

Institutional effects on the presence of trade unions at the workplace. Moderation in a multilevel setting

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Zoltán FAZEKAS

University of Vienna,

Department of Methods in the Social Sciences

Rooseveltplatz 2/4, 414, A-1090, Vienna

zoltan.fazekas@univie.ac.at

Previous research on unionization found that the presence of a union at a workplace is an important individual level determinant of membership. The present paper brings further evidence to this assertion, but also nuances the conclusions of previous studies by introducing and testing institutional moderation effects. Thus, in countries with Ghent-systems, having a union at workplace is less important, since membership probability is already very high. Conversely, if there are extension mechanisms there is less incentive to join a trade union, and this is not compensated even when there is an active union at the workplace. The conclusions are based on multilevel analysis carried out for 21 European countries, where the results are statistically and substantively significant. Overall, the paper contributes to a better understanding of the interplay between individual and institutional level determinants of membership in a cross-country setting.

Keywords: trade union membership, extension mechanisms, multilevel analysis

1 Introduction

Analyzing unionization and its determinants is a well established research agenda in the study of industrial relations. Unanimous findings are that trade unions face a decline in membership, but these trends are not uniform across European countries, generating country specific evolution of union density (Visser, 2003). The cross-country differences are emphasized by the challenges of globalization and the divergent responses given by the actors, responses that are contingent on their possibilities (Raess, 2006; Silver, 2003). If the logic of representativeness (Riley, 1997; Traxler, 2006) is accepted, then the number of members becomes a good proxy for evaluating the strength of these organizations. Even though union density is influenced by labor market and unemployment changes, there is a clear analytical link between union density and membership numbers (Checci and Lucifora, 2002; Riley, 1997; Schnabel, 2003).

Understanding the micro-level individual determinants of trade union membership is crucial for any diagnosis of the possibilities of trade unions in to handle old and new challenges. But as Schnabel and Wagner (2007: 27) posit, ‘in addition to these four groups of variables studied [personal characteristics, workplace characteristics, attitudes and social factors], *institutional factors* can influence unionization’. Thus, in order to fully grasp the individual determinants of trade union membership, one should not disregard the macro-level context.

The present paper integrates the two levels by employing a multilevel analysis, which grants the possibility to identify and better explain cross-country differences in unionization. I build on the historical institutionalist research tradition and propose a theoretical framework for the link between the macro-level and the individual level. The

motivation to join a trade union depends on how the union is perceived and what the outcome of the cost-benefit evaluation of membership is. Even though trade unions may choose from a wide array of strategies to increase the number of their members, these strategies are embedded in the institutional context that also acts as a limitation.

Consequently, the link between the individual and the macro-level depends on each and every trade union's adopted strategy, but these strategies are chosen in a context of restrictions. Trade unions operating in a Ghent-system country have more possible offerings for their members compared to what a trade union could offer in a country where there is neither tripartite negotiation, nor are the benefits negotiated available for non-members as well. By this logic, not just the actual role of the trade union as a labor representation organization is important, but also the image associated with it. Without claiming that unions are not different in their potential in each country, I focus on the cross-country differences.

Previous research points to differences generated by institutional factors in union density (Checci and Visser, 2005; Ebbinghaus and Visser, 1999), but considerations related to the individual determinants of trade union membership come more as explanations for different results (Schnabel and Wagner, 2007). Thus, the main contribution of this paper lies in the fact that the effects of the institutional variables on individual determinants will be hypothesized a priori, and tested empirically using random intercept and random slope multilevel model (Luke 2004; Steenbergen and Jones, 2002). Previous results on the institutional determinants of cross-country differences in union density will be used to hypothesize the effects of these variables on the individual probabilities of being a member of a trade union. I analyze 21 European countries, and the selection itself makes sure that countries with different institutional

characteristics are included in the second-level sample.

The remaining part of the paper proceeds as follows. The next section introduces the theoretical framework based on previous research. The method and the models are then presented, together with considerations about the data and the analysis itself. Finally, results and conclusions are presented in the last two sections of the paper.

2 Determinants of trade union membership

Studies in trade union membership can be categorized as either fitting the *structural determinist approach* or the *individual approach* (Riley, 1997; Schnabel, 2003). These approaches differ in the unit of analysis and in the type of possible conclusions. The *structural deterministic* stream looks at macro-economic influences on different trade union evolutions, whereas the direct concern of the second approach is to investigate individual level determinants of membership, and hence membership can become the dependent variable (Riley, 1997; Schnabel, 2003).

2.1 Explaining union density

From the *structural deterministic perspective*, it can be said that, although cross-country differences in trade union density and trends in union density are strongly determined by cyclical business and structural factors, institutional factors have an important moderating role (Blanchflower, 2006; Blaschke, 2000; Checci and Lucifora, 2002; Checci and Visser, 2005; Ebbinghaus and Visser, 1999; Riley, 1997). Consequently, unemployment, inflation and the industrial structure do influence the trade union density and membership¹, but labor market institutions, the legal framework and the roles of trade unions determine major cross-country differences (Blanchflower, 2006;

Blaschke, 2000; Checci and Visser, 2005; Ebbinghaus and Visser, 1999). Additionally, although contested (Soskice, 1990), the Calmfors and Driffill U-shaped relationship between bargaining centralization (or coordination) and unemployment (Driffill, 2006) - amended by considerations the business-cycle theory that posits a negative relationship between unemployment and trade union membership (Ebbinghaus and Visser, 1999) - hints into an detectable, but not causal, indirect relationship between bargaining centralization (or coordination) and unionization.

Looking at the *Ghent-system* (Blanchflower, 2006; Blaschke 2000; Checci and Visser, 2005; Ebbinghaus and Visser, 1999; Scruggs, 2002), the theory suggests a clear positive effect on union density, and this is done through the mechanism of extended recruitment assistance - linked to the presence of unions at workplaces (Blaschke, 2000; Ebbinghaus and Visser. 1999).

Most of these studies look at the evolution in time in different countries, trying to identify and analyze trends that are influenced by these factors. Dropping numbers of membership and density became already a truism (Visser, 2003), and there is a theoretical possibility to assert that this trend re-enforces itself, with unions continually losing power. This is also referred to as the *inertia* of union density (Checci and Visser, 2005; Ebbinghaus and Visser, 1999), as lower union density reduces the social costs of not-being a member.

2.2 Explaining unionization on the individual level

Studies that look at the individual level determinants of membership can either compare the characteristics of members and non-members (Blanchflower, 2006) and make

¹Union density is one of the most frequently used indicators (absolute number of members as well), but since it relies on self-reported trade union data, it has to be corrected for this bias (Blanchflower, 2006; Blaschke, 2000).

inferences based on these differences², or take the membership as a dependent variable and seek to establish regression type questions (Schnabel and Wagner, 2007). The theoretical premises of these analyses are grounded on assertions related to the union itself and the interest to join a union and its voluntary membership and socially embedded aspects - closed or open shop 'system' (Booth and Chatterji, 1995; Cornwell and Harrison, 2004; Jones and McKenna, 1994; Newton and Mcfarlane Shore, 1992). The different conception about the inherent motivations for becoming a member - or leaving the organization (Visser, 2002) - is linked to how the trade union is seen as an organization. Whichever type of approach is used, previous research suggests a couple of individual level determinants that are significant in the analysis of trade union membership (Riley, 1997; Schnabel, 2003; Schnabel and Wagner, 2007).

Personal characteristics such as age³, gender, and education influence unionization. Men tend to be more inclined to join trade unions, and theory also suggests that less educated individuals tend to become members more often. This consideration is also linked with the type of jobs that is accessible with lower education (blue-collar jobs). Full time employment as a contractual relationship also increases unionization. Given the 'socialist roots' and the social democratic facilitation of trade unions (Schnabel and Wagner, 2007), a more left position on a political left-right scale has a positive effect on membership. Furthermore, taking into consideration the higher rate of unionization in the public sector where the establishments are bigger, the size of the establishment matters, directly increasing the probability of membership.

²The actual method does not allow for detecting relationships of 'determination'; it is more a highly descriptive approach.

³ A reversed U-shaped relationship is between age and membership is identified, meaning that low and high ages are associated with lower probability of membership. This is the theoretical and statistical reason for including a squared transformation of age (Blanchflower, 2006; Visser, 2002). It is expected that this variable will have a similar effect to the one displayed by age, but with the opposite sign.

Workplace-related variables are also determinants of membership. According to the frustration-aggression theory, low satisfaction and low workplace control increases the frustration, determining the individuals to seek solutions in organizations that protect them as workers (Schnabel and Wagner, 2007). The actual presence of a union at the workplace was proven to be the most important determinant of membership, because it offers easy and cheap access to the workers in the union. Perceptions about the role of trade unions (the need for strong trade unions) have a strong effect on membership, although endogeneity problems may be encountered (Schnabel and Wagner, 2007). In the case of the latter two determinants, the institutional context should indeed matter the most, as it will be elaborated further on. Both the individualistic and the deterministic approaches yield significant input on how to set up multilevel analysis for investigating unionization as an individual level phenomenon.

3 Multilevel framework

Implications of the new institutionalism (March and Olsen, 1984; Hall and Taylor, 1996; March and Olsen 2005) serve as an approach that can accommodate these two levels, offering help in drafting a framework for the cross-level expectations.

Employing this approach enables the researcher to present institutions not just as exogenous factors, but as ‘a relatively enduring collection of rules and organized practices [...] that empower and constrain actors differently and make them more or less capable of acting according to prescriptive rules of appropriateness’ (March and Olsen, 1984: 4). Shaped by these definitional characteristics, institutions create ‘elements of order and predictability’ containing ‘comprehensible routine processes’ (March and Olsen, 1984: 5).

No matter which sub-stream of institutionalism is adopted, it is clear from this

approach that institutions are (1) more than just a reflection of environmental forces and (2) more than a neutral arena for individuals' performances shaped by independent preferences (March and Olsen, 1984; Hall and Taylor, 1996; Immergut, 1998). Also, they are not simply a mere product of aggregated interests, but confer a framework through the processes and routines for individual interests and implicitly behavior.

More precisely, historical institutionalism's calculus approach (Hall and Taylor, 1996) helps in drawing better cross-level links when discussing unionization. In this case, the definition of institution remains similar to the one detailed above, with emphasis on the 'formal and informal procedures, routines, norms and conventions in the organizational structure of the polity or political economy' (Hall and Taylor, 1996: 938). On the individual level, there is an underlying utility maximization and strategic calculation assumption, but institutions act as providers of 'greater or lesser degrees of certainty about the present and future behavior of other actors' (Hall and Taylor, 1996: 939). Conferring a range of possible and predictable actions or decisions, trade unions are influenced by the institutional factors. This would be the first part of the macro-micro relationship that one could also label as meso level. Given previously established rules and structures, trade unions as actors can adapt and choose their strategies. This scenario is mostly confirmed by the findings of Ebbinghaus and Visser (1999).

Nevertheless, the argument can be extended. If we look at the individual level focusing on what gains membership brings, trade unions are indeed the actors that make the 'offers'. But their possible offerings are highly embedded into the institutional structure, reflected through previous agreements, tripartite practices, their relationship with the state or business representatives. These factors act as constraints – also because they determine what direct resources the unions will get, determining what could be the

realistic benefit gained by a potential membership. In this sense, the existing institutional setting assures the structure and the action possibilities of the trade unions, acting as a cue for the individuals. These cues – alongside, of course, the trade union communication and member attracting efforts – help workers in seeing what the role of the trade unions is, or could be⁴. Following this stream of argument, concentration or centralization of wage bargaining is hard to present as direct influencers of individual membership, since the possible benefits are vague and not very plausible. Furthermore, even if union density reflects the ‘power’ of labor in a country, expected to trigger even higher individual membership, this indicator is rather endogenous. A clear test of this factor is feasible only if there is an exact date of joining a trade union for each individual, otherwise the circularity is inevitable (and union density would account for almost all the variance because of this).

Hence, two institutional characteristics’ effects will be tested in this paper. Extending the direct effects of extension mechanisms and Ghent-system, it is hypothesized that these factors also have a moderation effect on individual level determinants of unionization. As discussed above, the link between the levels are trade unions as actors. The best available individual level proxy is whether there is a union at the respondent’s workplace or not. Before formulating the exact hypotheses, a preliminary hypothesis is tested in the paper. Given the institutional cross-country differences, I expect that incorporating and explaining cross-country variance enhances model performances compared to a simple individual level model.

Substantively, given the high benefits and high institutionalization associated with a Ghent-system, it is expected that it increases the incentives to become a trade union

⁴ This approach has the underlying assumption that workers and members do act rationally and seek higher utility, in a setting where they do have at least some information about trade unions and their

member, increasing the probability of membership implicitly. However, I hypothesize that this effect is so strong that the presence of a union at the workplace will be less of a concern for the individual. Secondly, if agreements cover non-unionized workers by extension, this implies a higher possibility to free-ride. Thus, the more extension mechanisms manifest themselves in a country, the less attractive membership should be. Normally, when there is a union at the workplace, this increases individual membership. I hypothesize that this effect loses power when there are strong extension mechanisms in play, since even if there is a union, the general benefits can be accessed without membership. Overall, I hypothesize that the favorable condition for membership associated with the presence of unions at the workplace becomes less important in the aforementioned institutional settings.

4 Data and analysis

The empirical test of the hypotheses formulated in the previous section and the formal model will be carried out on the micro-data from the European Social Survey 2002/2003 (6.1) and the country-data from ICTWSS dataset prepared by Jelle Visser. Since the overwhelming part of the ESS was implemented in 2002, the matching for the country level variables is done for the 2002.

Furthermore, the theoretical link refers to individuals' perception of trade unions and the expected benefits associated with membership, but there is no individual level data on the date of joining the organization. Even if some ESS interviews were carried out in the early periods of 2003, it is still justified to take the preceding values of the institutional variables, since the retrospective impact on the individual responses is

activity.

more significant than a prospective one⁵. The final sample size was 13796 observations nested in the following 21 countries: Austria, Belgium, Czech Republic, Denmark, Germany, Finland, France, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

As a first step, an individual level model is employed for the pooled dataset, without differentiating between observations based on countries. This model follows the analysis used by Schnabel and Wagner (2007). In some cases data availability reasons (parental education) generated the need to reduce the first level parameters that will be estimated, or further modifications were done. The goal of this step is to see whether there is – and how much – unexplained variance remaining if we employ the individual level model. If there is still a substantive amount of remainder variance, either another model should be employed, or this one should be further enhanced.

The dependent variable is trade union membership (coded 1 for member and 0 for non-member)⁶. The set of personal characteristics used as explanatory variables contains: respondent's age in years and the age squared⁷ - in order to take into account the above mentioned U shaped relationship, and the respondent's education. The level of education is decomposed into two binary variables, where the first one covers respondents who have completed below upper secondary education, and the second one covers respondents who have completed second stage of tertiary education. Since these are binary variables, if both of them are 0 it means that the respondent has completed

⁵Even if the respondent of ESS fills in the questionnaire in the spring of 2003, there is sufficient sense to believe that (s)he is more influenced by the 'institutional setting' of 2002 than the one that will reflect 2003. Moreover, the changes in one year at the level of these institutional variables are very small.

⁶The present analysis also sticks to defining membership 1 only if the respondent is currently a member of a trade union. This approach is also useful to avoid possible analytical problems related to the decisions of joining or leaving a trade union (Visser, 2002).

⁷Because of the huge variance of the age squared, for software related reasons this value was divided by 100.

middle level education. This recoding is necessary, because the education level initially had only three categories, making it impossible to consider it as continuous. The type of employment is gauged by two binary variables: the first takes the value of 1 if the respondent is a blue-collar worker, and the second takes the value of 1 if the respondent has a fulltime working contract. The last personal characteristic included is the self-positioning on the political left-right scale, ranging from 0 (left) to 10 (right).

Workplace related variables are also included on the list of independent variables. The establishment size is operationalized in two binary variables, one reflecting establishment sizes between 10 and 24 employees, the other reflecting establishment sizes of 500 employees. Thus, similar to the case of education, medium size establishments (between 24 and 500 employees) are reflected when both binary variables take the value of 0. Job satisfaction, as a crucial element for testing the frustration-aggression theory, is also included in the model as an 11 scale ranging from 0 (not at all satisfied) to 10 (very satisfied).

Additionally, based on Schnabel and Wagner's work (2007), a combined measure of autonomy at workplace from 0 to 50 is included. The need for trade union explanatory variable reflects whether the respondent agrees that employees need strong unions (1-5). As described previously, there is some concern that this variable causes endogeneity problems⁸. Union at workplace is a binary variable that takes the value 1 if there is a union at the workplace and the value of 0 if there is no functioning union at the respondent's workplace. Finally, parental employment is also a binary variable that is 1 if either the mother or the father of the respondent was self-employed, when the

⁸ A simple t-test reveals that indeed there is a statistically significant difference between how members and non-members see the necessity of trade unions, the correlations range between 0.61 (not significant) for Portugal and 0.316 ($p < 0.001$) for Sweden. Thus, even if there is theoretical expectation for endogeneity, the data structure does not present relationships that should make the researcher too worried.

respondent was 14-years old. A more formal description of the individual level model is the following:

$$\begin{aligned} \text{Link (logit) Member} = & \beta_0 + \beta_1 \text{ AGE} + \beta_2 \text{ AGE}^2 + \beta_3 \text{ MALE} + \beta_4 \text{ LRSCALE} + \beta_5 \\ & \text{LOWEDU} + \beta_6 \text{ HIGHEDU} + \beta_7 \text{ BLUECOL} + \beta_8 \text{ FULLTIME} + \beta_9 \\ & \text{VSEST} + \beta_{10} \text{ LEST} + \beta_{11} \text{ SATIS} + \beta_{12} \text{ WCONTROL} + \beta_{13} \text{ TUNEED} \\ & + \beta_{14} \text{ UWORKPL} + \beta_{15} \text{ PAREMP} + e \end{aligned}$$

All the continuous independent variables included in the equations were mean centered. This transformation was used in order to produce interpretable intercepts for the logistic regressions. Consequently, when intercept is discussed (all explanatory variables are 0), the following 'type of individual' - or his/her probability - is described: female, medium education, white collar, no full-time employment, working in a medium sized establishment, with no union at workplace, with no self-employed parents, age of around 40 years, 5 for the left-right scale, medium satisfaction (6.29), medium workplace control (26.66), and almost 4 for need for TU.

Before fitting the individual level model to the data, as the multilevel framework builds on whether there is a union at the workplace or not, this explanatory variable needs more attention. Table 1 reports detailed and comparative descriptive statistics of this variable.

[TABLE 1 around here]

No matter in which institutional context, there is a high positive correlation between membership and the existence of a trade union at the workplace. This comes as no surprise, and in this case there is no endogeneity problem, since the direction of determination – tested in the regression model – is clear. When there is a union at the workplace, it is expected to see higher unionization. To be more precise, very low

unionization is expected when there is no union present at the workplace, because it would induce higher costs, costs of communication and coordination, and even less plausible benefits. From the crosstabs presented in Table 1, we can observe that, when there are no extension mechanisms, this relationship is even stronger (78.1% of the respondents who indicate union at the workplace are indeed members – compared to the around 50% in the other two institutional settings). Also, if there are no real extension mechanisms, even if there is no union at the workplace, the unionization is higher than in the other scenarios: 22.7% compared to 9.2% and 9.1% (although the absolute numbers are not double).

As expected, the Ghent countries display very different patterns of individual membership. These countries present higher membership numbers – not only in macro-level statistics, but in the samples used as well, and the distributions are very different from the non-Ghent countries. In this case, when there is no union at the workplace, only 5.8% of the respondents are members of a union, and so a strong positive correlation can be found between membership and the presence of the union at the workplace. In the case of the four Ghent countries – Belgium, Denmark, Finland, and Sweden – even if there is no union at the workplace, 56.8% of the respondents in this situation are trade union members. These descriptive statistics already show that, depending on the institutional setting, different unionization patterns emerge. The determination relationship will be tested in the multilevel model employed.

After fitting the individual model to the pooled dataset, the results are in line with the results of Schnabel and Wagner (2007). As age increases, the probability of being a trade union member also increases slightly, and the age-squared control yields the expected result, pointing into a direction of reversed U-shaped relationship. The gender

variable does not reach statistical significance, together with the establishment size. Although one could expect that males and workers in larger establishments are more inclined to join a trade union, the present model does not confirm this hypothesis. Both education variables decrease the probability of being a member to a similar extent; because of the coding, it is straightforward that the highest probabilities of trade union membership are among people with medium education.

The employment related factors as the type of job (blue collar) or the full-time employment have a substantive positive effect on membership. If only these two determinants are taken into consideration and everything else is held constant, these two variables result in an increase in the probabilities of being a member of 5-7 percent each. People positioning themselves more to the left of the political scale register higher odds of being a member as well. Consistent with the expectations, workplace related factors such as satisfaction and control have a negative effect on the log of the odds: the more satisfied people are with their job, or the more control they possess, the smaller the probability of being a trade union member. Nevertheless, these effects are very small, a change of one point on these scales barely influencing the probabilities.

The need for trade union and the union at workplace predictors are directly related to the trade unions, and thus it is not surprising that they greatly influence membership. If there is a union at the workplace, the probability of being a member almost doubles, compared to situations where there is no active union at the workplace. This finding is in line with previous research, which finds that the same individual model specified yields different fit depending on countries (Schnabel and Wagner, 2007). However, there is still much unexplained variance remaining. The individual level model has a residual deviance of 14862 (with null deviance of 18779), associated with an adjusted

R-squared of approximately 0.25. Considering that 16 parameters were estimated, all with sound theoretical expectations and most of them statistically significant, these results clearly indicate that using solely the individual model on the cross-country dataset leaves a significant amount of unexplained variance.

The unexplained variance and the cross-country differences surveyed in the previous section indicate that the analysis of the individual level determinants of trade union membership should take into consideration the place of observations. A multilevel approach yields the possibility, firstly, to incorporate country level variations in the analysis, and secondly, to estimate them (de Leuw and Kreft, 1986; Jones et al., 1987; Luke 2004; Steenbergen and Jones, 2002).

In order to amend the previous considerations, a preliminary analysis was carried out. There are statistically significant differences between the country-means for trade union membership⁹ and a high intra-class correlation. Intra-class correlation measures were computed, and the ICC1 is 0.212, and the ICC2 is 0.9956. Using Bliese's (2006) proposed interpretation, these ICC results would indicate that around 21.2% of the total variance is cross-country variance, and with 99.56% confidence countries can be differentiated considering the trade union membership. The theoretical framework presented above also points into the direction that (at least) some of the variance left unexplained by the individual model is given by cross-country variance. This is a clear indication that the micro-level data is nested in countries, and this nested data structure generates the empirical and statistical motivation to employ a multilevel analysis.

Based on these indications, first an empty or null multilevel model was employed. Formally, this would mean that the intercept of the individual level model was let to

vary randomly across countries, extending the specification $\beta_0 = \gamma_{00} + r_0$, where β_0 is the intercept from the individual model, γ_{00} is the effect of the country on the individual level intercept, and r_0 is the second level error term.

[TABLE 2 around here]

The goal was to see whether accounting for cross-country effects (as unexplained or unspecified random effects) would increase the explanatory power and thus decrease the remaining unexplained variance¹⁰. As expected – and reported in Table 2, this model fits the data much better. When cross-country differences are taken into account, there is a steep decline in the Akaike Information Criterion (12520), indicating a much better fit (Luke, 2004). Furthermore, the residual deviance is decreasing significantly even if one additional parameter is estimated on the same sample size. Finally, the substantive variance of the intercept (as random effect in Table 2) indicates that indeed, the underlying cause of the poor fit for the individual level model was given by the cross-country differences. The substantive implication of this finding is an empirical reinforcement of the statement that determining unionization on the individual level is different from country to country, and a more in-depth analysis should take this into account. Listing the second level random effects (not reported here), we observe very high and positive effects when it comes to Denmark (3.188), Finland (1.821), and Sweden (1.832), and very high negative effect in case of France (-1.803). The positive random effect here means a positive country effect on the intercept, meaning higher default probabilities of membership for the average individual analyzed. Looking at these countries, one must note that France has an extremely low union density (around

⁹In case of the dichotomous variable the mean reflects the frequency of 1 that is the proportion of the sample that is a member of a trade union.

¹⁰ Given this motivation, coefficients are not reported for this model, since (1) no major change is expected in the size of the coefficients and (2) accounting for cross-country variance is the major goal of

8-9%), full extension mechanisms, and no Ghent system. On the other hand, the three countries with big positive country effects are Ghent-countries with well over average union density and lower extension mechanisms. This brief overview already suggests that these country specific random effects could be decreased – and explained – by accounting for institutional differences.

The final step of the present analysis is to explain the cross-country variance with institutional factors that differ from country to country, and are expected to influence the individual level unionization. In this step, the last two hypotheses will be tested. In accordance with the theoretical framework, the multilevel model was extended to encompass the effects of the different extension mechanisms and the effects of the Ghent-system on individual level unionization. Furthermore, as it was hypothesized, these institutional effects change the direct impact of the existence of a union at the workplace. Consequently, the individual level model was extended by the following second level specifications: $\beta_0 = \gamma_{00} + \gamma_{01} \text{EXT01} + \gamma_{02} \text{EXT02} + \gamma_{03} \text{GHENT} + r_0$, and $\beta_{14} = \gamma_{140} + \gamma_{141} \text{EXT01} + \gamma_{142} \text{EXT02} + \gamma_{143} \text{GHENT} + r_{14}$. The first set of specifications describes the institutional factors' influence on the general probability of individual membership, whereas the second specification describes a cross level interaction between whether there is a union at workplace or not, and the institutional characteristics. The originally 3-category variable describing the mandatory or collective extension of collective agreements to non-organized firms in a country was decomposed into two binary variables. Hence, EXT01 is 1, if there are no legal provisions for extending the agreements, and EXT02 is 1, if there are extensions that affect significant segment of the workforce. The middle category is estimated when

this intermediary step.

both of these binary variables take the value 0. GHENT is a binary variable for the existence of a Ghent-system (ICTWSS Codebook 2009, 15). Table 3 displays the results of the multilevel model.

[TABLE 3 around here]

Before analyzing the results, one should return to Table 2 and revisit the fit statistics. The fully specified multilevel model estimates 25 parameters (compared to only 17 previously), but the fit is highly improved (AIC decreasing to 12203). Furthermore, the previously unexplained cross-country variance (random effects in the baseline model) drops almost to its half (0.675), suggesting that the institutional variables included explained a substantial amount of cross-country variance. The individual level fixed effects are not of any more interest at this stage, only the union at workplace in the cross-level interaction setting has to be analyzed. Since there are multiple interactions in the model, marginals will be calculated according to Brambor et al. (2006). One must consider the conditional effects – and not just interpret the main effects as unconditional marginals. Table 4 lists these marginals, accompanied by the exact setting and which countries have this institutional setting and by Figure 1, displaying visually the marginals based on the second column from the table.

[TABLE 4 around here]

Through interpreting these results, together with the raw results from Table 3, the last two hypotheses are confirmed. First, two of the cross-level interactions and one of the main effects are statistically significant, demonstrating interplay between institutional setting and the importance of the existence of a union at the workplace. These effects are not only statistically significant, but substantially sizeable, changing the explicitly individual unionization. Even though there are only four Ghent countries,

looking at the marginals shows that the third hypothesis is confirmed. If we interact union at workplace with the Ghent-system, the individual level determinant loses much from its importance. Depending on the extension mechanisms, this effect could drop to one tenth of the original effect size (0.36, when there are significant extension mechanisms).

[FIGURE 1 around here]

Analyzing the extension mechanisms, the second hypothesis is also confirmed. If significant parts of the workforce are covered by the agreements by extension, it is not that important anymore to have a union present at the workplace. Membership itself is less important, free-riding being an attractive option, thus even if there is a union at the workplace; it has a weaker effect in pushing people to unionize (2.381 compared to 3.436, or 0.36 compared to 1.415 - in unstandardized coefficients). However, the findings regarding the Ghent-system and extension mechanisms are different. In the latter case, as presented above, even if there is union at the workplace, workers do not join the union directly, whereas in the Ghent-countries, membership is very high indeed (also confirmed by the sizeable and significant 3.324 main effect of the Ghent variable); furthermore, it does not matter whether there is a union at workplace or not, unionization will stay attractive and high in numbers. This is the pattern displayed by the cross-level interactions and main effects, confirming the hypotheses formulated earlier. Hence, even if some countries have the same institutional characteristics, leading to the same slopes when it comes to union at workplace, these countries still show differences because of the random effects at the intercept and the slope level, all of these incorporated in the random effect variance that changes the probability of membership accordingly.

5 Conclusions

Analyzing individual trade union membership is crucial in understanding what the prospects of trade unions are in the future. However, throughout this paper I attempted to demonstrate that this analysis should take into consideration macro-level factors, such as institutional characteristics linked to extension mechanisms or the Ghent-system. Alongside the theoretical motivation built on new institutionalism and the interaction between various levels of analysis, there was a strong empirical motivation also. Previous research of individual union membership left substantial amount of unexplained variance and possibilities to enhance these models by accounting for cross-country differences. The analysis was carried out on data from 21 European countries, so different, but so similar in some cases. Although the sample sizes and some distributions were not even close to perfection, there was no major problem with the data, and thus all models converged.

The results confirmed the hypotheses set in the beginning of the paper. First, models can be highly improved if we allow cross-country variance, and even further improved if country specific variables are included as second level explanatory factors.

Previously, the existence of a union at the workplace was found to be an important predictor of union membership. Intuitive and straightforward as it sounds, this paper brought evidence that this statement should be nuanced. The institutional setting acts as significant moderator of this effect. Favorable institutional settings lead to higher unionization by influencing the general membership probabilities and this is also reflected in the aggregate statistics of union density. However, if the conditions are indeed very favorable, having a union at the workplace loses from its importance. In Ghent-systems – as an example for the high general probabilities of membership – the

institutional setting is so favorable that even if there is no active union at one's workplace, this will not prevent membership. Conversely, if there a significant part of the workforce benefits from extension mechanisms, having a union at the workplace will not lead to membership, since from a cost-benefit perspective membership becomes uninteresting. These two phenomena serve as examples that, although the moderation effects are similar, combined with the main effect, a series of descriptive statistics, and a theoretical framework, one can identify two opposite reasons for this decline in importance.

To further extend the present research, one could build a similar multilevel analysis in a setting where observations are not nested solely in countries, but in smaller territorial-administrative units. Even if the most powerful unions act on a national level, more as conglomerates, their practices can differ depending on the region's economic climate, sub-national legal framework, labor market conditions, etc. Another possible path would be to get such data that link the member to a given union in a country. Then, a 3-level model could be employed which also takes into the consideration variance among unions and their strategies. The present paper drew a framework in which institutions directly affect individual unionization, but the intermediary level would definitely be the level of trade unions. Furthermore, the findings of this research serve as an empirical demonstration that a holistic approach proves to be fruitful when studying unionization and the interplay between institutions, unions and individuals.

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TABLE 1: Comparative descriptive statistics for union at workplace

	Not trade union member	Trade union member	Correlation
No Extension mechanism			
No union at workplace	1245 (77.3%)	366 (22.7%)	.529***
Union at workplace	736 (21.9%)	2626 (78.1%)	Difference in means and two-tailed significance
Mean of union at workplace (due to the coding, reflects frequency as well)	0.37	0.88	0.51***
Extension mechanism mid			
No union at workplace	2362 (90.8%)	239 (9.2%)	.462***
Union at workplace	1605 (46.5%)	1848 (53.5%)	Difference in means and two-tailed significance
Mean of union at workplace (due to the coding, reflects frequency as well)	0.40	0.89	0.49***
Extension mechanism high			
No union at workplace	2459 (90.9%)	247 (9.1%)	.401***
Union at workplace	1702 (54.6%)	1418 (45.4%)	Difference in means and two-tailed significance
Mean of union at workplace (due to the coding, reflects frequency as well)	0.41	0.85	0.44***
Ghent-system 0			
No union at workplace	5685 (94.2%)	351 (5.8%)	.499***
Union at workplace	3437 (47.9%)	3735 (52.1%)	Difference in means and two-tailed significance
Mean of union at workplace (due to the coding, reflects frequency as well)	.38	.91	.53***
Ghent-system 1			
No union at workplace	381 (43.2%)	501 (56.8%)	.205***
Union at workplace	606 (21.9%)	2157 (78.1%)	Difference in means and two-tailed significance
Mean of union at workplace (due to the coding, reflects frequency as well)	.61	.81	.20***

Note: Significance level '***' for $p < 0.001$.

TABLE 2: Comparative fit statistics for trade union membership

	Fully specified ML Model	Baseline ML Model	Pooled Regression Model
Comparative fit statistics			
AIC	12203	12520	14894
BIC	12391	12648	-
Log-Likelihood	-6076	-6243	-7431
N	13796	13796	13796
Parameters estimated	25	17	16
Random effects	Variance (Standard Deviation)	Variance (Standard Deviation)	
Intercept	0.675 (0.821)	1.337 (1.156)	-
Union at workplace	0.68 (0.684)	-	-

Note: Since there is a nested structure among these models – pooled regression nested in the baseline ML, and baseline ML nested in the fully specified ML model, chi square distance tests were also conducted (Luke, 2004). The difference in model fit and explanatory power presented in the table are statistically significant ($p < 0.001$) for both comparisons. Thus, even if the number of parameters increases and the sample size stays constant, the baseline ML model fits the data significantly better than the pooled logistic model, and the fully specified model fits the data significantly better than the baseline ML model.

TABLE 3: Model results and fit statistics for trade union membership

	Unstandardized Coefficients and Standard Errors		Two-tailed significance levels	Effects transformed into change in probabilities of membership (0 to 1) at a one unit increase in the independent variables (if everything else held constant)
Intercept	-2.683	0.435	***	-
Age	0.153	0.013	***	0.038
Age squared	-0.149	0.015	***	-0.037
Male	-0.036	0.050		-0.009
Left-right scale	-0.048	0.011	***	-0.012
Low education	-0.226	0.063	***	-0.056
High education	-0.212	0.091	*	-0.053
Blue collar worker	0.205	0.061	***	0.051
Full-time worker	0.321	0.059	***	0.080
Very small establishment	-0.048	0.061		-0.012
Large establishment	-0.047	0.061		-0.012
Satisfaction with the workplace	-0.030	0.010	**	-0.007
Workplace control	-0.005	0.002	**	-0.001
Need for TU	0.489	0.026	***	0.120
TU at workplace	3.436	0.370	***	0.469
Parental employment	-0.097	0.054	~	-0.024
No extension	-0.515	0.511		-0.126
Significant extension	-0.527	0.508		-0.129
Ghent-system	3.324	0.492	***	0.465
Union at workplace: No extension	-0.639	0.439		-0.155
Union at workplace: Significant extension	-1.055	0.437	**	-0.242
Union at workplace: Ghent	-2.021	0.421	***	-0.383
Random effects	Variance (Standard Deviation)		For baseline ML model	For Pooled Logistic Model
Intercept	0.675 (0.821)		1.337 (1.156)	-
Union at workplace	0.68 (0.684)		-	-

Note: Significance levels *** for $p < 0.001$. ** for $p < 0.01$. * for $p < 0.05$. ~ for $p < 0.1$.

TABLE 4: Model based marginals for union at workplace

Institutional setting/Countries	Effect of union at workplace expressed as coefficient (everything else held constant)	Effect of union at workplace expressed as coefficient, only significant ones in model (everything else held constant)
No extension mechanism, No Ghent-system UK, Ireland, Norway	2.797	3.436
Mid-level extension mechanism, No Ghent-system Czech-Republic, Germany, Hungary, Italy, Luxembourg, The Netherlands, Poland	3.436	3.436
Significant extension mechanism, No Ghent-system Austria, Switzerland, Spain, France, Greece, Portugal, Slovenia	2.381	2.381
No extension mechanism, Ghent- system Denmark, Sweden	0.766	1.415
Mid-level extension mechanism, Ghent-system Finland	1.415	1.415
Significant extension mechanism, Ghent-system Belgium	0.36	0.36

FIGURE 1: Marginal Effects

