

CES Open Forum Series **2024-2025**

No. 53 - January 2025

Gender, Insecurity and Populism in Europe

Expanding the Investigation of Insecurity and
Populist Voting Through Statistical Matching

Lorenza Antonucci
Roberta Di Stefano
Carlo D'Ippoliti
Martin Strobl
Jan Philipp Thomeczek



About Open Forum

The [Open Forum Paper Series](#) is designed to present work in progress by current and former affiliates of the Minda de Gunzburg Center for European Studies (CES) and to distribute papers presented at the Center's seminars and conferences.

Any opinions expressed in the papers are those of the authors and not of CES. For feedback on the series or for submissions, please contact the editors.

Editors

[George Soroka](#), Editor and [Paris Boo](#), Assistant Editor.

About CES

The [Minda de Gunzburg Center for European Studies](#) (CES) was founded in 1969 at Harvard University's Faculty of Arts and Sciences to promote the interdisciplinary understanding of European history, politics, economy and societies. Its mission is to:

- Foster the study of and innovative research on Europe among Harvard faculty as well as graduate and undergraduate students.
- Facilitate the training of new generations of scholars and experts in European studies.
- Serve as a forum for vibrant discussions on European history and contemporary affairs which nurture the exchange of ideas across disciplines, sectors, generations, and across the Atlantic.

Contact:

[Gila Naderi](#), Director of Communications

@EuropeAtHarvard

Minda de Gunzburg Center for European Studies

Where **Harvard** & Europe Meet Since 1969

Lorenza Antonucci is associate professor of social policy, sociology, and criminology at University of Birmingham. Antonucci served as the German Kennedy Memorial Fellow at the Minda de Gunzburg Center for European Studies at Harvard University in 2022-2023 and a visiting scholar at Sciences Po in Spring 2022. They will be Axa Visiting Associate Professor at AxPo Sciences Po in Spring 2025. Antonucci was PI and Working Package 2 Lead of the PRECEDE project funded by the Volkswagen Foundation. They have published on the causes and political effects of insecurity/precarity for journals such as the *European Sociological Review* and *Social Policy & Administration*. They are finalizing a manuscript on insecurity in Europe for Princeton University Press.

Roberta Di Stefano is a research fellow at the department of methods and models for economics, territory and finance at Sapienza University of Rome where she received her Ph.D. in statistical methods and economics. Di Stefano was research fellow of WP2 "The socio-economic and cultural dri+

Martin Strobl is an economist at the Institute of Free Technology. Previously, he was a research fellow at the University of Birmingham, contributing to the PRECEDE project exploring the socio-economic and cultural roots of European populism. Strobl holds a Ph.D. in economics from Aarhus University, specializing in political economy and voting behaviour.

Jan Philipp Thomeczek is a political scientist with a keen interest in political parties and their voters, particularly populist parties. He has developed Voting Advice Applications (VAAs) tailored for various electoral levels in Germany. During his work with the PRECEDE project, he co-developed VAAs for ten European countries. As a research fellow of the University of Potsdam, Thomeczek is engaged in research on party-voter congruence among populist voters and in investigating the emerging German political party Bündnis Sahra Wagenknecht (BSW).

Abstract

The measurement of insecurity in relation to populism has been centered around the operationalization of the risk of unemployment, leaving other dimensions of insecurity largely overlooked. In this working paper, we use advanced statistical data matching with computational techniques to create a synthetic dataset of EWCS and ESS in 23 European countries based on demographics, region, industry sector, and educational attainment of respondents. By combining representative data on high work pressure and job dissatisfaction in the EWCS with the information on the political preferences of respondents and on financial insecurity in the ESS, we demonstrate the presence of a gendered association between insecurity and populist voting. We find that higher work pressure and higher job dissatisfaction are associated with a higher probability of voting for the populist right populist among men, while higher financial insecurity is associated with a higher probability of total populist party voting among women. In addition to demonstrating the advantages of statistical matching over average-based imputation, the paper argues that the debate on the socioeconomic triggers of populist voting needs to account for the role of gender in mediating the effects of insecurity in populist voting.

Contact: [Lorenza Antonucci](#), Associate Professor, School of Social Policy, University of Birmingham, l.antonucci@bham.ac.uk

Gender, Insecurity and Populism in Europe: Expanding the Investigation of Insecurity and Populist Voting Through Statistical Matching¹

1. Introduction

While political theorists postulate that precarity and work insecurity are central factors behind the recent populist surge in Europe (see Rosenbluth and Weir, 2021; Berman, 2021; Azmanova, 2020), we still have a limited set of tools to investigate the link between insecurity and voting. Political scientists operationalize insecurity mostly in relation to the type and length of the work contract and the risk of unemployment (Abou-Chadi and Kurer, 2021; Sipma et al, 2023). Meanwhile, insecurity research from political sociology has empirically shown that, even more than the fear of losing one's job, it is the rising dissatisfaction about work and the difficulty to meet financial commitments that are driving populist support (Antonucci et al, 2021; Zhirnov al, 2023).

The main reason for the limited operationalization of insecurity is often due to the limited variables on work and financial insecurity available in representative surveys such as the European Social Survey (ESS). Hence, the studies that have been able to investigate work and financial insecurity have done so using online panels that permit testing variables on work and financial insecurity. These studies have indeed demonstrated an existing association with populist support. The main limitation of these studies, however, is their lack of representativeness when compared to the use of probability sampling datasets. In this paper we overcome existing barriers by using another solution: statistical matching (SM) techniques. This study broadens existing explanations of populism by applying, for the first time, statistical matching (SM) techniques (D'Orazio et al., 2006) to the realm of populist and mainstream voting. SM allows us to combine the information available in the European Social Survey (ESS)

¹ The paper is a product of Working Package 2 "The socio-economic and cultural drivers of populist vote" of the Volkswagen-funded project PRECEDE (2020-2023) that includes the following PIs: Lorenza Antonucci, Carlo D'Ippoliti, Susan Banducci, Norbert Kersting and Andre Krouwel and their post-Docs. We thank our colleague Andrei Zhirnov for being an active member of WP2 and for his work and input on party voting classification in WP2.

with those in the European Working Conditions Survey (EWCS) in 23 countries in Europe. Combining the two surveys allows one to test not only the classic ways to measure insecurity (job tenure insecurity), but also variables that look at working conditions.² The existing literature on work insecurity suggests that, while there has not been a widespread diffusion in the insecurity of tenure, there are more widespread forms of insecurity emerging from the declining quality of work (i.e., autonomy, work-life-balance, job intensification) (see Gallie, 2017; Lopes et al, 2014; Gallie et al., 2017) and a general lack of recognition at work affecting male workers in particular (Lamont, 2018). Therefore, the combination of the EWCS and the ESS allows us to measure the political effects of high work pressure and job dissatisfaction that are present in the EWCS, in addition to the measures of financial insecurity that are included in the ESS.

The findings of this article show that the effect of insecurity on populist support is gendered: We find a general positive association between the work-related insecurity and populist voting among men, and a positive association between financial insecurity and populist voting among women. Hence, the study advances the research that examines the relationship between insecurity and populism by indicating that association between different types of insecurity and populism is mediated by gender. Furthermore, the article contains a substantial methodological advancement in the field: Instead of matching datasets through group averages (GA), as has been previously done in the field (Abou-Chadi and Kurer, 2021; Derndorfer, forthcoming), we employ advanced statistical matching through computational methods to merge two datasets with multiple variables. This allows us to work with a dataset that does not present skewed average distribution; have a broader set of variables of insecurity to test; and have a larger set of socio-economic control variables to reinforce the validity of the models. The article compares the results obtained from using SM and the GA technique, showing that the imputed variables in the synthetic SM dataset closely resemble those in the EWCS, while this is not the case for the GA dataset.

The article is structured as follows. First, it discusses the limitations of investigating the link between socioeconomic insecurity and populist voting in previous studies, and discusses the

² A new round of the EWCS is ongoing in 2024 and the EWCS survey conducted during Covid-19 did not include some core items of work conditions that we intended to use in the analysis.

gendered role of work and financial insecurity in triggering populist support. Second, the article discusses the methodology—including the hypotheses of how insecurity is linked to voting—and the process of using data matching to expand the explanatory variables used to explain voting behavior. The main findings of the study are then presented, and the results are discussed in relation to the hypotheses on gender and voting for populist parties. The conclusion positions the findings in the current literature and highlights how the analytical and methodological innovation of the research contributes to the literature.

2. Insecurity and Populism in Europe: An Open Puzzle

Political scientists increasingly refer to ‘precarity’ and ‘insecurity’ as a set of individual conditions that help to explain the populist momentum that emerged after 2016. For example, Berman discusses insecurity as a central motive in the resentment that has been behind the recent rise of populism (Berman, 2021). In a similar fashion, the political theorist Azmanova defines the current political momentum as ‘precarity capitalism’—a term she coined to stress how the current political climate is characterized by the “universalization of insecurity, which is now afflicting the majority of the population, almost irrespective of employment type and income level” (Azmanova, 2020: 20). Even the last monograph of the late Inglehart – while placing a focus on the cultural factors – states that economic insecurity “plays a crucial role earlier in the causal process, helping explain why the Populist Authoritarian vote is much stronger today than it was 30 years ago” (Inglehart, 2018: 232).

Despite often being mentioned in theoretical studies, insecurity is mostly operationalized purely as an economic factor in relation to populism, rather than as a concept with both cultural and economic implications (see Gidron and Hall, 2017). Scholars have investigated populism in relation to economic insecurity and have found that a number of macroeconomic processes are associated with populist voting, such as ‘trade shocks,’ technological changes, automation, digital work, public cuts at the local level, and economic crises (Margalit, 2019). Studies that measure insecurity at the individual level have been scarcer or have used limited indicators of insecurity in relation to the risk of unemployment or limited tenure of work, finding inconclusive

evidence. For example, Sipma et al. (2023) found only a limited effect of job tenure insecurity on voting for populist parties.

In an attempt to enlarge the understanding of insecurity to broader segments of the population, Abou-Chadi and Kurer (2021) have explored insecurity as an economic risk, and specifically as the risk of unemployment in the household. The authors found that an individual's economic risks did indeed have a significant effect on their support for the radical right, and that this effect persisted even when the voter was exposed to these risks only indirectly via their partner. In the study by Abou-Chadi and Kurer (2021), as in other studies in this area that are investigating insecurity in relation to populism (Vlandas and Halikiopoulou, 2022; Sipma et al, 2023), the main form of insecurity that is investigated is the risk of unemployment.

This approach responds to a specific conceptualization of insecurity as the risk of losing one's job. It is the insecurity that comes from having a contract with uncertain tenure (employment insecurity or job insecurity) — a concept borrowed from economics (see Burgoon and Dekker, 2010). This form of insecurity affects so-called labor market outsiders—namely, individuals who are excluded from the labor market and, consequently, face barriers in accessing the welfare state (Emmenegger et al, 2012). The assumption that underpins such a conceptualization of economic insecurity is that security comes mostly from having a job, while insecurity stems from the potential risk of losing one's job. Political science research has been highly influenced by this narrow economic conceptualization of insecurity, and thus scholars have widely investigated the political preferences of labor market outsiders (Emmenegger et al, 2015) and of individuals working in a sector with a higher diffusion of atypical contracts (Häusermann, 2020).

Job insecurity (namely, insecurity regarding the tenure and length of work) is surely on the rise in Europe, especially for young workers, but it still affects only a relatively contained portion of the total workforce. Larger investigations of job insecurity indicate that “there has been no clear secular trend for job durations to become shorter or subjective job insecurity to become more prevalent” (Gallie, 2017: 243). Therefore, these measures, albeit important, exclude most of the working and non-working population that have (potentially) encountered forms of “insecurity” other than financial insecurity, that may be driving them to support populist parties. The aspects

of rising insecurity in relation to populism stressed by this literature concern the decline in the forms of labor market security under industrial citizenship such as the rise in work pressure, the loss of the features of work, the loss of autonomy (see Standing, 2011).

Studies that have empirically investigated the security in the conditions of work (e.g. autonomy, work pressure, relationship with the management) in relation to populism demonstrate that insecurity in the work conditions is more closely associated with right and left populist support than the insecurity of tenure or the fear of losing one's job in Europe (Antonucci et al, 2019; Zhirnov et al, 2023). To put it with the words of Azmanova, "intensifying work pressures take a growing psychological toll even on the labor market 'insiders' we so envy" (Azmanova, 2020: 14). These studies suggest that the rise of anti-system or populist voting does not result simply from a failure of the transition to a knowledge-based welfare state in protecting low-skilled individuals (Iversen and Soskice, 2019; Gidron and Hall, 2017) but from broader issues that the knowledge-based transition generated in the workplace, affecting also labor market insiders (Antonucci et al, 2024) and reverberating into political support for populism.

Nonetheless, empirical research that has compared the different forms of insecurity (work insecurity and financial insecurity) has suggested that insecurity in relation to work conditions is not the only form of insecurity or the most determinant form of insecurity in populist support and voting. In the study by Zhirnov et al (2023), for example, financial insecurity is more strongly associated with populist attitudes and populist voting than work-based insecurity. Financial insecurity is indeed potentially able to capture the growing issues faced by the lower-middle income groups and ordinary families in driving the most recent populist momentum (Kurer and Palier, 2019; Antonucci et al., 2017). Furthermore, financial insecurity might be more able to capture the growing malaise of Europeans behind populist voting because it considers the political effects of precarity in a broader pool of voters, including also non-working individuals (e.g., unpaid workers, self-employed individuals, carers and students) who are generally excluded from work-focused measures of insecurity used in studies on voting.

Overcoming the exclusive focus on work, and including measures of financial insecurity, allows one to account for aspects of insecurity that could potentially affect also women. An

important question in the literature concerns the role of gender in mediating the effect between insecurity and populism. Numerous studies have stressed that gender has a key role in the likelihood and direction of populist voting, with men being more likely to vote Radical Populist Right (RPR) in particular (Abi-Hassan, 2017; Spierings and Zaslove, 2017). While there is a gender gap in voting for Radical Populist Right parties, a large portion of women nonetheless support populist voting: If in earlier elections around one third of populist right voters were women, in most recent rounds, women account for 40 percent or more of Radical Populist Right voters (Spierings and Zaslove, 2015), and we can also expect women to support populist left parties (Spierings and Zaslove, 2017). The study by Gidron and Hall (2017) found a loss of social status associated with right populism among men with low levels of education. However, existing scholarship in populism and gender suggests that “the masculinist setting” in populist right support “also includes subordinated women who are afraid of losing ‘secure’ gender relations in their daily lives” (Sauer, 2020: 30). As women are not immune from insecurity – and from supporting populist parties – the puzzle is to understand whether insecurity concerns men only or if there are different forms of insecurity affecting women and men behind populist support.

3. Theory: Understanding how gender mediates the effects of insecurity in populist voting

Previous studies that have investigated the role of insecurity in populist voting have theorized the link between insecurity and populism to be both “symbolic” and “instrumental” (Zhirnov et al, 2023; Gidron and Hall, 2017). According to these studies, more insecure voters are drawn to radical populist right (RPR) and radical populist left (RPL) party voting because they perceive these parties to symbolically pursue the will of the insecure people when the elites fail to do so. It is through insecurity that “the people” bond together; due to insecurity a cleavage emerges between the insecure people and the secure elites. RPR and RPL parties also propose instrumental solutions to address people’s insecurity: RPR parties intend to restore security via welfare chauvinism and a return to traditional gender roles, while RPL aim to restore security through a more radical form of redistribution.

Our proposed conceptualization of insecurity is not purely “economic” and is strongly intertwined with the cultural elements behind populist support. For cultural elements, we do not

refer to post-materialist “cultural backlash” theory such as Inglehart and Norris’s (2019) (e.g., as attitudes towards post-materialist societies, such as gender equality, migration and LGBTQI issues), but to the cultural components that work and financial security carry. Indeed, work and financial security not only have an intrinsic meaning in voters’ lives of supporting their lives in material ways, but they also have an extrinsic value in respect to the status and recognition that men and women have in the society and that bring them security. Overcoming the simplistic opposition between the culture and the economy, recent analyses have stressed a continuum between economic and cultural factors behind populism and a self-reinforcing pattern between the two. Lamont (2018) and Bonikowski (2017), for example, have stressed that the rise of right-wing populism in the US is connected to status threat and recognition gaps that emerge from economic neoliberal shifts. Similarly, Hall and Gidron (2017) link the loss of social status to deindustrialization and to the economic passage to the knowledge economy and the rise of insecurity; they interpret the loss of social status particularly among (low-educated) men as both an economic process of losing material resources and a cultural process of reduced status that drives men in particular towards supporting RPR parties. The findings of this research relate to previous classic research in cultural sociology that had found a loss of recognition and social status to be particularly relevant for working class men (Lamont, 2009).

Does this mean that women’s insecurity does not translate into populist support? We lack analyses that examine both work and financial insecurity in relation to populist support and can only clarify the role that both play in relation to populist voting across genders. Existing research on insecurity indicates that women are particularly affected by the increasing level of precarity in work and lives (Barnes and Weller, 2020). Interestingly, studies that do not distinguish between men and women but examines different aspects of insecurity (i.e. work and financial insecurity) found that financial insecurity is even more important than work insecurity in explaining populist voting (Zhirnov et al, 2023) and hence suggest that financial insecurity (given its ability to capture the dissatisfaction of the non-working population) could increase the likelihood of both men and women to support populist parties.

Based on the literature illustrated above regarding how different varieties of insecurity affect men and women, we test two hypotheses on how regarding the fact that the relationship between insecurity and populism may be is gendered:

Hypothesis 1: Men experiencing job dissatisfaction and work pressure are more likely to vote for populist parties, particularly for RPR parties;

Hypothesis 2: All voters (men and women) experiencing financial insecurity are more likely to vote for populist parties (RPR and RPL parties).

As the indicators of work insecurity and financial insecurity come from different datasets (EWCS and ESS) we cannot investigate the cumulative effect of work and financial insecurity in the present study. We therefore postulate that work and financial insecurity would have separate effects.

4. Methodology and Data

Data

To analyze the relationship between work-related insecurity and support for populism parties in Europe, we need to combine two data sources: the European Social Survey (ESS), and the European Working Conditions Survey (EWCS). We use the 2018 ESS survey that contains 20,902 observations, and the 2015 EWCS survey that contains 27,972 observations. EWCS is a survey on workers while ESS on the full population, so we consider only the subsample of workers for ESS in this analysis.³ The former includes information on the political preferences of respondents, while the latter provides representative data on subjective and objective labor market insecurity

³ Other ESS rounds are available that are closer in time to the EWCS round in 2015 that we use (e.g., ESS 2016). However, we decided to use the ESS round in 2018 to capture the post-Brexit momentum in the support for populism in Europe, given its sociological relevance in the literature.

(precarity) and financial insecurity. We consider a sample of 23 European countries: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden and Switzerland.⁴

Measuring populism

We classify parties into populist and non-populist parties by using the PopuList (Rooduijn et al., 2019). This project uses the ideational definition to list all populist parties, from 31 European countries, that have been represented in parliament or have won at least 2 percent of the votes in an election since 1989. Conversely, parties that are not included in the PopuList but have won more than 2 percent of the votes or had legislative representation at any point since 1989 are considered non-populist. We used the ParlGov database (Döring and Manow, 2021) to identify such parties. To classify any smaller parties still unaccounted for, we use the expert-based continuous measures of populism by POPPA (Meijers and Zaslove, 2020), VDem (Lührmann et al., 2020), and GPS (Norris, 2019), as well as the Timbro Authoritarian Populism Index (Timbro, 2019). We classified parties as left, center, or right using the following sources (in hierarchical order): PopuList (Rooduijn et al., 2019), CHES (Bakker et al., 2020), POPPA (Meijers and Zaslove, 2020), VDem (Lührmann et al., 2020), GPS (Norris, 2019), ParlGov, and EES Voter Study (Schmitt et al., 2014), TIMBRO (Timbro, 2019). As the populist center is only present in Italy, we do not have a separate investigation of this group in our analyses.

Measuring work and financial insecurity

Taking inspiration from previous research on the rise of work pressure in Europe that uses the same dataset (Lopes et al, 2014), we select several work-related items in the EWCS that measure work pressure and job dissatisfaction. We synthesize the selected seven variables in two factors through a factor analysis and using a principal-factor method to analyze the correlation matrix⁵. The analysis retained only two factors of which the eigenvalues—the variance explained by that

⁴ We exclude Croatia, Romania, Portugal, and the United Kingdom.

⁵ The factor loadings are computed using the squared multiple correlations as estimates of the commonality.

particular factor out of the total variance—are greater than one Kaiser criterion: 2.9 for the first factor and 1.16 for the second factor. Once factors and the factor loading have been estimated, we apply an orthogonal rotation (to ensure that the factors are not correlated to each other) that maximizes the sum of the variances of the squared loadings. The factor loading associated with the two factors and their relative uniqueness are reported in Table 2 below.⁶

We extract two dimensions of work-related insecurity: high work pressure that captures high speed, tight deadlines, and the negative effects of work on health; and job dissatisfaction that contains aspects of work quality that are both material and cultural (a perception that the pay is unfair, they have bad prospects at work, and receive low recognition at work. Overall, these items allow us to investigate whether individuals feel dissatisfaction at work either for intrinsic reasons (low pay or prospects) or for the extrinsic aspect of recognition (see Lamont, 2009). We also consider financial insecurity using an item that is already in the ESS—whether individuals are finding it comfortable, are coping, or are finding it difficult or very difficult on present income (we consider the response “finding it difficult or very difficult” as a proxy of financial insecurity).

Table 1. Measures of work-related insecurity in the EWCS

	Variable names	Max level of insecurity	Scale	Variables coded as insecurity
Do you think your health or safety is at risk because of your work?	health_at_risk	1	1-2	1
Does your work affect your health?	health_damaged	2	1-3	2
Considering all my efforts and achievements in my job, I feel I get paid appropriately [To what extent do you agree or disagree with the following statements about your job?]	unfair_pay	5	1-5	3-5
My job offers good prospects for career advancement [To what extent do you	bad_prospects	5	1-5	3-5

⁶ The uniqueness defines the percentage of variance not shared with other variables in the overall factor model. High values of uniqueness mean a low relevance of variables in the factor model. Values greater than 0.6 are considered high.

agree or disagree with the following statements about your job?]				
I receive the recognition I deserve for my work [To what extent do you agree or disagree with the following statements about your job?]	no_recognition	5	1-5	3-5
Does your job involve working at very high speed?	high_speed	1	1-5	1-2
Does your job involve working to tight deadlines	tight_deadlines	1	1-5	1-2

Table 2. Results of factor analysis

Dimension	High work pressure	Job dissatisfaction
Health at risk	0.86	
Damaged health	0.87	
Unfair pay		0.69
Bad prospects		0.62
No recognition		0.74
High speed	0.31	
Tight deadlines	0.43	

[The rationale for using synthetic statistical matching](#)

Previous studies testing the effects of work or financial insecurity on populism have often used weighted online datasets to overcome the lack of insecurity-based variables in probability sampling datasets (Antonucci et al, 2021; Zhirnov et al, 2023). In the present study we intended to enlarge the analysis of insecurity by connecting different probability-sampling datasets via statistical matching (SM).

Other scholars in the field have attempted to expand the operationalization of insecurity through similar attempts but they have used group average-based imputation technique (GA). For example, Abou-Chadi and Kurer (2021) have combined ESS with EU-SILC by imputing group averages from EU-SILC to ESS (for a similar technique, see also Derndorfer, forthcoming). In this way, they obtained information about household risk that was lacking from the use of ESS, and they used this information to investigate the risk within the household. As we show in Figure 2 below, if we had to use the group average-based imputation technique (GA) to combine the ESS and the EWCS⁷, we would have a distribution where the values are concentrated across the means. Hence, while the GA is quite intuitive and easy to employ, it inevitably leads to a loss of information at the individual level by producing skewed aggregate distributions. To avoid this crucial limitation, we propose to use a micro- approach called statistical matching (SM) (also called Synthetic Matching or Data Fusion) that allows generating a new complete micro-data file where information for all the variables of interest is available for each unit. To create a new micro-data file, we find a corresponding unit in a certain dataset for each unit in another dataset based on their shared characteristics. Using this technique allows us to reproduce the density of the distribution of our variables in the EWCS results. The technique we use is more computationally intense compared to the approach used by Abou-Chadi and Kurer (2021), but this allows for more granularity.

The statistical matching procedure

In this article we use Statistical Matching (SM) that aims to integrate two or more data sources that do not contain the same units into a complete data file.⁸ Kadane (1978) and Rubin (1974) were the first to propose matching techniques based on nonparametric approaches. The definition of SM has since then been formalized by D’Orazio et al. (2006).

In order to test our hypotheses, we need to expand the set of explanations about work and financial insecurity we have in ESS and integrate them with the information considered in EWCS. The SM

⁷ We apply the group-average imputation (GA) technique by calculating the averages in respect to country, gender, age and ISCO levels.

⁸ Other methods that allow one to integrate datasets include methods such as record linkage (RL).

process consists of integrating two or more data sources (in our case, surveys) that refer to the same target population and that contain shared variables.⁹ Specifically, the basic framework in statistical matching consists of two data sources, A and B, a set of variables X available in both datasets, and Y and Z, the target variables, that are never jointly observed. In other words, variable Y is only in data A, and variable Z is only in survey B. We can conceptualize this as a statistical missing data problem in which Z is missing in A. Through SM we create a synthetic dataset in which X, Y, and Z are jointly observed.

SM relies on three main assumptions: The two datasets are representative samples of the same target population; the common variable X follows the same definitions and has the same distribution in the two datasets; and there is independence between variables Y and Z conditional on X common matching variables—in other words, the relationship between Y and Z is fully explained by the matching variables (Conditional Independence Assumption).¹⁰ We use nonparametric approaches as the parametric approach carries the risk of misspecification. Moreover, as we have three target variables (voting for populist parties, high work pressure, and job dissatisfaction), this makes the estimation very complex and carries the risk that the parameters to estimate the model would not be sufficient.

We assume that the ESS dataset is the recipient dataset and the EWCS dataset the donor, so that in the synthetic dataset each record in the ESS is associated to the closest unit in the EWCS, according to the distance on selected common variables in matching. There are two main reasons for this decision: The ESS has a smaller sample number, and it is the standard procedure to choose the smaller file as the recipient (D’Orazio et al, 2006). In fact, if the smaller file were to serve as the donor, certain records within the file might be imputed multiple times in the recipient file, thus artificially altering the variability of the distribution of the imputed variable in the synthetic dataset. The second reason is that we want to use specific variables (i.e., income deciles unified in income groups, finding it difficult with coping on present income, trade union membership) in the

⁹ The number of individuals in both samples is negligible because we wish to match similar individuals. On the contrary, in other methods (e.g., record linkage) we need to have identical units to be matched on.

¹⁰ In reality, the Conditional Independence Assumption (CIA) rarely holds as it leads to a risk of identification problem, and it cannot be tested from the datasets. The effectiveness of a matching exercise heavily relies on the capacity of the matching variables to accurately predict the specific information intended for transfer from the donor to the recipient file.

ESS in the analysis on the synthetic dataset. Hence, our final synthetic dataset will contain 20,902 observations, equal to the number of observations in the ESS.

To obtain the synthetic dataset we employ a step-by-step procedure using the R package StatMatch (D’Orazio et al., 2022). The SM procedure consists of five steps:

1. Select the target variables Y and Z , observed distinctly in the two data sources. The target variables are: populist votes (from the ESS) and the two factors of work-related insecurity—high work pressure and job dissatisfaction (from the EWCS).
2. Identify all common variables (X), shared by the two data sources, to select the matching variables. This stage concerns three main steps, illustrated in more detail in Appendix 1:
 - a. Harmonize common variables (X), adjusting for different definitions and classifications. If it is not possible to harmonize, the variable must be discarded.
 - b. Check the accuracy and adjust for missing values as the common variable should not be missing.
 - c. Check frequency distribution of common variables. If data sources are a representative sample of the same population, they should share the same marginal and joint distributions. The set of common variables shared by ESS and EWCS concerns socio-economic and demographic characteristics—country, gender, age, the highest level of education, the type of contract, the managerial position, NACE code, ISCO code, health conditions (see Appendix, Table A1).
3. Select matching variables. Even if all common variables can potentially be used, some of them would be discarded depending on the aims of the analyses and the explanatory power they have. The latter criterion is checked by testing the similarity of distributions, such as the Cramer’s V coefficient (D’Orazio et al., 2006), or by using more complex tests that consider the overall predictive power of the matching variables. We use the method illustrated by D’Orazio et al. (2019) to identify the subset of X matching variables and reduce uncertainty.¹¹ This method, detailed in the Appendix, allows us to avoid selecting too many and, thus, a lot of parameters to estimate. After the tests, we decided to consider

¹¹ “The uncertainty is caused by unavailability of data for estimating parameters describing the association between variables not jointly observed in a single data source” (D’Orazio et al., 2017: 433).

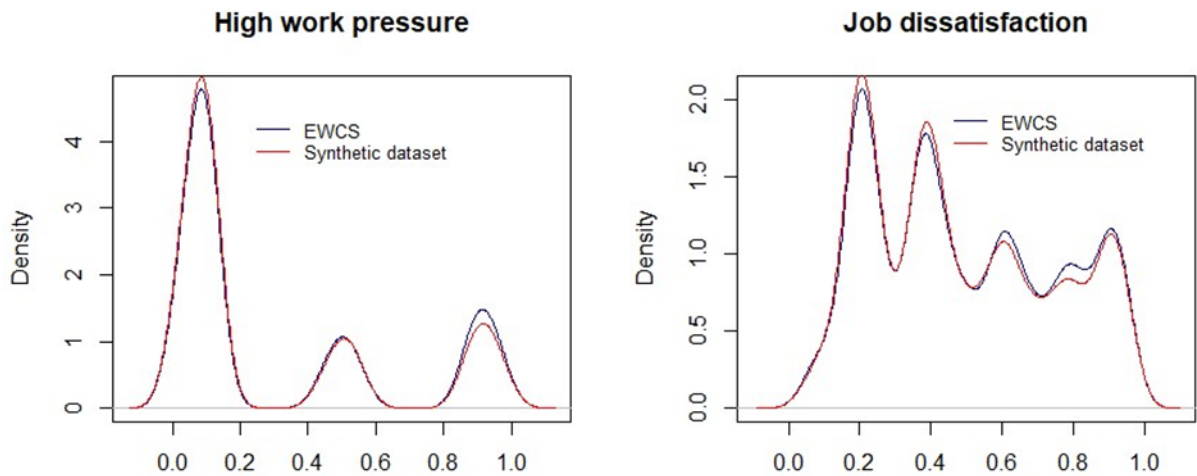
as matching variables: health condition, gender, age group, education, type of contract, ISCO1, NACE, and country.¹²

4. Once the matching variables have been defined, apply hot deck imputation techniques through computation. We use a constrained ($k=2$) nearest neighbor distance hot deck approach that considers the Gower distance. This process consists of searching the nearest neighbor of each unit in the data recipient (ESS) and in the donor dataset (EWCS), according to a distance computed on the matching variables. Before the selection is made, the units in both datasets are grouped into homogeneous strata (i.e., fixed classes), according to the value of key demographic variables. We use gender, country, and age group as fixed classes to refine statistical matching and reduce the likelihood of a random assignment. As the next step, the whole set of likely donors is chosen within each fixed class, to minimize the overall matching distance. In the case of more donors with the minimum distance, the selection made by the algorithm is random with the fixed classes. For example, a French woman in the EWCS who is aged between 25-35 will be selected to match a French woman in the ESS in the same age group and who has the minimum distance in respect to the highest education level, the health conditions, the type of contract, the ISCO1 position and the NACE sector.
5. After having obtained a matched dataset, evaluate the quality of the matching and check if the synthetic dataset is as close as possible to the original files in respect to the distribution. The quality of our SM is confirmed using density plots, as shown in Figure 2, and by two main tests (D'Orazio et al, 2006): the Hellinger distances and the total variation index. The tests show that the distribution for high work pressure and job dissatisfaction in the synthetic dataset is very close to the distribution in the EWCS: the

¹² Age group consists of 4 classes: less than 25; between 25 and 35; between 35 and 45, more than 45. The highest level of education refers to 3 main levels: less than primary and primary; lower secondary, upper secondary, post-secondary non tertiary; short-cycle tertiary, bachelor or equivalent, master or equivalent and doctoral or equivalent. Type of contract is classified in: self-employee, unlimited contract, limited contract, no contract. NACE is referred to 6 macro levels: Agriculture A+B (1 to 3); Industry C+D+E (5 to 39); Construction F (41 to 43); Wholesale and retail trade G+H+I (45 to 56); Financial J+K (58 to 66); Other services L+M+N+O+P (>68); ISCO-08 divisions into 8 major groups: Managers; Professional; Technicians and associate professionals; Clerical support workers and Service and sales workers; Skilled agricultural, forestry and fishery workers and Craft related trades workers; Plant and machine operators, and assemblers and Elementary occupations. Subjective general health (How is your health in general?) refers to 5 levels from Very good to Very bad.

total variation index is 0.02 and the Hellinger Distance is 0.014¹³. Moreover, we also check the density plots of high work pressure and job dissatisfaction by considering each category of matching variables—the distribution of high work pressure between men and women for the synthetic dataset and for EWCS (see Appendix, Figure A1).

Figure 2. Variations in density between the original dataset and the synthetic dataset of precarity/high work pressure and job dissatisfaction



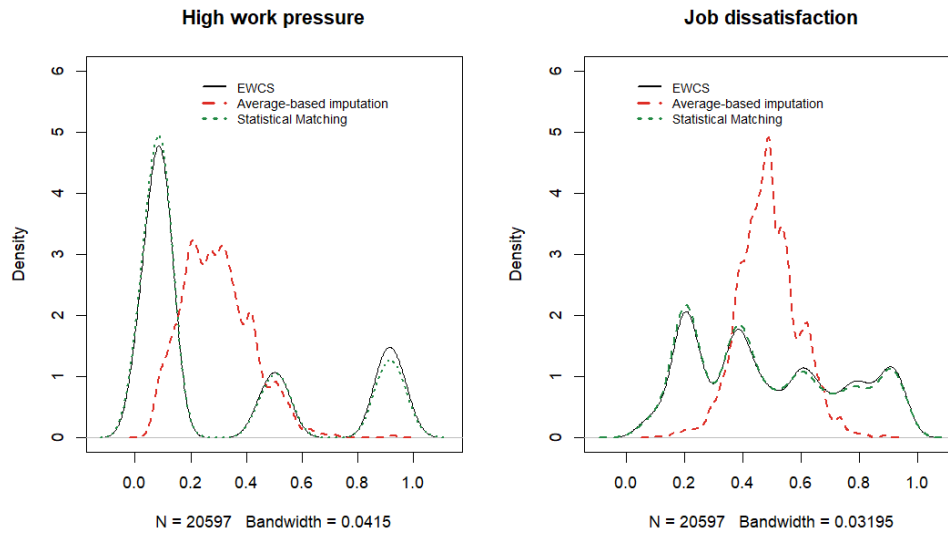
We also check the balance in terms of common variables by considering categories of work insecurity. Specifically, we split the population according to insecurity levels using the median and check if there is a balance for common variables between EWCS (the donor dataset) and the synthetic dataset.

Comparing the outcomes of matching: SM versus GA

As mentioned earlier, using group average-based imputation technique (GA) results in a loss of information and data granularity. We can show this by comparing the density plots using SM and GA. Firstly, the general distribution of high Work pressure and job dissatisfaction in the synthetic GA dataset differs dramatically from that in the EWCS dataset, as illustrated in Figure 3 below.

¹³ The rule of thumb for affirm similarity is $tvd \leq 0.03$ and Hellinger distances ≤ 0.05 .

Figure 3 Variations in density between the original dataset, the synthetic dataset using SM technique and the dataset using average-based imputation



Secondly, the discrepancy worsens when considering the distribution of these factors within categories of common variables, such as when comparing the distribution of high work pressure between men and women in the synthetic dataset and the EWCS dataset. As shown in Figure A1 in the Appendix, the distribution of both high work pressure and job dissatisfaction of each matching variable for the EWCS and using the SM synthetic dataset is very similar, but this is not the case with the outcome of the GA synthetic dataset. For example, in the GA synthetic dataset, the distribution for women is underestimated for higher values of high work pressure. Furthermore, when repeating the analyses by using a dataset obtained via the average-based imputation technique, the significant associations in the probit between SM and GA differ (see the discussion in the Findings section below and in the Appendix).

5. Findings

Estimating the relationship between populism and insecurity

Once a unique micro dataset was obtained, we investigated if a relationship exists between the variables of work insecurity and populist support, considering RPR and RPL differences. Firstly, we test the difference in means of high work pressure and job dissatisfaction for populist and mainstream voters. The mean of high work pressure and job dissatisfaction among those who vote populist parties is higher when compared to the mean of those who vote for mainstream parties. These differences become greater when we analyze the breakdown for men and women, but, as shown in Table 2, the difference is significant and positive only in respect to job dissatisfaction.

Table 2 – t test between men and women

High work pressure		Job dissatisfaction	
	Mean		Mean
MAINSTREAM VOTERS	0.299	MAINSTREAM VOTERS	0.481
POPULIST VOTERS	0.288	POPULIST VOTERS	0.512
diff	-0.011	diff	0.031 ***
MALE		MALE	
MAINSTREAM VOTERS	0.311	MAINSTREAM VOTERS	0.454
POPULIST VOTERS	0.312	POPULIST VOTERS	0.504
diff	0.001	diff	0.05 ***
FEMALE		FEMALE	
MAINSTREAM VOTERS	0.288	MAINSTREAM VOTERS	0.508
POPULIST VOTERS	0.251	POPULIST VOTERS	0.525
diff	-0.037 *	diff	0.017 ***

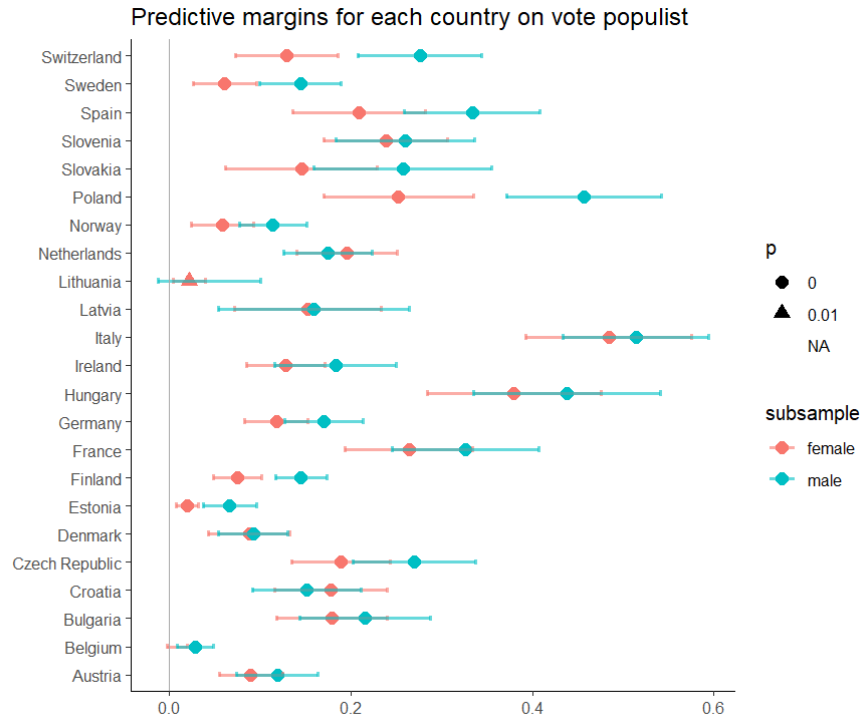
We use a nonlinear model, the probit¹⁴, to investigate if there exists an association between populism and insecurity. In all specifications, we control for all variables used in the matching—education level, contract, age, NACE, ISCO, health feeling—and use country fixed effects. To avoid estimating too many parameters, we aggregate health levels into a binary variable and ISCO levels in three categories (high-skilled, semi-skilled and low-skilled). To avoid omitted variable bias, we add a set of controls: income deciles grouped in five groups, trade union membership, and a binary variable that identifies those who find it difficult or very difficult to live on present income. We also consider two control variables of political attitudes in the ESS: cultural openness and system fairness, extracted through factor analysis (see Appendix, Table A.2).

Insecurity and populist voting: work insecurity for men, financial insecurity for women

The results indicate a positive and strong significant association between job dissatisfaction and RPR voting/general populist voting, and a significant association between high work pressure and RPR voting for men. Figure 4 below presents the predictive margins for each country on voting populist for each subsample. The overall probability of voting populist within a country is higher for men than for women, even if this difference is statistically significant only in a few countries.

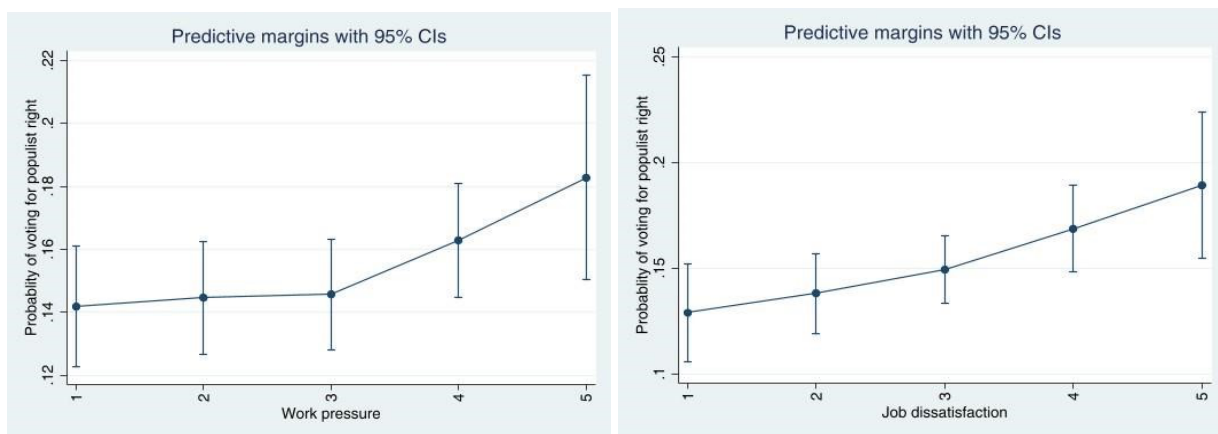
Figure 4 Predictive margins for each country on vote populist (total)

¹⁴ Note that during this stage we remove from the analyses those who declare do not have a contract (around 2% of the sample).



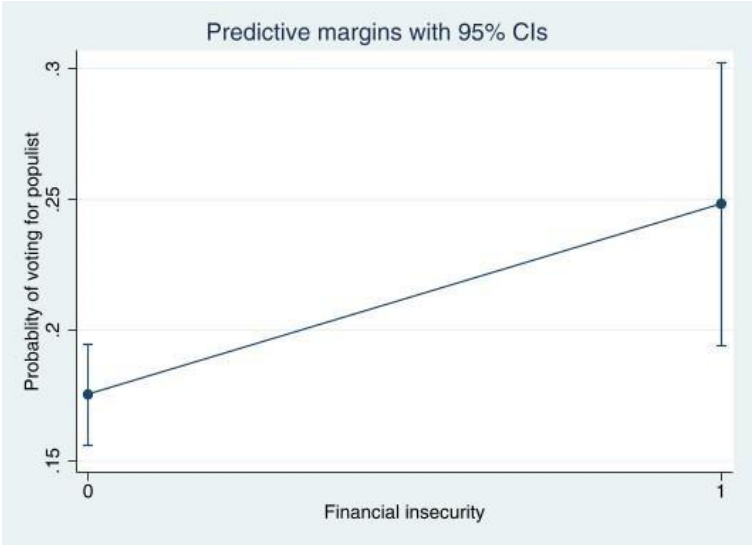
Increase in work pressure results in an increase in the probability of voting for populist right parties for men from 14 to 18 percent, while the probability of voting for right wing populism in presence of job dissatisfaction increases from 12 percent to almost 20 percent, as shown by Figure 5 below (NB the figure below uses a 5-point scale on the X/Y axes).

Figure 5 – Predictive margins of voting populist right for men



When examining the role of insecurity in voting among women, work insecurity does not seem, at first, to be associated with RPR or general populist vote, although a weak association exists between job dissatisfaction and voting for RPL among women. Hence, we bring the dimension of financial insecurity that, according to our hypothesis, could be more relevant for women: We test the association between financial insecurity and populism by using the variable in the ESS that measures how individuals feel in relation to present income (comfortable, coping, difficult or very difficult). Here we find that women who find it difficult or very difficult to live on present income are more likely to vote for populist parties in general (considering total populist party voting, namely, adding RPR and RPL voting). All the models control for ISCO, therefore for social class/levels of skills. As indicated by Figure 6, when women find it difficult or very difficult to cope with present income, the probability for (general) populist increases from 18 percent to 25 percent (NB the figure below uses a 5-point scale on the X/Y axes).

Figure 6 – Predictive margins of voting populist for women



We repeat the same analyses using the synthetic GA dataset (see results in the Appendix, Table B2). It is important to stress that the significant associations regarding work insecurity and RPR

support among men we found using the SM technique are not present using the group-based imputation technique, possibly as an effect of the density plots being skewed towards the middle, as mentioned in the Methodology section above. Therefore, using the GA dataset results in a significant loss of information. The significant association present between financial insecurity and total populist voting among women is present also in the GA dataset, although it should be noted that, in the case of the SM dataset, we are able to control for work insecurity and we are, therefore, able to test how the different types of insecurity are associated with voting patterns between genders (a type of analysis that it is not possible to conduct with the GA dataset).

6. Discussion and Conclusion: Using SM to expand the measurement of insecurity in relation to populism for men and women

Insecurity is increasingly mentioned in studies on populism, but it is often operationalized in a narrow way, only including the fear of losing one's job, due to the limited measures of insecurity in widely-used probability sampling datasets, such as the ESS. Having to use a limited set of indicators available in these surveys, the studies that investigate insecurity focus often solely on job tenure insecurity. To overcome the methodological (and conceptual) limitation in the field, this study used sophisticated methods of data matching to match the ESS to the EWCS and therefore enlarge the set of explanations that pertain to work-insecurity—investigating financial insecurity already present in the ESS and, most importantly, controlling for both forms of insecurity (work and financial) within the same study using probability-sampling datasets. To our knowledge, this is the first study that uses Statistical Matching in the field of populist voting.

We examine and investigate the political effects of two measures of work-related insecurity: high work pressure and job dissatisfaction (the latter include: unfair pay, bad prospects and low/lack of recognition). As we discussed in the first part, the gendered effect of insecurity in relation to populist voting is largely unknown: While multiple studies have discussed the role that job dissatisfaction and recognition could play for men (Gidron and Hall, 2017; Lamont, 2018), the effect of financial insecurity on women are unclear. This might lead scholars of populism to presume that insecurity is only relevant among men. Hence, we hypothesize that work insecurity

is positively associated with right-wing populism for men, while financial insecurity is positively associated with general populist support for both men and women.

The article makes several contributions to the debate on insecurity in voting. If previous studies have tested insecurity by using online surveys (see Zhirnov et al, 2023), we try to overcome the limits of generalizability in these studies by using data-matching techniques through probability sampling datasets (EWCS and ESS). The indicators used in this study examine the combined effect of economic and cultural insecurity (Gidron and Hall, 2017), as we have a measure of high work pressure that captures the rise of work intensification (Lopes et al, 2014; Gallie et al., 2017) and a measure of job dissatisfaction that contains elements of work that are both material and cultural—unfair pay, bad prospects, no recognition (Lamont, 2009).

The findings confirm the hypothesis that there exists an association between work dissatisfaction and populist voting among men. The results offer the first empirical testing to what previous studies in the sociology of populism have suspected, confirming that the rise of populism emerges from gaps in work recognition and reduced opportunities at work among men in particular (Lamont, 2018; Gidron and Hall, 2017). We were able to test job dissatisfaction which contains, among others, a variable that captured the lack of recognition, in addition to limited possibilities at work. We also find a less strong association between work pressure and populist voting among men which confirms existing studies (Antonucci et al, 2021). Overall, these findings show that the rise of work pressure and work intensification in Europe (Gallie, 2017; Lopes et al, 2014; Gallie et al., 2017), as well as the perceived lack of recognition of workers (Lamont, 2018), are associated with populist right voting. Regarding the second hypothesis, we do not find an association between financial insecurity and general populist voting for both men and women, but we do find an association between financial insecurity and populist voting that concerns women specifically, using a model that, unlike the existing studies, is able to control for work-related insecurity given the use of SM.

The findings show that the role of insecurity for women in driving populist support might be even more hidden, but it is still present, as we show that women that express having difficulties in coping on present income, also controlling for work insecurity, are more likely to

vote for populist parties in general (not specifically for populist right-wing parties). Our findings help to clarify the gender gap in populist voting through insecurity (Spierings and Zaslove, 2017) and confirm the idea, raised by Sauer (2020), that populism is also a reflection of the high level of insecurity experienced by women. According to Sauer (2020), the fact that “male labor became more precarious and the ‘family income’ declined as a consequence of neoliberal restructuring” affects women as it affects men (Sauer, 2020: 29), though our results indicates that for women it might be perceived more through financial insecurity (i.e. women having less resources in the household to take care of family or individual commitments) than via work insecurity. We find an association between financial insecurity and general populist voting (RPR and RPL) for women, probably explained by the fact that, as suggested by Spierings and Zaslove (2017), women are more likely to support populist left in addition to the populist right (see also Sauer, 2020).

The findings lead to several implications for future research concerning the socio-economic triggers of populist voting. First, at the methodological level, the article proposes Statistical Matching as a potential solution to the lack of variety and breadth in the use of socio-economic explanations in relation to voting. We show that compared to group-based imputation, SM produces a dataset with the original density while GA techniques produce a skewed distribution. The different density profiles of the datasets results affect the findings. Through the proposed SM technique, we are able to find significant associations that do not come up in a dataset built via GA imputation. Second, the findings stress the importance of adding various sets of variables to measure financial insecurity to overcome the focus on tenure insecurity, and the importance of investigating multiple forms of insecurity while controlling for both forms of insecurity (work and financial insecurity). This permits one to consider not only the role of men in driving populist right support (Gidron and Hall, 2017), but also to include the socio-economic drivers of populist voting for women that might emerge from the everyday experiences of financial insecurity, rather than from changes in the workplace. Future studies in the field should overcome the focus on male-centered notions of insecurity by allowing more variables to be tested in relation to populist voting that include a wider range of variables on financial insecurity, for example by conducting statistical matching between the ESS and the EU-SILC. Furthermore, future research should clarify some of the ongoing issues in this field that we were not able to

address with this article, such as the cumulative effects of financial and work insecurity, as well as the relation between insecurity and the perceived decline in social status.

References

Abou-Chadi, T., Kurer, T. (2021). Economic risk within the household and voting for the radical right. *World Politics*, 73(3), 482–511.

Abi-Hassan, Sahar (2017): “Populism and Gender.” In: Cristóbal Rovira Kaltwasser/Paul Taggart/Paulina Ochoa Espejo/Pierre Ostiguy (eds.): *The Oxford Handbook on Populism*. Oxford: Oxford University Press, pp. 2-22.

Antonucci, L., Seo, H., & Strobl, M. (2024). Quantity over quality? How economic factors and welfare state interventions affected job insecurity and job quality before, during and after the economic crises. *Social Policy & Administration*, 58(2), 277-298.

Antonucci, L., D’Ippoliti, C., Horvath, L., Krouwel, K. (2021). What’s work got to do with it? How precarity influences radical party support in France and the Netherlands. *Sociological Research Online*.

Antonucci, L., Horvath, L., Kutiyski, Y., Krouwel, A. (2017). The malaise of the squeezed middle: Challenging the narrative of the ‘left behind’ Brexiter. *Competition & Change*, 21(3), 211–229.

Azmanova, A. (2020). Precarity capitalism. In Azmanova, A. *Capitalism on Edge*. Columbia University Press, pp. 105–136.

Bakker, R., Hooghe, L., Jolly, S., Marks, G., Polk, J., Rovny, J., Steenbergen, M., Vachudova, M. A. (2019). 2019 Chapel Hill Expert Survey. Version 2019.1. Chapel Hill, NC: University of North Carolina, Chapel Hill. chesdata.eu.

Bale, T. and Dunphy, R. (2011). In from the cold? Left parties and government involvement since 1989. *Comparative European Politics*, 9(3), 269–91.

Barnes, T. and Weller, S. A. (2020). Becoming Precarious? Precarious Work and Life Trajectories After Retrenchment. *Critical Sociology*, 46(4–5), 527–541.

Berman, S. and Snegovaya, M. (2019). Populism and the decline of social democracy. *Journal of Democracy*, 30 (3), 5–19.

Bonikowski, B. (2017). Ethno-nationalist populism and the mobilization of collective resentment. *The British journal of sociology*, 68, 181-213.

Burgoon, B. and Dekker, F. (2010). Flexible employment, economic insecurity and social policy preferences in Europe. *Journal of European Social Policy*, 20(2), 126-141.

Castanho Silva, B. (2019). ‘He’s not one of them!’ Antiestablishment supporters of populist governments in Bolivia and Ecuador. *The Journal of Politics*, 81(3), 1085–89.

Castanho Silva, B., Jungkunz, S., Helbling, M., Littvay, L. (2020). An empirical comparison of seven populist attitudes scales. *Political Research Quarterly*, 73(2), 409–24.

Cohen, D. (2017). Risk exposure and voting radical right: A mediation analysis of the socio-economic foundations of radical right support. Paper presented at the ECPR General Conference.

Dassonneville, R., Blais, A., Hooghe, M. and Deschouwer, K. (2020). The effects of survey mode and sampling in Belgian election studies: A comparison of a national probability face-to-face survey and a nonprobability Internet survey. *Acta Politica*, 55 (2), 175–98.

Derndorfer, J. (forthcoming) The Anxious Middle Class: Risk of Downward Mobility and Support for Radical Right Parties across Western Europe, *Review of Income and Wealth*

Döring, H., Manow, P. (2021). Parliaments and Governments Database (ParlGov): Information on Parties, Elections and Cabinets in Modern Democracies. Development Version.
<http://www.parlgov.org/>.

D'Orazio, M., Di Zio, M. and Scanu, M. (2006). *Statistical matching: Theory and practice*. John Wiley & Sons.

D'Orazio, M., Di Zio, M. and Scanu, M. (2019). “Auxiliary variable selection in a statistical matching problem.” In *Analysis of Integrated Data* (pp. 101-120). Chapman and Hall/CRC.

D'Orazio, M., Di Zio, M., and Scanu, M. (2017). The use of uncertainty to choose matching variables in statistical matching. *International Journal of Approximate Reasoning*, 90, 433-440.

D'Orazio, M. (2022). Package ‘StatMatch’.
<http://mirrors.nics.utk.edu/cran/web/packages/StatMatch/StatMatch.pdf>

Emmenegger, P., Marx, P. and Schraff, D. (2015). Labour market disadvantage, political orientations and voting: How adverse labour market experiences translate into electoral behaviour. *Socio-Economic Review*, 13(2), 189–213.

Gallie, D. (2017). The quality of work in a changing labour market. *Social Policy & Administration*, 51(2), 226–43.

Gallie, D., Felstead, A., Green, F., Inanc, H. (2017). The hidden face of job insecurity. *Work, Employment and Society*, 31(1), 36–53.

Gidron, N. and Hall, P. (2017). The politics of social status: Economic and cultural roots of the populist right. *The British Journal of Sociology*, 68(S1), S57–84.

Green, F. and Mostafa, T. (2012). Trends in job quality in Europe. European Union.

Harteveld, E. (2016). Winning the ‘losers’ but losing the ‘winners’? The electoral consequences of the radical right moving to the economic left. *Electoral Studies*, 44, 225–234.

Hawkins, K. A., Rovira Kaltwasser, C. Andreadis, I. (2018). The activation of populist attitudes. *Government and Opposition*, 1–25.

Hieda, T., Zenkyo, M., Nishikawa, M. (2021). Do populists support populism? An examination through an online survey following the 2017 Tokyo Metropolitan Assembly election. *Party Politics*, 27(2), 317–28.

Hooghe, M. and Teepe, W. (2007). Party profiles on the web: An analysis of the logfiles of non-partisan interactive political Internet sites in the 2003 and 2004 election campaigns in Belgium. *New Media & Society*, 9(6), 965–85.

Inglehart, R. F. (2020). *Cultural evolution: People’s motivations are changing, and reshaping the world*, Cambridge: Cambridge University Press.

Kalleberg, A. L. (2018). *Precarious Lives Job Insecurity and Well-Being in Rich Democracies*. Cambridge, UK Polity Press.

Kurer, T., Palier, B. (2019). Shrinking and shouting: The political revolt of the declining middle in times of employment polarization. *Research & Politics*, 6(1), 2053168019831164.

Lamont, M. (2018). Addressing recognition gaps: Destigmatization and the reduction of inequality. *American Sociological Review*, 83(3), 419-444.

Lamont, M. (2009). *The dignity of working men: Morality and the boundaries of race, class, and immigration*. Harvard University Press.

Leulescu, A., & Agafitei, M. (2013). Statistical matching: a model based approach for data integration. *Eurostat-Methodologies and Working papers*, 10-2.

Lopes, H., Lagoa, S., & Calapez, T. (2014). Work autonomy, work pressure, and job satisfaction: An analysis of European Union countries. *The Economic and Labour Relations Review*, 25(2), 306–326.

Lührmann, A., Medzihorsky, L., Hindle, G., Lindberg, S. I. (2020). New Global Data on Political Parties: V-Party. Briefing Paper 9. Gothenburg: V-Dem Institute.

Margalit, Y. (2019). Economic insecurity and the causes of populism, reconsidered. *Journal of Economic Perspectives*, 33(4), 152–170.

Meijers, M. J. and Zaslove, A. (2020). Populism and Political Parties Expert Survey 2018 (POPPA). Harvard Dataverse, V2.

Norris, P. (2019). Global Party Survey, 2019. Harvard Dataverse, V3.
<https://doi.org/10.7910/DVN/WMGNTNS>.

Norris, P. and Inglehart, R. (2019). *Cultural Backlash: Trump, Brexit, and the Rise of Authoritarian-Populism*. New York: Cambridge University Press.

Kadane, J.B. (1978) Some Statistical Problems in Merging Data Files; Office of Tax Analysis, U.S. Department of the Treasury: Washington, DC, USA.

Rooduijn, M. (2018). What unites the voter bases of populist parties? Comparing the electorates of 15 populist parties. *European Political Science Review*, 10(3), 351–68.

Rooduijn, M., Burgoon, B., Van Elsas, E. J., & Van de Werfhorst, H. G. (2017). Radical distinction: Support for radical left and radical right parties in Europe. *European Union Politics*, 18(4), 536-559.

Rooduijn, M., Van Kessel, S., Froio, C., Pirro, A. L. P., de Lange, S., Halikiopoulou, D., Lewis, P., Mudde, C., Taggart, P. (2020). The PopuList. An Overview of Populist, Far Right, Far Left and Eurosceptic Parties in Europe. Version 2.0. 2020. <https://popu-list.org/>.

Rosenbluth, F. and Weir, M. (2021). *Who Gets What? The New Politics of Insecurity*. Cambridge: Cambridge University Press.

Rovny, A. E. and Rovny, J. (2017). Outsiders at the ballot box: Operationalizations and political consequences of the insider-outsider dualism. *Socio-Economic Review*, 15(1), 161–185.

Rubin, D.B. (1974) Statistical matching using file concatenation with adjusted weights and multiple imputations. *J. Bus. Econ. Stat.* 4, 87–94.

Sauer, B. (2020). Authoritarian right-wing populism as masculinist identity politics. The role of affects. *Right-wing populism and gender: European perspectives and beyond*, 23-40.

Schmitt, H., Hobolt, S. B., Popa, S. A., Teperoglou, E. (2016). European Parliament Election Study 2014, Voter Study, First Post-Election Survey. GESIS Data Archive, Cologne. ZA5160. Data file Version 4.0.0.

Schwander, H. (2019). Are social democratic parties insider parties? Electoral strategies of social democratic parties in Western Europe in the age of dualization. *Comparative European Politics*, 17(5), 714–37.

Sipma, T., Lubbers, M., & Spierings, N. (2023). Working class economic insecurity and voting for radical right and radical left parties. *Social Science Research*, 109, 102778.

Spierings, N. and Zaslove, A. (2017). Gender, populist attitudes, and voting: explaining the gender gap in voting for populist radical right and populist radical left parties. *West European Politics*, 40(4), 821-847.

Spierings, N. and Zaslove, A. (2015). Gendering the vote for populist radical-right parties. *Patterns of Prejudice*, 49(1-2), 135-162.

Standing, G. (2011). *The Precariat: The New Dangerous Class*. London: Bloomsbury Academic.

Timbro. (2019). Timbro Authoritarianism Populism Index. Stockholm.
<https://populismindex.com/wp-content/uploads/2019/02/TAP2019C.pdf>.

Whelan, C.T., Nolan, B. and Maitre, B. (2017) Polarization or “Squeezed Middle” in the Great Recession?: A Comparative European Analysis of the Distribution of Economic Stress. *Social Indicators Research* 133, 163–184.

Vlandas, T. and Halikiopoulou, D. (2022). Welfare state policies and far right party support: moderating ‘insecurity effects’ among different social groups. *West European Politics*, 45(1), 24-49.

Winkler, W.E. (1995) Matching and record linkage. In G.P. Cox, D.A. Binder, B.N. Chinnappa, A. Christianson, M. Colledge and P.S. Kott (eds), *Business Survey Methods*, pp. 355–384. New York: Wiley.

Zhirnov, A., Antonucci, L., Thomeczek, J. P., Horvath, L., D’Ippoliti, C., Mongeau Ospina, C. A. & Kersting, N. (2023). Precarity and populism: explaining populist outlook and populist voting in Europe through subjective financial and work-related insecurity. *European Sociological Review*, jcad052.

Appendix

A.1 More details about Stage 2 and Stage 3 of the SM procedure for selecting matching variables

Stage 2

We identify all the common variables shared by the two data sources (X) as matching variables.

This stage concerns three main steps:

I. Harmonize common variables

We conduct adjustments to make compatible categories and increase the similarities between datasets. For example, we categorize a continuous variable for age, and we integrate the self-employment information in the variable that indicates the type of contract that a person has, in order to create a unique variable.

II. Check the accuracy and adjust for missing values.

After adjusting for different classification and categories, we check for the presence of missing values, and we impute them by using Random Forest techniques.

III. Check frequency distribution of common variables.

To check if the common variables share the same distribution in both datasets, as suggested in D’Orazio et al. (2022), and as shown in Table A.1 below, we perform a comparative analysis to identify the similarity between the marginal (joint) distribution of categorical variables. We consider:

- The dissimilarity index or total variation distance (tvd): It ranges from 0 (minimum dissimilarity) to 1 and can be interpreted as the smallest fraction of units that needs to be reclassified in order to make the distributions equal. Agresti’s rule of thumb states that the tvd has to be less or equal to 0.03.
- The overlap: It ranges from 0 to 1 (the distributions are equal).
- The Bhattacharyya coefficient: It ranges from 0 to 1 (the distributions are equal).
- The Hellinger's distance: It ranges from 0 (perfect similarity) to 1 (perfect dissimilarity).

The only variable we selected that is dissimilar among the EWCS and the ESS is the managerial position, so we discard it from the analyses. The highest level of education and ISCO1 are slightly above the threshold of the rule of thumb for tvd but not for the other measures; thus, we decide to keep it at this stage (though we eventually remove it from the selected matching variables, see below).

Table A1. Measures of similarity of the distributions

	tvd	overlap	Bhatt	Hell
Health condition	0.03	0.97	0.999	0.026
Gender	0.023	0.977	1	0.016
Age group	0.024	0.976	1	0.022
Education	0.061	0.939	0.998	0.045
Type of contract	0.012	0.988	1	0.011
Managerial position	0.158	0.842	0.983	0.132
ISCO1	0.059	0.941	0.997	0.051
NACE	0.026	0.974	0.999	0.027
Country	0.031	0.969	0.999	0.027

Stage 3

We use several methods to select the variables to be used in the matching. The first focuses on pairwise correlations between X common variables and Y and Z, respectively. We use the Cramer's V coefficient (D'Orazio et al., 2006), derived from the Pearson chi-square, adjusted by the minimum of the degree's freedom.¹⁵ In our case, given that we have 1 degree of freedom, 0.1 is considered small association, 0.3 medium association, and 0.5 large association. For populist votes, the highest level of education, the ISCO1 and the NACE show a small association, while the country variable shows a medium association. On the contrary, health feeling, gender, age, and contract show a very small association. For both insecurity factors, we observe small associations

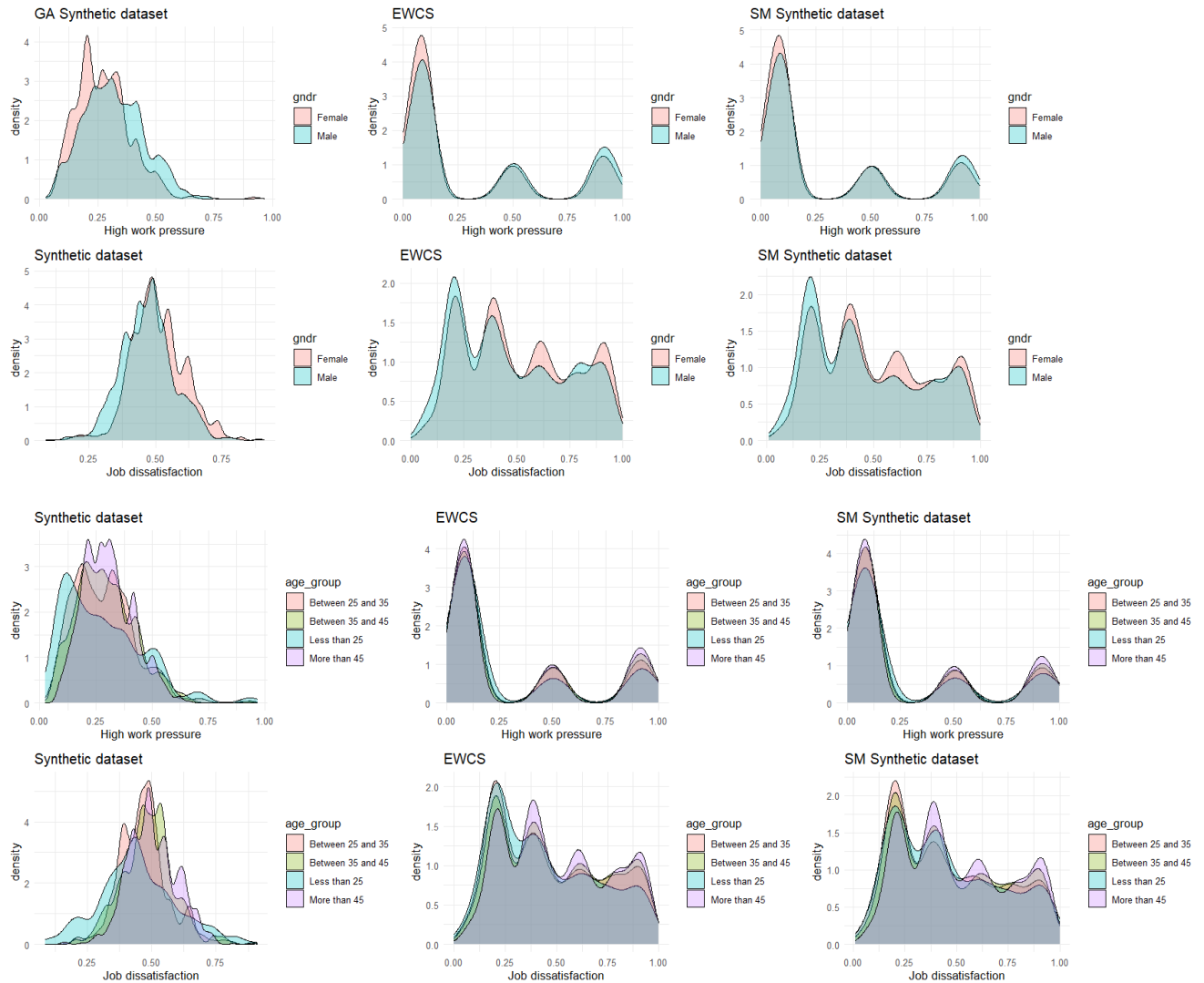
¹⁵ We categorize the factors of insecurity according to the median of their distributions.

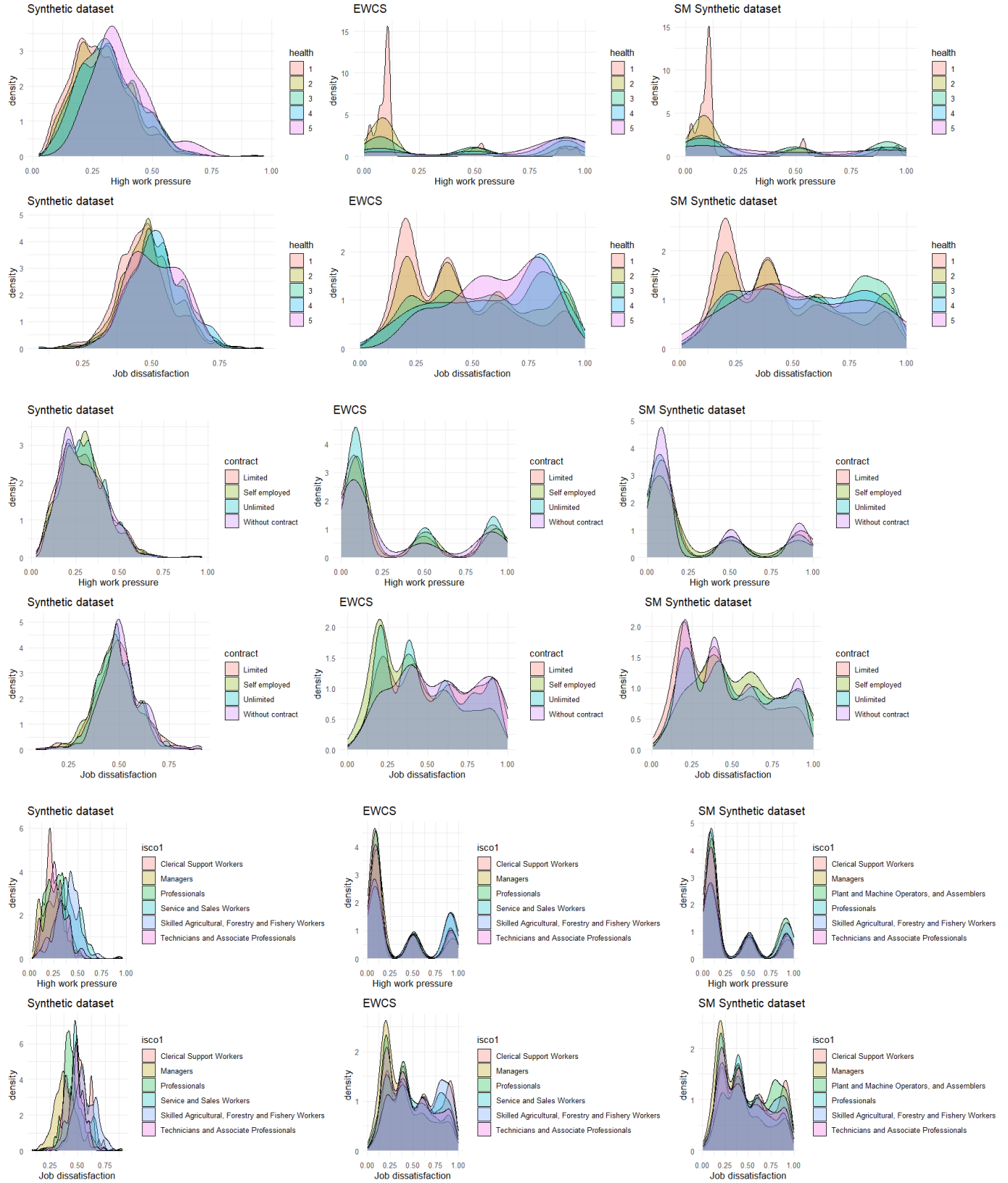
for health conditions, gender (only for high work pressure), education (only for job dissatisfaction) ISCO1, NACE (only for high work pressure) and country.

Even if separately the variables do not have high explanatory power, we are interested in considering their overall predictive power. Thus, a second method based on regression or logistic regressions in case of populist votes that estimates the multivariate relationships is used. Concerning populist voting, we divide the dataset in two: 80% of units that are used for model training, and a rest of 20% of units that are used for checking how the model performs on unseen data. Our model has an accuracy (i.e., the percentage between the number of times in which the model predicts correctly on the sum of correct and incorrect prediction), of 82%, hence much bigger than the cutoff value of 53%. Moreover, we estimate the precision, recall, and F1-score that are equal to 83%, 96% and 89%, respectively. Then, the area under the ROC curve is equal to 76%—a value that is considered as acceptable. For work pressure and job dissatisfaction, we implemented a leave-one-out cross validation and found a RMSE of, respectively, 32% and 38%.

D’Orazio et al. (2019) introduce a method to identify the subset of X matching variables more effective in reducing uncertainty (see also D’Orazio et al, 2017) and that allows us to avoid selecting too many parameters to estimate. In our case the best combination is given by country, health conditions, ISCO1, NACE. Nevertheless, given the importance of other predictors, we decide to consider all variables, except managerial position, as matching variables.

Figure A1. Distribution for the factor of High work pressure and Job dissatisfaction for each matching variable (gender, age group, type of contract, NACE, ISCO, health conditions, education) for the original dataset EWCS, the SM synthetic dataset and the GA synthetic datasets





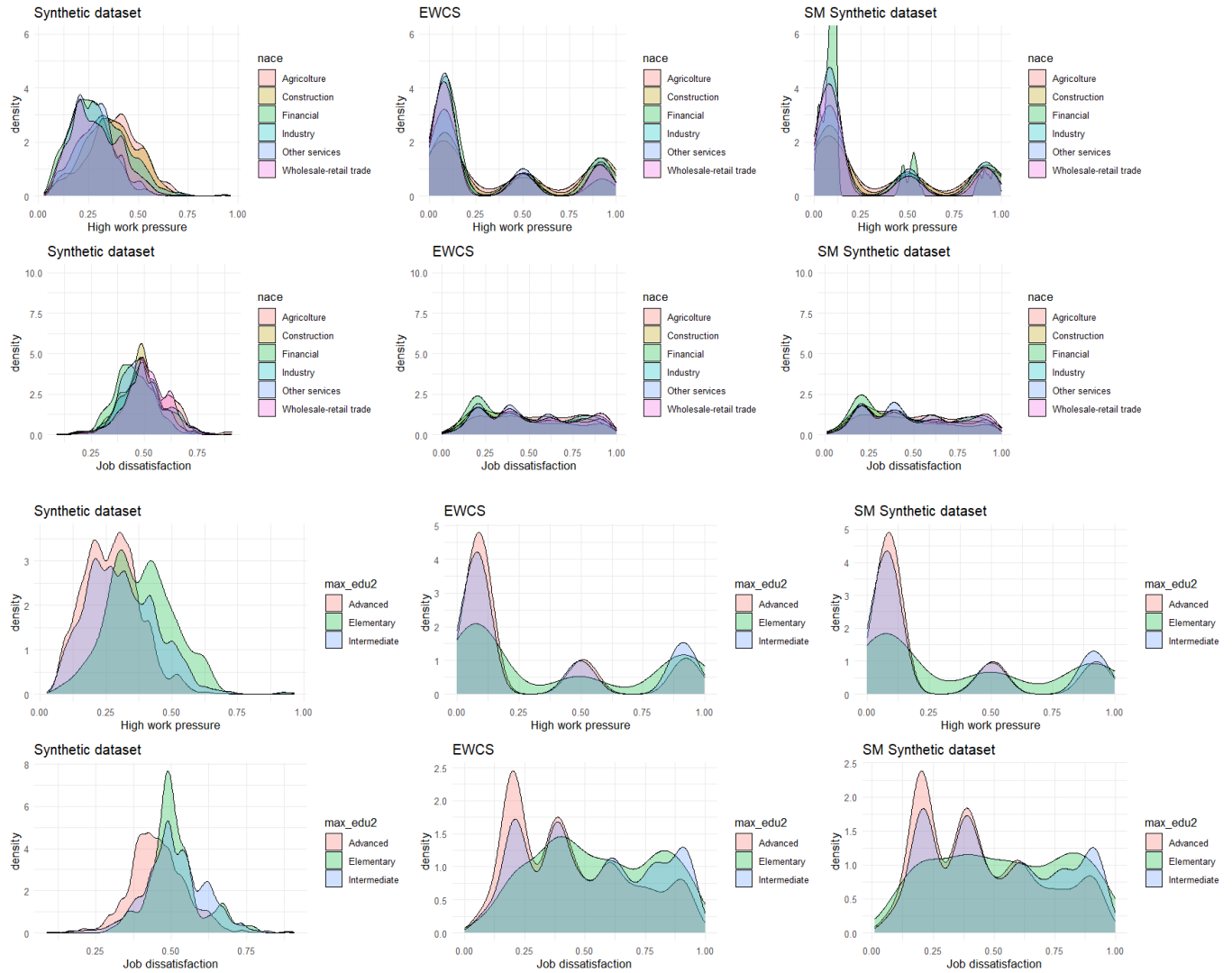


Table A2. Factor analysis for political factors in ESS (Varimax rotation)

	Cultural openness	Perceived fairness	Uniqueness
Lesbians/gays should be free	0.7526		0.3628
Adoption from same-sex couples	0.7206		0.4317
No ashamed of gay family	0.6636		0.4806
Allow non-EU immigrants	0.5688		0.5616
Immigration makes better country	0.5217		0.487
Immigration makes better economy	0.5004		0.5351

Immigration enriches cultural life	0.5969		0.4391
Approval of unmarried cohabitants	0.4084		0.8007
Fairness education in country		0.5587	0.5498
Fairness of job opportunities available in the country		0.5407	0.5362
Fairness personal job opportunities		0.4714	0.5951
Fairness personal education chances		0.4471	0.6074

B.1 Regression results with the use of synthetic statistical matching techniques

VARIABLES	FEMALE			MALE			TOT		
	Vote populist	PL	PR	Vote populist	PL	PR	Vote populist	PL	PR
High work pressure	-0.0484 (0.119)	0.0199 (0.209)	-0.0522 (0.138)	0.0855 (0.105)	-0.148 (0.207)	0.227** (0.107)	0.0379 (0.0799)	-0.0979 (0.155)	0.138 (0.0874)
Job dissatisfaction	-0.0300 (0.164)	0.00638 (0.299)	0.0294 (0.197)	0.196 (0.128)	-0.0606 (0.251)	0.373** (0.147)	0.0947 (0.0991)	-0.0144 (0.183)	0.212* (0.118)
Difficulty coping income	0.309*** (0.116)	0.336 (0.210)	0.173 (0.132)	-0.0198 (0.126)	-0.244 (0.236)	0.128 (0.135)	0.128 (0.0840)	-0.0102 (-0.157)	0.141 (0.0911)
Fairness	0.551 (0.428)	-0.679 (0.763)	1.884*** (0.463)	0.559 (0.372)	-2.619*** (0.698)	2.390*** (0.403)	0.583** (0.277)	-1.688*** (0.532)	2.181*** (0.290)
Progressivism	-2.462*** (0.390)	1.998*** (0.712)	-4.105*** (0.438)	-1.746*** (0.329)	2.755*** (0.707)	-3.799*** (0.362)	-2.000*** (0.250)	2.369*** (0.498)	-3.893*** (0.281)
Education_Intermediate	1.336*** (0.416)	-0.102 (0.170)	1.641*** (0.351)	-0.280 (0.291)	-0.293 (0.468)	-0.198 (0.322)	0.0871 (0.251)	-0.101 (0.433)	0.132 (0.302)
Education_Advanced	1.183*** (0.422)		1.353*** (0.361)	-0.536* (0.305)	-0.605 (0.496)	-0.438 (0.336)	-0.120 (0.257)	-0.213 (0.446)	-0.131 (0.306)
Contract_limited	-0.0494 (0.136)	-0.289 (0.219)	0.0653 (0.154)	-0.0401 (0.114)	-0.148 (0.226)	0.0195 (0.129)	-0.0129 (0.0819)	-0.182 (0.153)	0.0662 (0.0936)
Self_employed	0.195 (0.148)	-0.197 (0.304)	0.262* (0.159)	0.110 (0.125)	0.152 (0.242)	0.129 (0.117)	0.144 (0.0992)	0.0645 (0.189)	0.196** (0.0966)
Nace_Agriculture	0.646** (0.308)	0.864 (0.526)	0.290 (0.266)	0.0498 (0.206)	0.237 (0.368)	-0.0528 (0.169)	0.192 (0.177)	0.355 (0.299)	0.0155 (0.143)
Nace_Industry	0.0362 (0.128)	0.0845 (0.243)	0.0106 (0.145)	0.139 (0.0953)	-0.0309 (0.187)	0.247** (0.108)	0.117 (0.0724)	-0.00481 (0.141)	0.175** (0.0809)
Nace_Construction	0.188 (0.384)	1.019 (0.709)	-0.360 (0.345)	0.0242 (0.129)	0.119 (0.274)	0.0221 (0.152)	0.0675 (0.116)	0.219 (0.244)	-0.0283 (0.135)
Nace_Wholesale and retail trade	0.224** (0.0924)	0.101 (0.184)	0.199* (0.109)	0.174* (0.0990)	-0.0876 (0.196)	0.250** (0.112)	0.202*** (0.0670)	0.0150 (0.141)	0.222*** (0.0783)

Nace_Financial services	-0.0759 (0.174)	0.0512 (0.279)	-0.135 (0.153)	0.182 (0.140)	0.290 (0.205)	0.130 (0.135)	0.0902 (0.108)	0.221 (0.161)	0.0277 (0.0978)
ISCO1_Skilled	-0.165* (0.0958)	-0.124 (0.168)	-0.233** (0.116)	-0.118 (0.0910)	0.0490 (0.171)	-0.213** (0.0983)	-0.141** (0.0631)	-0.0558 (0.114)	-0.208*** (0.0699)
ISCO1_low skilled	0.136 (0.134)	0.134 (0.252)	0.187 (0.146)	0.0716 (0.101)	0.0441 (0.229)	0.0909 (0.109)	0.0711 (0.0788)	0.0436 (0.176)	0.0932 (0.0857)
Health feelings	0.206 (0.211)	-0.135 (0.501)	0.435* (0.228)	0.0817 (0.232)	0.359 (0.388)	0.0842 (0.277)	0.174 (0.150)	0.158 (0.298)	0.292 (0.186)
Age >35	-0.272*** (0.0976)	-0.273* (0.165)	-0.217** (0.110)	-0.202** (0.0852)	-0.184 (0.160)	-0.170* (0.0943)	-0.225*** (0.0616)	-0.211* (0.112)	-0.181*** (0.0672)
Income_3and4 decile	0.306* (0.161)	0.406 (0.287)	0.207 (0.187)	-0.207 (0.179)	-0.0506 (0.371)	-0.231 (0.209)	0.0565 (0.116)	0.195 (0.242)	-0.00796 (0.138)
Income_5and6 decile	0.342** (0.164)	0.161 (0.270)	0.353* (0.190)	0.0367 (0.169)	0.0686 (0.336)	0.0261 (0.190)	0.223* (0.115)	0.165 (0.216)	0.219 (0.135)
Income_7and8 decile	0.335** (0.158)	0.310 (0.262)	0.340* (0.182)	-0.149 (0.170)	-0.361 (0.350)	-0.0171 (0.194)	0.102 (0.111)	-0.0432 (0.212)	0.169 (0.130)
Income_9and10 decile	0.292* (0.170)	0.381 (0.273)	0.0757 (0.203)	-0.306* (0.172)	-0.582 (0.360)	-0.0449 (0.194)	-0.0137 (0.119)	-0.129 (0.230)	0.0451 (0.137)
Trade union	0.250*** (0.0930)	0.283* (0.147)	0.140 (0.110)	0.250*** (0.0852)	0.385*** (0.143)	0.111 (0.0885)	0.243*** (0.0663)	0.341*** (0.110)	0.113 (0.0705)
Male							0.154*** (0.0536)	0.213** (0.101)	0.0981 (0.0637)
Constant	-1.701*** (0.603)	-2.601*** (0.674)	-1.854*** (0.613)	-0.136 (0.503)	-0.920 (0.860)	-0.554 (0.606)	-0.676* (0.397)	-1.933*** (0.667)	-0.768 (0.483)
COUNTRIES' DUMMIES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,957	3,264	12,531	12,649	3,090	12,303	9,660	2,529	9,284

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: "Difficulty coping income," "Health feelings," "Age > 35," "Trade union," and "Male" are dummy variables. "Education" is a factor variable, with "elementary education" as the baseline. "Contract" is a factor variable, with "unlimited contract" as the baseline. "NACE" is a factor variable,

with "Other Services" as the baseline. "ISCO1" is a factor variable, with "Semi-skilled" as the baseline. "Income" is a factor variable, with the "1st and 2nd decile" as the baseline.

B.2 Regression results with the use of group-average imputation techniques

VARIABLES	FEMALE			MALE			ALL		
	Vote populist	PL	PR	Vote populist	PL	PR	Vote populist	PL	PR
High work pressure	-0.453 (0.395)	0.321 (1.006)	-0.421 (0.440)	-0.0265 (0.327)	-0.0352 (0.778)	0.0934 (0.345)	-0.151 (0.234)	-0.00994 (0.576)	-0.0711 (0.248)
Job dissatisfaction	-0.373 (0.425)	-0.799 (1.007)	-0.212 (0.465)	-0.295 (0.393)	-1.104 (0.841)	-0.127 (0.451)	-0.294 (0.282)	-1.057* (0.591)	-0.206 (0.321)
Difficulty coping income	0.283*** (0.101)	0.180 (0.191)	0.224* (0.115)	-0.0142 (0.107)	-0.230 (0.223)	0.0484 (0.112)	0.116 (0.0739)	-0.0607 (0.148)	0.126 (0.0789)
Fairness	0.400 (0.369)	-0.933 (0.652)	1.462*** (0.415)	0.582* (0.318)	-2.322*** (0.636)	1.999*** (0.344)	0.503** (0.237)	-1.639*** (0.451)	1.786*** (0.256)
Openness	-1.837*** (0.359)	2.549*** (0.732)	-3.748*** (0.410)	-2.137*** (0.294)	3.038*** (0.674)	-4.222*** (0.319)	-2.030*** (0.230)	2.711*** (0.465)	-4.061*** (0.249)
Education_Intermediate	0.980*** (0.369)	-0.0776 (0.156)	0.705 (0.435)	-0.00805 (0.243)	-0.0802 (0.412)	0.0144 (0.291)	0.208 (0.211)	0.0307 (0.399)	0.176 (0.261)
Education_Advanced	0.890** (0.377)		0.449 (0.440)	-0.284 (0.256)	-0.410 (0.438)	-0.234 (0.301)	0.0112 (0.217)	-0.0993 (0.412)	-0.0776 (0.264)
Contract_limited	-0.0356 (0.110)	-0.231 (0.178)	0.0921 (0.128)	-0.0319 (0.0970)	-0.0717 (0.182)	-0.00966 (0.110)	-0.0214 (0.0712)	-0.114 (0.125)	0.0372 (0.0816)
Self_employed	0.137 (0.110)	0.0786 (0.180)	0.0264 (0.132)	0.0197 (0.0877)	-0.0718 (0.192)	0.0141 (0.0864)	0.0718 (0.0674)	0.00540 (0.130)	0.0416 (0.0712)
Nace_Agriculture	0.386 (0.260)	0.512 (0.492)	0.308 (0.275)	0.00576 (0.163)	0.247 (0.336)	-0.0143 (0.149)	0.0957 (0.137)	0.268 (0.264)	0.0741 (0.132)
Nace_Industry	-0.116 (0.112)	-0.0614 (0.234)	-0.00849 (0.132)	0.0716 (0.0845)	-0.000955 (0.172)	0.166* (0.0955)	0.0290 (0.0638)	-0.0320 (0.126)	0.125* (0.0727)

Nace_Construction	-0.175 (0.302)	0.540 (0.576)	-0.456 (0.300)	0.0883 (0.107)	0.0262 (0.267)	0.109 (0.124)	0.0796 (0.0939)	0.0658 (0.234)	0.0695 (0.109)
Nace_Wholesale and retail trade	0.168** (0.0799)	0.0880 (0.165)	0.199** (0.0926)	0.165* (0.0846)	0.0109 (0.158)	0.251*** (0.0945)	0.170*** (0.0590)	0.0533 (0.115)	0.229*** (0.0663)
Nace_Financial services	-0.189 (0.162)	-0.170 (0.263)	0.00377 (0.165)	0.0818 (0.132)	0.244 (0.194)	0.0605 (0.128)	-0.0162 (0.102)	0.0823 (0.153)	0.0414 (0.102)
ISCO1_Skilled	-0.206** (0.0898)	-0.173 (0.161)	-0.179 (0.113)	-0.0948 (0.0859)	0.0947 (0.147)	-0.195** (0.0937)	-0.140** (0.0583)	-0.0503 (0.0999)	-0.182*** (0.0684)
ISCO1_low skilled	0.194* (0.118)	0.199 (0.243)	0.182 (0.129)	0.127 (0.0973)	0.0921 (0.229)	0.146 (0.101)	0.122* (0.0737)	0.104 (0.179)	0.144* (0.0782)
Health feelings	0.121 (0.188)	-0.159 (0.378)	0.322 (0.210)	0.0580 (0.194)	0.190 (0.361)	0.126 (0.232)	0.113 (0.132)	0.0355 (0.272)	0.259 (0.162)
Age >35	-0.201** (0.0844)	-0.123 (0.164)	-0.158 (0.0976)	-0.182** (0.0751)	-0.130 (0.148)	-0.163** (0.0814)	-0.198*** (0.0536)	-0.113 (0.103)	-0.164*** (0.0604)
Income_3and4 decile	0.137 (0.139)	0.179 (0.258)	0.146 (0.157)	-0.129 (0.158)	-0.0153 (0.341)	-0.257 (0.177)	0.0148 (0.0984)	0.133 (0.210)	-0.0495 (0.117)
Income_5and6 decile	0.259* (0.137)	0.0822 (0.246)	0.375** (0.154)	-0.0555 (0.149)	-0.0356 (0.301)	-0.127 (0.169)	0.110 (0.0967)	0.0918 (0.185)	0.123 (0.115)
Income_7and8 decile	0.269** (0.132)	0.283 (0.246)	0.333** (0.151)	-0.156 (0.150)	-0.359 (0.307)	-0.0829 (0.166)	0.0495 (0.0935)	-0.0179 (0.177)	0.119 (0.110)
Income_9and10 decile	0.126 (0.138)	0.152 (0.222)	0.0526 (0.170)	-0.284* (0.154)	-0.650** (0.319)	-0.0692 (0.178)	-0.0896 (0.1000)	-0.236 (0.191)	0.0268 (0.122)
Trade union	0.179** (0.0802)	0.175 (0.144)	0.139 (0.0955)	0.150** (0.0720)	0.228* (0.122)	0.0669 (0.0741)	0.163*** (0.0552)	0.220** (0.0936)	0.0959 (0.0605)
Male							0.173*** (0.0488)	0.127 (0.0892)	0.124** (0.0561)
Constant	-1.225** (0.587)	-2.384** (0.960)	-0.695 (0.675)	0.0972 (0.472)	-1.039 (0.871)	0.0648 (0.576)	-0.405 (0.367)	-1.753*** (0.644)	-0.208 (0.452)
COUNTRIES' DUMMIES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,424	3,670	13,928	14,406	3,680	13,925	12,439	3,334	11,928

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: "Difficulty coping income," "Health feelings," "Age > 35," "Trade union," and "Male" are dummy variables. "Education" is a factor variable, with "elementary education" as the baseline. "Contract" is a factor variable, with "unlimited contract" as the baseline. "NACE" is a factor variable, with "Other Services" as the baseline. "ISCO1" is a factor variable, with "Semi-skilled" as the baseline. "Income" is a factor variable, with the "1st and 2nd decile" as the baseline.