that answered they usually work 0 hours a week.

The incomplete cases were compared to the complete cases, to assess whether there are large differences between the groups that could influence the results. For all categorical variables and for age the distributions in the two groups are similar, thus unlikely to have a substantial influence on the results. For political alienation however, the complete cases

group mean is 5.79 whereas the incomplete cases mean is 4.81, a whole point lower. For employment precariousness there is also a substantial difference of almost 7 points between the two groups, with the complete cases having their mean at 45.61 and the incomplete cases at 52.57. These differences could slightly alter the results, which should therefore be interpreted with caution.

Based on the criterion (value–Median $\tilde{X}$)/MADN > 2.24 (Wilcox & Keselman, 2003), outliers were identified for the continuous variables to be used in the analysis. For the control variable age no outliers were identified. For employment precariousness 21 outliers were identified, eight of which had a value of 0 and the scores of the other thirteen ranged from 90-100. Comparing the mean of employment precariousness of 45.61 to its trimmed mean of 45.62 shows they are practically the same. For political alienation 71 outliers were identified, of which six values were 0 and all other were 10. This is reflected in the difference between the mean of 5.21 and the trimmed mean of 5.14. However, this difference is again small. As the identified outliers do not seem to affect the distributions of the variables in a notable way based on comparing the means and trimmed means, the outliers were retained in the main analyses. Still, to get an insight into the possible sensitivity of the analyses to these extreme values, the analyses were repeated excluding them to investigate whether the results remained comparable.

Descriptive statistics

Table 2 below summarises descriptive statistics of the continuous variables in the analysis and the dimensions that make up employment precariousness. The sample contains about the same number of women as men (both about 50%) and the median age is 42. Most respondents live with a partner (68%) and around half of them have children living at home (51%). Around 30% of respondents has a high education, 56% a medium education and 15% a low education. A small part of the sample has an immigration background (8% first

generation, 6% second generation). The distributions of employment precariousness and political alienation are shown in Figure 1. Both distributions cover the whole range of the possible scores with employment precariousness slightly skewed to the left and a mean of 45.61, and political alienation slightly skewed to the right and a mean of 5.21.

Table 2

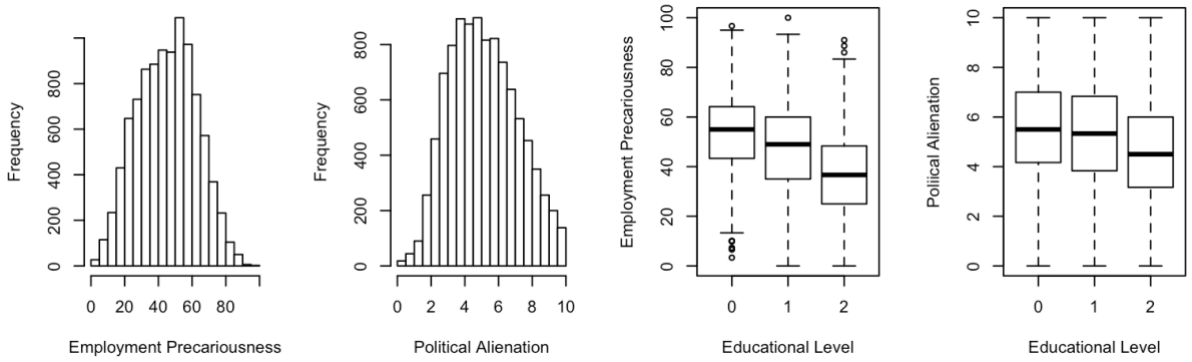
Descriptive statistics of continuous variables

Variable		Mean/ percent	Median	SD	Trimmed Mean (10%)	Min-Max
PA		5.21	6	2,01	5.14	0-10
EP		45,61	46,33	17,30	45,62	0-100
	Temporariness	18,66	0	24,98	14,31	0-100
	Disempowerment	63,96	75	29,78	66,74	0-100
	Flextimes	37,89	33,33	25,94	36,50	0-100
	Training	56,93	100	46,78	58,67	0-100
	Wages	50,60	50	30,38	50,75	0-100
Age		41,83	42	11,25	41,93	15-64

Note. All variables are the uncentered versions. n = 9965.

Figure 1

Distributions of employment precariousness and political alienation



In Table 3 Pearson correlation coefficients are presented. As expected, there is a substantial and positive correlation ($r(9963) = .29$, $p < .001$) between employment precariousness and political alienation, indicating that generally people who experience more employment precariousness are more politically alienated. This association is shown in Figure 2 including a LOESS line, suggesting a linear trend (a random sample was used to increase interpretability of the figure). All employment precariousness dimensions correlate positively with one another, except for the flextimes dimension. This dimension has small negative correlations with disempowerment, training, and wages, which was initially unexpected, but may be explained because this dimension was least well based on the validated EPRES versions. The relationships of educational level with political alienation and employment precariousness are in the expected directions and shown in Figure 1. People with a higher educational level generally experience less employment precariousness and are less politically alienated.

Table 3

Pearson correlation coefficients for all continuous variables

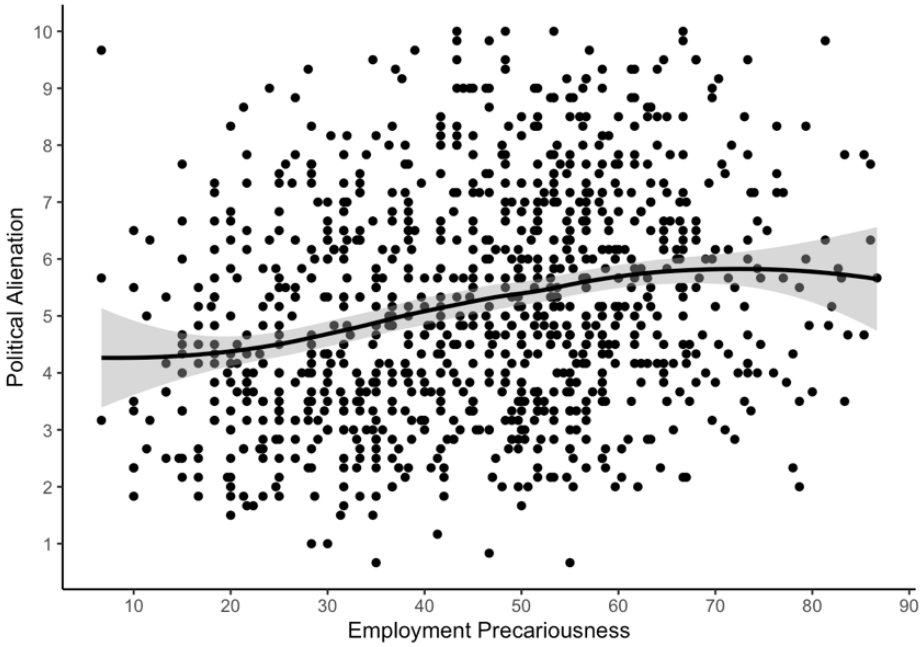
	1.	2.	3.	4.	5.	6.	7.	8.
1. PA	-							
2. EP	.29	-						

3. Temporariness	.03	.43	-					
4. Disempowerment	.23	.58	.06	-				
5. Flextimes	.01	.21	.03	-.08	-			
6. Training	.26	.71	.05	.24	-.08	-		
7. Wages	.17	.64	.23	.30	-.07	.27	-	
8. Age	-.05	-.23	-.42	-.07	-.05	-0.01	-.17	-

Note. n = 9965.

Figure 2

The relationship between employment precariousness and political alienation



Multilevel analysis

Table 4 shows results of the analyses from Model 0 until Model 3. The empty model estimates the deviance to be 37939 and the total variance to be $\hat{\tau}^2 + \hat{\sigma}^2 = 1.46 + 2.60 = 4.06$. Calculating the intraclass correlation coefficient (1.46 / (1.46 + 2.60 = 0.36) shows that approximately 36% of the total variance in political alienation scores can be attributed to differences between countries. Although most of the variance is situated at the individual

level, this demonstrates the importance of country context with regard to political alienation and underlines the relevance of taking a multilevel modelling approach.

Model 1 including fixed effects of employment precariousness and control variables displays a significantly improved fit to the data as shown by the significant reduction in deviance of 37939.01 – 37683.37 = 255.64 based on a loglikelihood test ($df = 7$, $p < .001$). The coefficient for employment precariousness of $b = 0.014$ ($se = 0.001$) represents a positive and significant ($t(9935) = 13.91$, $p < .001$) relationship between employment precariousness and political alienation, control variables considered. Taking into account the range of both measures, (0-100 for employment precariousness and 0-10 for political alienation), an effect of $b = 0.014$ is small. Further interpretation of the fixed effects is discussed below using Model 7, as this was ultimately the model demonstrating the best data fit.

Model 2 estimates the fixed effects of educational level on political alienation including controls, without considering the effect of employment precariousness. This model too, shows a significant reduction in deviance compared to the empty model of 37939.01 – 37648.67 = 290.34 ($df = 8$, $p < .001$). Medium education and high education both have a considerable and significant negative coefficient, respectively $b = -0.24$ ($se = 0.05$, $t(9934) = -4.87$, $p < .001$) and $b = -0.70$ ($se = 0.05$, $t(9934) = -13.30$, $p < .001$). Again, these effects are of small size considering the range of political alienation (0-10).

Model 3 has employment precariousness as dependent variable, with the purpose to investigate a mediation effect. This model suggests a significant negative relationship between educational level and employment precariousness, control variables considered. Medium education has an estimated coefficient of $b = -6.07$($se = 0.45$, $t(9934) = -13.51$, $p < .001$) which is interpreted as a small effect considering the range of 0-100 of employment precariousness. High education has an effect interpreted as being of medium magnitude, with a coefficient of $b = -15.68$ ($se = 0.48$, $t(9934) = -32.62$, $p < .001$). The fixed effects of the

control variables show that according to this model, women, younger respondents, people without a partner and children, and without an immigration background experience slightly more employment precariousness.

Table 4

Models 0-3

	Model 0		Model 1		Model 2		Model 3 (DV = EP)	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Fixed effects								
0. Intercept	5.54	0.25	5.63	0.25	5.95	0.25	8.14	0.57
1. EP			0.014	0.001				
2. gender			0.03	0.03	0.095	0.03	2.82	0.30
3. age			0.003	0.001	-0.003	0.001	-0.32	0.01
4. partner			-0.09	0.04	-0.11	0.04	-1.58	0.35
5. child			-0.03	0.04	-0.07	0.03	-2.57	0.32
6. 1st gen			-0.40	0.06	-0.34	0.06	4.08	0.54
7. 2nd gen			0.06	0.07	-0.07	0.07	1.23	0.60
8. medium education					-0.24	0.05	-6.07	0.45
9. high education					-0.70	0.05	-15.68	0.48
Random effects								
Level 2								
τ_0^2= var(U_{0j})	1.46		1.44		1.39		2.00	
Level 1								
σ^2= var(R_{ij})	2.60		2.54		2.53		212.83	
Deviance	37939		37683		37648		81732	

In Table 5 the results of Model 4 until Model 7 are displayed. Model 4, including the effects of employment precariousness, education, and all control variables at the same time, shows a significant reduction in deviance compared to Model 1 of 37683.37 – 37561.06 = 122.31 (df = 2, p < .001). Now that employment precariousness and educational level are included in the model at the same time, both effects reduced compared to when they were separately included in the model (Model 1 and Model 2). Nonetheless, the direction of the effects and the interpretation of the strengths remain the same. The coefficient for employment precariousness of b = 0.010 (se = 0.001) still represents a positive and significant (t(9933) = 9.38, p < .001) relationship of small magnitude between employment precariousness and political alienation. The coefficient of medium education is now b = -.18

(*se* = 0.05), representing again a small and significant effect (*t*(9933) = -3.57, *p* < .001). Similarly, the coefficient of high education is now *b* = -.54 (*se* = 0.06), again representing small and significant effect (*t*(9933) = -9.75, *p* < .001). The differences in education effects between Model 2 and this model were significant and amount to 0.24 – 0.18 = 0.06 points for medium education and 0.70 – 0.54 = 0.16 points for high education. These differences reflect the parts of the effects of education which are explained by employment precariousness (between 20-25%), showing the partial mediation. In Figure 3, the total effect of education and the mediation via employment precariousness are depicted in a diagram. The fixed effects of the control variables did not change much.

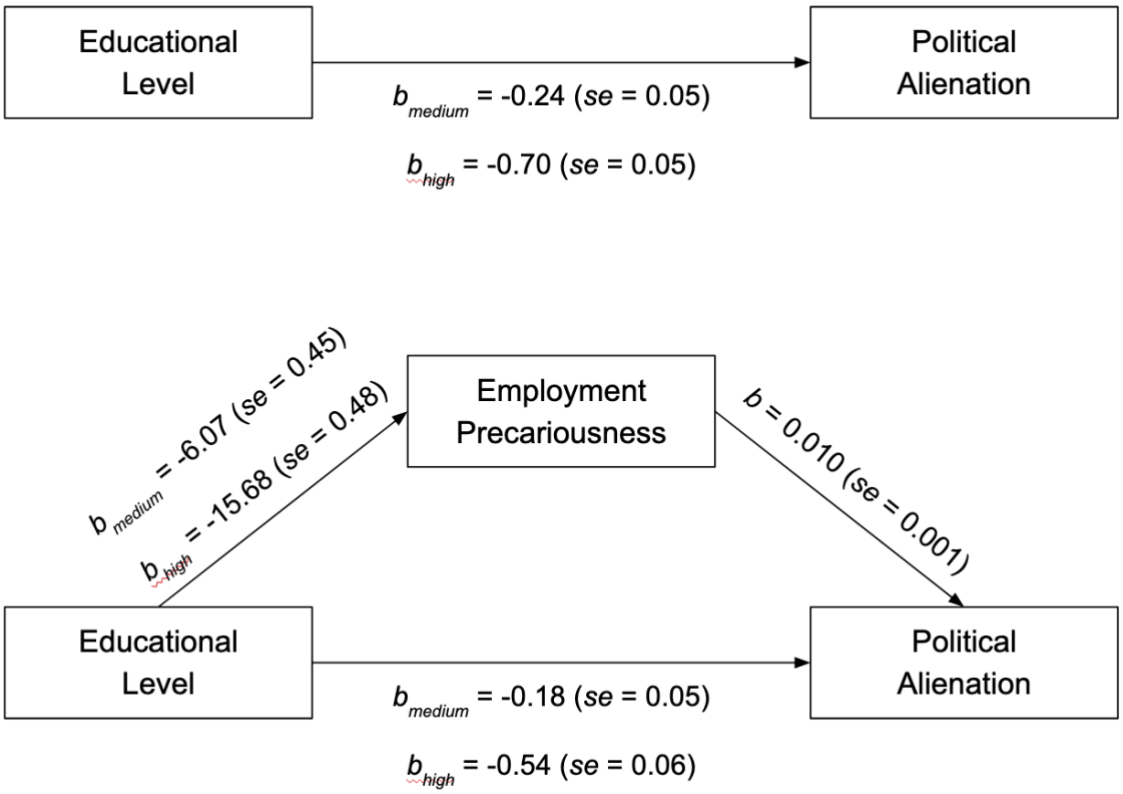
Table 5

Models 4-7

	Model 4		Model 5		Model 6		Model 7	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Fixed effects								
0. Intercept	5.87	0.25	5.87	0.25	5.87	0.25	5.84	0.24
1. EP	0.010	0.001	0.010	0.003	0.009	0.003	0.010	0.003
2. gender	0.07	0.03	0.07	0.03	0.07	0.03	0.07	0.03
3. age	<0.001	0.002	<0.001	0.002	<0.001	0.002	<0.001	0.002
4. partner	-0.09	0.04	-0.09	0.04	-0.09	0.04	-0.09	0.04
5. child	-0.04	0.03	-0.04	0.03	-0.04	0.03	-0.03	0.03
6. 1st gen	-0.38	0.06	-0.38	0.06	-0.38	0.06	-0.38	0.06
7. 2nd gen	0.06	0.07	-0.07	0.07	0.06	0.07	0.07	0.07
8. medium education	-0.18	0.05	-0.18	0.05	-0.18	0.05	-0.16	0.08
9. high education	-0.54	0.06	-0.55	0.06	-0.55	0.06	-0.49	0.10
10. EP*medium education			0.001	0.003	0.001	0.003	0.001	0.003
11. EP*high education			-0.001	0.003	-0.001	0.003	-0.002	0.003
Random effects								
Level 2								
τ_0^2= var(U_{0j})	1.40		1.40		1.40		1.25	
τ_1^2= var(U_{1j})					<0.0001			
τ_8^2= var(U_{8j})							0.07	
τ_9^2= var(U_{9j})							0.11	
τ_{01}= cov(U_{0j},U_{1j})					-0.40			
τ_{02}= cov(U_{0j},U_{8j})							0.15	
τ_{03}= cov(U_{0j},U_{9j})							0.21	
Level 1								
σ^2= var(R_{ij})	2.51		2.51		2.50		2.49	
Deviance	37561		37560		37556		37539	

Figure 3

The total effect of educational level and the mediation effect via employment precariousness



Model 5 included interaction effects between employment precariousness and educational level. These effects were very small and non-significant and therefore did not lead to a significant reduction in deviance. Consequently, all other effects remained highly similar.

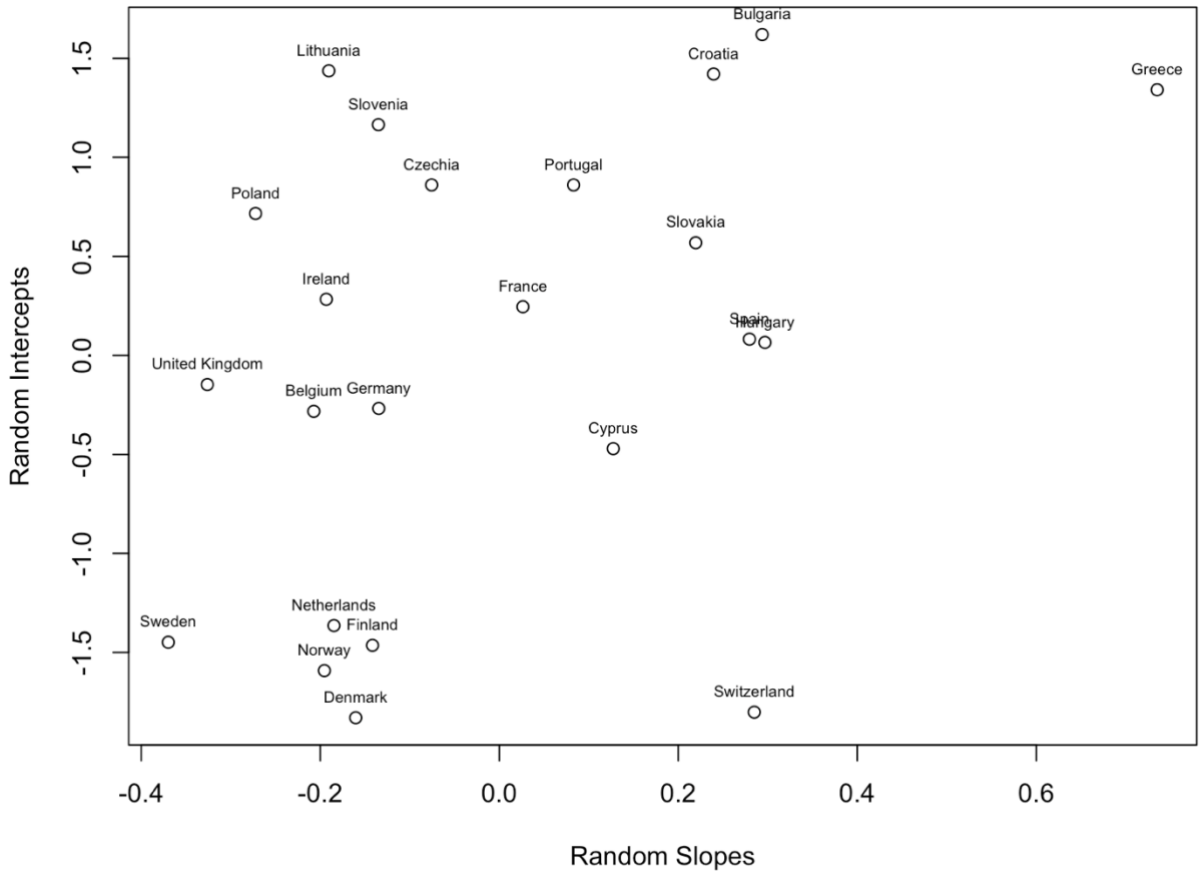
Model 6 allowed the slopes of employment precariousness to differ between countries. Again, this did not result in a significant reduction of deviance. The estimated level 2 variance of employment precariousness is very small ($\hat{\tau}_1^2 < 0.0001$), suggesting no evidence for differences in the effect of employment precariousness on political alienation per country.

Model 7 allowed the slopes of educational level to differ between countries. This did lead to a significant reduction in deviance compared to Model 5 of 37560,2 - 37539,31 = 20,89 ($df = 5$, $p < .001$), suggesting that the effect of educational level on political alienation

differs between countries. Of all models, Model 7 fits the data best and will therefore be used to interpret the effects. The estimated fixed coefficient of employment precariousness is b = 0.010 (se = 0.003) which is a small and significant effect ($t(9931) = 3.64$, $p < .001$). In other words, this model predicts a difference in political alienation scores between people with minimum employment precariousness (0) and people with maximum employment precariousness (100) of 100*0.010 = 1.00 point, when considering education and all other control variables. The estimated fixed effects of the education dummies decreased compared to the other models, however, the interpretation remains the same: overall, people with a higher educational level are less politically alienated, considering the other variables included. The fixed effect coefficient of medium education is estimated to be b = -0.16 (se = 0.08) and that of high education b = -0.49 (se = 0.10), both interpreted as small effects. The level 2 variances of the educational dummies are estimated to be $\hat{\tau}_8^2 = 0.07$ for medium education and $\hat{\tau}_9^2 = 0.11$ for high education and they represent the variability in education effects between countries. Although all estimated effects are interpreted as having a small magnitude, the sizes of these random effects are substantial when we compare them to their fixed effect coefficients. The covariance between the intercept and the slope of medium education is estimated to be $\hat{\tau}_{02} = 0.15$ and for high education this covariance is estimated at $\hat{\tau}_{03} = 0.21$. Translating these into correlations gives $r = 0.15/(\sqrt{1.25}*\sqrt{0.07}) = .53$ for medium education and $r = 0.21/(\sqrt{1.25}*\sqrt{0.11}) = .57$. This shows a strong connection between the intercepts and slopes of the education dummies, representing the fact that for educational level, countries with higher average political alienation also tend to have stronger effects of education. The random effects are depicted in Figure 4 (for high education).

Figure 4

The random intercept effects and random slope effects for high education per country



The effects of the control variables in Model 7, considering all other variables, suggest that overall women (b = 0.07, se = 0.03) are slightly more politically alienated, and people with a partner slightly less (b = -0.09, se = 0.04). Furthermore, people's age (b < 0.001, se = 0.002) and whether they have children living at home (b = -0.03, se = 0.03) do not seem to be related to their political alienation. First generation immigrants tend to be less politically alienated than people without an immigration background (b = -0.38, se = 0.06), whereas being second generation immigrant does not seem to make a difference (b = 0.07, se = 0.07).

Because of the considerations about the employment precariousness measure as described in the methods section, the models were run again using an operationalisation that excludes the flextimes dimension. Although the estimated effects of employment precariousness would be somewhat smaller in this operationalisation, most of the final

interpretations and statements about hypotheses would be similar. The only difference is that using this operationalisation, contrary to the main analysis, random country effects of employment precariousness were found based on a deviance test ($\chi 2(1) = 6.46$, $p = 0.04$), albeit with small magnitudes ($\hat{\tau}_1{}^2 < 0.0001$). For the analysis without outliers, the results were very similar and would lead to the same conclusions. In other words, these extreme values did not have a large impact on the analysis.

Assumptions

The assumptions of linearity, normality and homoscedasticity regarding multilevel modelling were inspected using Model 7. Scatterplots showed no indication of strong deviations from linear relationships between the continuous variables included in the analysis (see Figure 2 for the relationship between employment precariousness and political alienation). For all the other variables, linearity is not a problem because they are dummy coded. A QQ-plot of Model 7 showed no deviation from normally distributed residuals. The assumption of homoscedasticity seems violated when inspecting a graph plotting the standardised residuals against the fitted values of Model 7. A Levene's test confirms significant differences in variances of the residuals across groups ($F = 8.54$, $p < 0.001$). In sum, the assumptions of linearity and normality seem to be met. The assumption of homoscedasticity is violated, thus, caution must be taken when interpreting results.

Discussion

This study integrated insights on employment precariousness, education and political alienation and aimed to test the relationships between these factors in a multilevel context that represents distinctive institutional environments. The results showed support towards Hypothesis 1, suggesting that as expected, people in more precarious jobs are more politically alienated. This may be explained because when people's work is precarious, they may hold political institutions to an extent accountable for their situation, resulting in less trust in and

satisfaction with these institutions. Theory also suggest that social status may be an explaining factor, in the sense that employment precariousness may lead to status decline, which consequently makes people more alienated from mainstream politics as they feel left behind in society. In line with existing literature, evidence was found towards Hypothesis 2, suggesting that higher educated people are generally less politically alienated.

The analysis found support towards a mediating role of employment precariousness between educational level and political alienation, as stated in Hypothesis 3. Although this cross-sectional study cannot make any causal claims, the results are in line with the idea that educational level can lead to a certain degree of employment precariousness, which in turn can translate into a particular level of political alienation. This mechanism is further supported because of the reasonable plausibility of the direction of the relationships: education is generally acquired before employment, and it seems unlikely that political alienation will lead to employment precariousness. It should be noted, however, that there may be another factor which could explain the relationships between employment precariousness, education and political alienation which was not considered in this analysis. For example, societal discontent is related to both measures of political alienation (Giebler et al., 2021; Gootjes et al., 2021) and education (Van der Bles et al., 2018). Investigating whether and how this may connect to employment precariousness may be something to consider for future research. It could also be further explored what factors explain the remaining part of the difference in political alienation scores between educational groups.

No evidence was found pointing towards educational differences in the way that employment precariousness is related to political alienation. This is quite surprising, considering the different relationships that lower- and higher educated people tend to have with political institutions and work. It may be that the mechanisms as described in the introduction cancel each other out. However, as this study took a rather exploratory

perspective on these educational differences, future research could investigate whether the described mechanisms indeed exist and to what extent they affect the interplay between employment precariousness and political alienation for different educational groups.

Another surprising finding was that the fourth hypothesis, stating that the effect of employment precariousness on political alienation is different between countries, was not supported. It seems reasonable to expect that between countries with distinct institutional environments, different standards regarding employment precariousness and attitudes towards the political system exist, and therefore the way this translates into political attitudes diverges between them. Regardless, this study suggests no such differences based on the main analysis. Interestingly, however, when applying an analysis excluding the dimension that least well resembled previously validated measures of employment precariousness, differences were found. Thus, it is unclear if and how national context affects the effect of employment precariousness on political alienation The deviating findings of the two analyses show the importance of how precarious employment is operationalised. This underscores the need for enough items in large European recurring studies such as the ESS, to be able to operationalise employment precariousness in a way that accurately represents the construct. Only then, it can be optimally used in research that relates it to various other topics.

The main analysis did find support towards Hypothesis 5, stating that the effect of education on political alienation is different between countries. In other words, in some countries the differences in political alienation between educational groups are larger than in others, suggesting the importance of the institutional context for these groups and their political attitudes, and again underlining that for these topics it is crucial to consider the macro-level.

For the evaluation of all findings, it should be recognised that, although they demonstrate some robustness by being insensitive to extreme observations, all found effects were of small

size. Based on this, the conclusion could be drawn that employment precariousness and educational level do seem to play a role regarding political alienation, however, many other factors are simultaneously at play that may translate into political alienation.

Authors have theorised about how increasing legitimacy of capitalism and precarity may attenuate the negative consequences that follow from them (Azmanova, 2020). Although this contention should be investigated, it could be one explanation of the relatively small relationship that was found between employment precariousness and political alienation. Additionally, the imperfect operationalisation of employment precariousness due to a lack of suitable data could have contributed to the finding of small effects. Possibly, if all dimensions of employment precariousness were covered in the measure using quality items, larger effects would be found. Despite the efforts that were made to operationalise employment precariousness as similar to existing validated scales as possible, the restricted operationalisation, which is also reflected in the low Cronbach's alpha score, forms a clear limitation of this study. Aside from the possibility that the results may be conservative, the operationalisation simply does not cover the theoretical complexity of the multidimensional precarity concept, creating a larger gap between theory and empirical findings.

A second limitation regarding the operationalisation of employment precariousness is the lacking theoretical foundation of the way that the final scores are computed based on the used items. This study and previous studies have applied equal weighting to all items and dimensions included, because the limited research into the weighting of this construct has not yet figured out a golden standard (Padrosa et al., 2021a). This implies the strong theoretical assumption that each aspect of precariousness is equally important, which is rather unlikely. To further develop research into employment precariousness, determining accurate weighting to better represent the construct would be of great value.

The large amount of missing data has presumably affected the results. Although a comprehensive missing data analysis investigating how this may have affected the results was beyond the scope of this study, the missingness, especially for the wages dimension of employment precariousness, is a clear limitation of this study. Missing data on income level has been and still is very common, highlighting the continuous importance to find ways to increase respondent's willingness to share this information.

Despite the abovementioned limitations, the study makes valuable contributions to existing research. Firstly, this is to my knowledge the first study to theoretically connect and test the links between employment precariousness, education, and political alienation in one multilevel context. In this way, it sheds light on three influential phenomena which simultaneously seem to be occurring in most advanced industrialised democracies: the expansion of precarious work, growing importance of education, and increasing signs of political alienation. In addition, it is the first study that constructs a multidimensional employment precariousness measure based on previously validated scales, using data available in a repeated cross-sectional survey, and subsequently examining its relationship with political alienation. This deepens our understanding of the individual-level socioeconomic factors that contribute to people's feelings of trust and satisfaction with democracy and how they differ nationally. Recognising the multidimensionality of employment precariousness is essential to this end, as previous literature researching political attitudes has neglected the complexity of precarity and has focused on narrow, single indicators such as perceived job insecurity alone.

Conclusion

The increase of employment precariousness in the last couple of decades does not only influence the working life of individuals: its effects are widespread across life's domains. In addition to, for instance, affecting employee's health, employment precariousness seems to

impact individual's and society's political domain as more precarious employees tend to be less trustful of and satisfied with political institutions. The educational gap that is both present in the exposure to employment precariousness and feelings of political alienation highlights that we cannot look at these issues without acknowledging the central role of education. Someone's educational attainment likely has repercussions for their employment precariousness, and this study suggests that via this route it may translate into feelings of political alienation. In addition, national-level differences in the relationship between educational level and political alienation emphasise that these topics should always be investigated when considering the institutional context. Future research should examine these relationships in more detail and could benefit greatly from the inclusion of enough items to construct a valid measure of employment precariousness in large recurring cross-sectional data sets that also cover political topics. May this paper serve as a starting point for the task to integrate and understand the links between precarious employment, education, and political attitudes, so we can accordingly develop policies that benefit the workings of democracy and the lives of her citizens.

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Appendix

Operationalisation and computation of employment precariousness.

The variable is computed based on 5 dimensions (see below). The dimension scores are averages of the items in the dimension transformed into a 0-100 scale (following Vives et al. & Padrosa et al.)

- *Temporariness* consisting of:
    - Contrdur: a computed variable (based on variables wrkctra & jbtmppm) indicating whether the respondent has a permanent contract (0), a temporary contract of one year or more (1), or a temporary contract of less than a year (2).
    - Tenure: a computed variable (based on variable yrcremp) indicating how long the respondent has been at their company: more than five years (0), 4-5 years (1), 1-3 years (2), or less than a year (3).

  The temporariness score is computed as: 100 * (contrdur + tenure) / 5
- *Disempowerment* consisting of:
    - Meetings: a variable indicating whether there are regular meetings between representatives of the employer and employees at the place where the respondent works, in which working conditions and practices can be discussed (yes = 0, no = 1).
    - Decidetime: a variable indicating whether it is true that the respondent can decide the time they start and finish work (0 = very true, 1 = a little true, 2 = quite true, 3 = not at all true)

  The disempowerment score is computed as: 100 * (meetings + decidetime) / 4
- *Flextimes* consisting of:
    - Overtime: a computed variable based on wrkovrtm that indicates how often a respondent needs to work overtime at short notice (0 = never, 1 = once a month or less, 2 = several times a month or once a week, 3 = several times a week or every day).
    - Involhours: computed variable (based on wkhtot and wkhsch) indicating whether respondent would want to work more or less hours, when taking into account the difference in wages (0 = works preferred hours, 1 = would want to work up to 8 hours

more or less, 2 = would want to work up to 8-16 hours more or less; 3 = would want to work >16 hours more or less).

The flextimes score is computed as: 100 * (overtime + involhours) / 6

- *Training* consisting of atncrse and edupdem, indicating whether the respondent has taken any course or attended any lecture or conference to improve their knowledge or skills for work, and whether that was paid for by employer (0 = yes, fully paid for; 1 = yes, not fully paid for; 2 = no).

  The training score is computed as: 100 * (training) / 2

- *Wages* consisting of:
  - Montlhywage: computed variable based on grspaya, payprda and median wages in countries (taken from Eurostat) indicating the gross monthly wage of the respondent (0 = high, more than 1.5 times the median of the country; 1 = medium-high, between the median and 1.5 times the median; 2 = medium-low, between the median and 0.6 times the median; 3 = low, less than 0.6 times the median)
  - Hourlywage: computed variable based on monthlywage, wkhtot and median wages in countries (taken from Eurostat) indicating the gross hourly wage of the respondent

  The wages score is computed as: 100 * (monthlywage + hourlywage) / 6

The employment precariousness score is calculated as the mean of all 5 dimension-scores and country-mean centring this number. In this way, a positive score of a respondent represents more employment precariousness than the mean EP in the respondent's country of residence.